

FINAL REPORT

**MELIADINE WEST GOLD PROJECT:
WATER QUALITY BASELINE STUDIES 2008**

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Executive Summary

Golder Associates Ltd. (Golder) was retained by Comaplex Minerals Corporation (Comaplex) to conduct water and sediment quality surveys at the Meliadine West Gold Project (Project) in June and July, 2008. These water and sediment quality baseline studies build upon previous studies conducted by R.L.&L. Environmental Services Ltd. (RL&L) in 1997-2000 (RL&L 1998, 1999, 2000, and 2001). The overall purpose of the 2008 field program was to expand the existing baseline water and sediment quality database for lakes and streams in the watersheds that may be affected by the potential mine development and mining activities. This data report summarizes the results of studies during the 2008 field season.

The main areas of emphasis within the Project area included Meliadine Lake, Meliadine River, and several lakes and streams situated on a peninsula at the southeast end of Meliadine Lake. In addition, samples were collected from the Discovery area. Water samples were collected from ten stream sites (A8-7, B7-6, B5-4, ML-MR, DI-4, DI-6, DI-7, NEW-1, NEW-2, NEW-3) in June (i.e., during freshet) and five stream sites (A8-7, B7-6, B5-4, and ML-MR) in July (i.e., during base flow conditions). Water samples were also collected from 13 lake sites (A8 – Pump Lake, A54 – Peanut Lake, B7, B6, B5, Control, BOOT-1, BOOT-2, DI-1, DI-4, ML-E, ML-SE, and ML-W) in July.

Streams and lakes of the Project area were clear, well-oxygenated freshwater systems generally characterized by low ionic strength, soft water hardness, low alkalinity, and neutral to alkaline pH. Measured nutrient concentrations in all streams and most lakes were typical of oligotrophic waterbodies in subarctic regions. Lake A54 (Peanut Lake) was markedly different from other lakes in having higher ionic strength, hard water hardness, higher alkalinity, and the highest concentrations of chloride, ammonia, nitrite, nitrate, and total Kjeldahl nitrogen (TKN).

Concentrations of total metals in the water samples were generally below the Canadian water quality guidelines (CWQGs) for the protection of aquatic life – freshwater (Canadian Council of Ministers of the Environment [CCME] 2007) and guidelines for Canadian drinking water quality (GCDWQ) (Health Canada 2008). There were few exceedences of guidelines. Total iron concentration was above the CWQG and GCWQG guidelines of 0.3 milligrams per litre (mg/L) at 0.587 milligrams per litre (mg/L) in the summer sample of stream NEW-1. Total copper concentration was 0.0027 mg/L in Lake B7, which was higher than the hardness-dependent CWQG of 0.002 mg/L. Nitrite concentrations exceeded the CWQG of 0.06 mg/L in four streams (DI-6, DI-7,

DI-4, NEW-3) under freshet conditions. Nitrate and nitrite concentrations exceeded CWQGs in Lake A54.

Phenols, oil and grease, and total petroleum hydrocarbons (i.e., benzene, toluene, ethylbenzene, xylenes [BTEX]; F1, F2, F3, and F4 fractions) were measured in six lake sites nearest to the proposed mine site: A8, A54, B7, B6, B5, BOOT-1, and BOOT-2. Concentrations of these organic constituents were below associated guidelines, with the exception of phenol in Lake A54, which had a concentration equal to the CWQG of 0.004 mg/L.

Sediment samples were collected in June from one location in each of seven lakes (A8, B7, B6, B5, DI1, DI4, and Control Lake) and from multiple locations in Meliadine Lake (BOOT-1, BOOT-2, ML-E, ML-SE, and ML-W). Both shallow (0 to 2 cm) and deeper (0 to 10 cm) profiles were collected. Concentrations of metals that were detected in all sediment samples (i.e., arsenic, chromium, copper, and zinc) were compared graphically to determine if the shallow profile differed in metal concentrations from the deeper profile. Metal concentrations were generally similar between two profiles, suggesting that there were no differences in contaminant chemistry between the profiles. Therefore current (2008) and future data from the shallow (0 to 2 cm) profile can be compared to the historical dataset, which was based on the deeper (0 to 10 cm) profile.

The grain size of sampled sediments ranged from sandy to silty/clayey. Most sites in Meliadine Lake and Control Lake were predominantly sandy, whereas the remaining sites were relatively silty or silty/sandy. Concentrations of total nitrogen ranged from 0.07 to 1.44 percent (%) across sites. Total organic carbon (TOC) concentrations were more variable and ranged from 0.7 to 16.9%.

Concentrations of metals and polycyclic aromatic hydrocarbons (PAHs) in sediment samples were compared against Canadian sediment quality guidelines for the protection of aquatic life (CCME 2002), including interim freshwater sediment quality guidelines (ISQG) and probable effect levels (PEL). There were exceedences of arsenic, chromium, and copper sediment quality guidelines in many sediment samples. Arsenic concentrations exceeded the ISQG of 5.9 milligrams per kilogram (mg/kg) dry weight (dw) in the majority (69%) of the samples and exceeded the PEL of 17.0 mg/kg dw in nearly half (45%) of the samples. Chromium concentrations exceeded the ISQG of 37.3 mg/kg dw in 22% of samples; the PEL of 197 mg/kg dw was not exceeded in any sample. Copper concentrations exceeded the ISQG of 35.7 mg/kg dw in 43% of the samples but the PEL of 197 mg/kg dw was not exceeded in any sample. There was only one PAH exceedence. In one sediment sample from the Lake A8 site, naphthalene concentration was 0.06 mg/kg dw, which was higher than the ISQG of 0.0346 mg/kg dw but lower than the PEL of 0.391 mg/kg dw.

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1 INTRODUCTION.....	1
1.1 BACKGROUND.....	1
1.2 OBJECTIVES	5
1.3 SELECTION OF SAMPLING SITES IN 2008	6
2 METHODS	17
2.1 WATER QUALITY	17
2.1.1 Streams.....	17
2.1.2 Lakes.....	18
2.1.3 Quality Assurance/Quality Control	19
2.1.4 Data Screening	21
2.2 SEDIMENT QUALITY.....	21
2.2.1 Quality Assurance/Quality Control	22
2.2.2 Data Screening	23
3 RESULTS AND DISCUSSION.....	24
3.1 WATER QUALITY IN STREAMS	24
3.1.1 Conventional Water Quality Parameters	24
3.1.2 Nutrients.....	27
3.1.3 Metals.....	29
3.1.4 Cyanide	31
3.1.5 Summary.....	31
3.2 WATER QUALITY IN LAKES	32
3.2.1 Vertical Profiles	32
3.2.2 Conventional Water Quality Parameters	32
3.2.3 Nutrients.....	35
3.2.4 Metals.....	36
3.2.5 Cyanide	39
3.2.6 Phenols and Other Organics.....	39
3.2.7 Summary.....	40
3.2.8 Quality Assurance/Quality Control	41
3.3 SEDIMENT QUALITY IN LAKES	42
3.3.1 Physical Characterization	42
3.3.2 Nutrients.....	42
3.3.3 Metals.....	43
3.3.4 Organics.....	45
3.3.5 Summary.....	47
3.3.6 Quality Assurance/Quality Control	48
3.4 RECOMMENDATIONS	48
4 STATEMENT OF LIMITATIONS	50
5 CLOSURE.....	53
6 REFERENCES.....	55

LIST OF TABLES

Table 2-1	Stream Water Sampling Stations in the Meliadine West Gold Project Area, 2008	17
Table 2-2	Lake Water Sampling Stations in the Meliadine West Gold Project Area, 2008	19
Table 2-3	Summary of the Quality Assurance/Quality Control Water Samples Collected in the Meliadine West Gold Project Area, 2008.....	20
Table 2-4	Lake Sediment Sampling Stations in the Meliadine West Gold Project Area, 2008	22
Table 3-1	Range of Total Metals Concentrations Measured in the Stream Samples.....	30
Table 3-2	Range of Total Metals Concentrations Measured in the Lake Samples	38
Table 3-3	Range of Metals Concentrations Measured in the Sediment Samples	43
Table 3-4	Range of Select Polycyclic Aromatic Hydrocarbon Concentrations Measured in the Sediment Samples.....	46

LIST OF FIGURES

Figure 1-1	Location of the Meliadine West Gold Project.....	3
Figure 1-2	2008 Water Quality Sampling Locations in the Meliadine West Gold Project Area	7
Figure 1-3	2008 Water Quality Sampling Locations in the Discovery Area	9
Figure 1-4	2008 Sediment Quality Sampling Locations in the Meliadine West Gold Project Areae	13
Figure 1-5	2008 Sediment Quality Sampling Locations in the Discovery Area	15
Figure 3-1	Concentrations of Select Water Quality Parameters in Streams of the Meliadine West Gold Project Area, 2008.....	25
Figure 3-2	Concentrations of Nutrients and Total Metals in Streams of the Meliadine West Gold Project Area, 2008	28
Figure 3-3	Concentrations of Select Parameters in Lakes of the Meliadine West Gold Project Area, 2008	34
Figure 3-4	Concentrations of Nutrients and Metals in Lakes of the Meliadine West Gold Project Area, 2008	37
Figure 3-5	Relationship between Shallow (0 to 2 cm) and Deep (0 to 10 cm) Sediment Profiles.....	45

LIST OF APPENDICES

APPENDIX i	Water Quality Data for Streams in the Meliadine West Gold Project Area
APPENDIX ii	Water Quality Data for Lakes in the Meliadine West Gold Project Area
APPENDIX iii	Sediment Quality Data for Lakes in the Meliadine West Gold Project Area
APPENDIX IV	Analytical Chemistry Reports

ACRONYMS

BTEX	benzene, toluene, ethylbenzene, xylenes
CCME	Canadian Council of Ministers of the Environment
Comaplex	Comaplex Minerals Corporation
CWQG	Canadian water quality guidelines for the protection of freshwater aquatic life
DL	detection limit
DO	dissolved oxygen
DOC	dissolved organic carbon
dw	dry weight
GCDWQ	guidelines for Canadian drinking water quality
Golder	Golder Associates Ltd.
ISQG	interim freshwater sediment quality guidelines
GPS	global positioning system
PAHs	polycyclic aromatic hydrocarbons
PEL	probable effect level
Project	Meliadine West Gold Project
QA/QC	quality assurance/quality control
RL&L	R.L.&L. Environmental Services Ltd.
RPD	relative percent difference
TC	total carbon
TDS	total dissolved solids
TIC	total inorganic carbon
TKN	total Kjeldahl nitrogen
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TSS	total suspended solids
WQG	water quality guidelines
ww	wet weight

UNITS

cm	centimetres
km	kilometres
km ²	square kilometres
m	metres
mg/kg	milligrams per kilogram
mg/L	milligrams per Litre
mm	millimetres
°C	degrees Celsius
µS/cm	microSiemens per centimetre
µg/L	micrograms per litre
µm	micrometre
%	percent
<	less than

1 INTRODUCTION

1.1 BACKGROUND

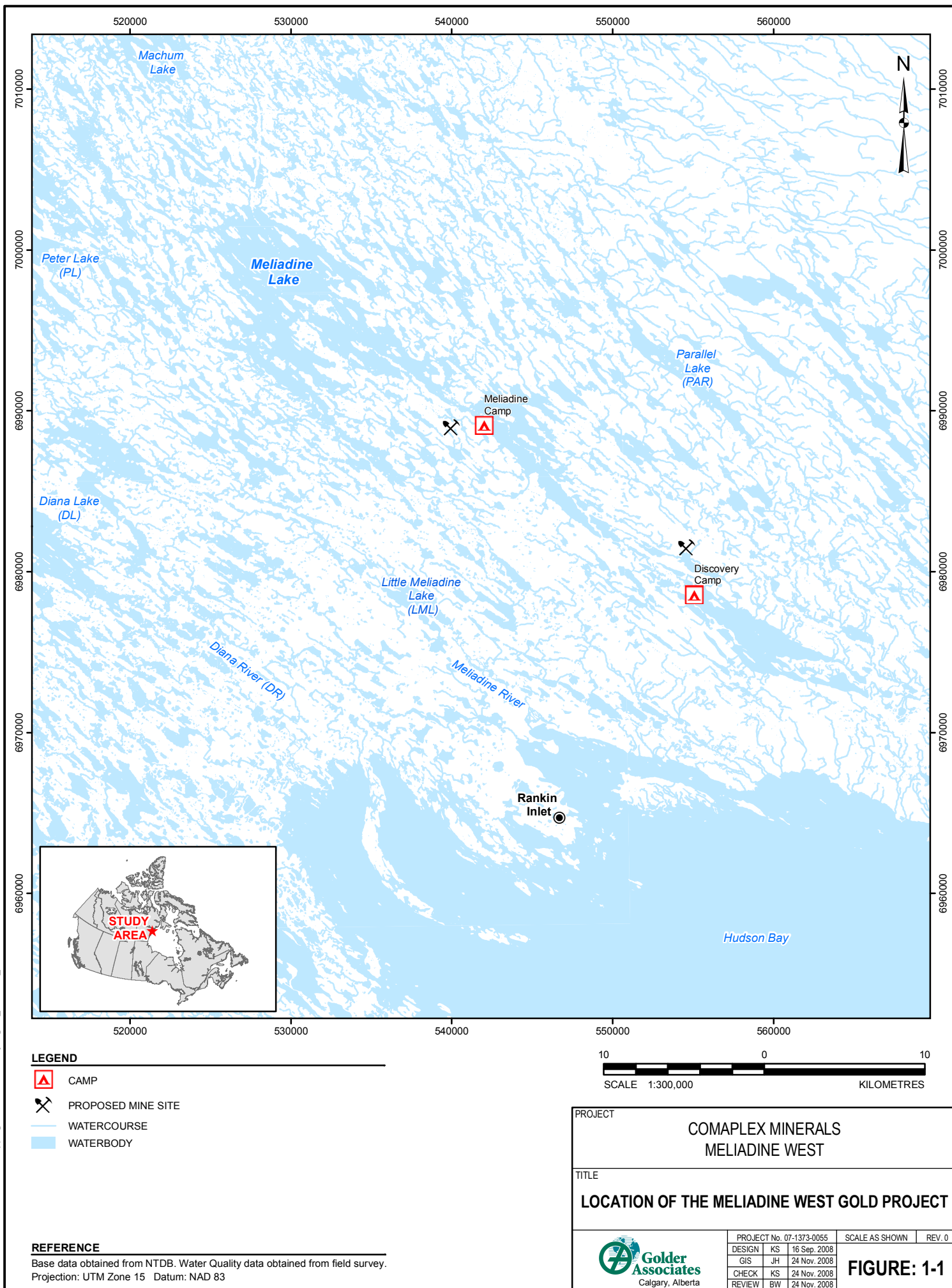
Comaplex Minerals Corporation (Comaplex) proposes to construct and operate a gold mine, known as the Meliadine West Gold Project (Project) 30 kilometres (km) northwest of Rankin Inlet, and 80 km south of Chesterfield Inlet in the Kivalliq Region of Nunavut (Figure 1-1). The proposed Project site is located on a peninsula between the east, south, and west basins of Meliadine Lake on Inuit Owned Land.

The Project area is within the zone of continuous permafrost approximately 400 km north of the tree line with typical sub-arctic vegetation. The terrain is dominated by glacial landforms that include drumlins of glacial till, eskers consisting of gravels and sands and numerous shallow lakes. The glacial deposits form low relief ridges oriented in a northwest-southeast direction. Regional drainage patterns are controlled by these ridges and the prevailing permafrost.

Meliadine Lake covers an area of 107 square kilometres (km²) with a maximum length of 31 km (Environment Canada 1973). It features a highly convoluted shoreline (465 km in length) and over 200 islands. Most of the lake drains via the Meliadine River, which originates at the south end of the lake and flows through a series of waterbodies and short river segments into Hudson Bay (distance of 39 km). A second, smaller outflow from the west basin of Meliadine Lake drains into Peter Lake, which discharges into Hudson Bay through the Diana River system (distance of 70 km).

Several small watersheds drain into Meliadine Lake from a large peninsula between the south and east basins of Meliadine Lake. These peninsula watersheds comprise networks of lakes, ponds, and interconnecting streams. There are three main watersheds in this peninsula; they were designated as Basins A, B, and D by R.L.&L. Environmental Services Ltd. ([RL&L] 1998, 1999, 2000, and 2001). In general, lakes and ponds within the peninsula are numbered relative to their position in the drainage, with the numbers increasing in the upstream direction of the longest chain of waterbodies. Similarly, interconnecting streams between lakes and/or ponds were designated using the corresponding lake/pond identification numbers (e.g., Stream A1-2 connects Lake A1 and Pond A2 in Basin A). The lakes of Basin A discharge into the east basin of Meliadine Lake and the lakes of Basin B discharge into the south basin of Meliadine Lake.

I:\2007\07-137307-1373-0055\Mapping\MXD\WaterQuality\Fig1-1_Location_WQ.mxd



WMC International Ltd. undertook a multi-year gold exploration program in the Project area, beginning in 1995. That program included aquatic baseline studies within the Project area from 1997 to 2000 (RL&L 1998, 1999, 2000, 2001). The main areas of emphasis within the Project area included Meliadine Lake, Meliadine River, and several lakes and streams situated on a peninsula at the southeast end of Meliadine Lake. Additional sampling sites included Control Lake (a future reference lake), Peter Lake (downstream of Meliadine Lake), and Hudson Bay near the mouth of the Meliadine River. Collected data included water quality and sediment quality, invertebrate communities, fish populations, and fish habitat. Stream crossings within a proposed road corridor between Rankin Inlet and the proposed Project were also sampled. Hydrology and wildlife studies were also carried out in the Project area during this period.

In 2007, Comaplex retained Golder Associates Ltd. (Golder) to review the available baseline water and sediment quality data and to develop a 2008 field program. The water and sediment data were reviewed for adequacy, comparability, and ability to assess spatial and temporal trends; screened against current water and sediment quality guidelines; and assessed for priority data gaps with respect to characterizing baseline conditions.

The available baseline data provided good spatial coverage of the regional waterbodies and the water quality parameters chosen for measurement were appropriate; however, the data were outdated. As most of the baseline data were collected in 1997-2000, they lacked current information specific to the proposed mine area and its immediate receiving environment. Some CCME guidelines have changed (e.g., cadmium) and thus lower analytical detection limits were required. Advances in the new understanding of sediment chemistry and toxicology suggest that shallower profiles are needed to adequately assess future mine impacts. Finally, more data were needed to characterize the temporal variability in water quality (i.e., spring and summer in streams, and summer and winter in lakes). Therefore, the 2008 field program was designed to address these data gaps.

1.2 OBJECTIVES

The overall purpose of the water and sediment quality sampling program in 2008 was to expand the existing baseline water and sediment quality database of lakes and streams in the watersheds that may be affected by the potential mining activities. The specific objectives of the 2008 field program included:

- describing the baseline water and sediment conditions in waterbodies that may be potentially affected by the Project;

- discussing seasonal and/or spatial variation of water and sediment quality parameters; and
- comparing baseline water quality data with applicable aquatic life and drinking water guidelines and baseline sediment quality data with applicable interim sediment quality guidelines.

This data report summarizes the results of water and sediment studies during the June and July, 2008 field season.

1.3 SELECTION OF SAMPLING SITES IN 2008

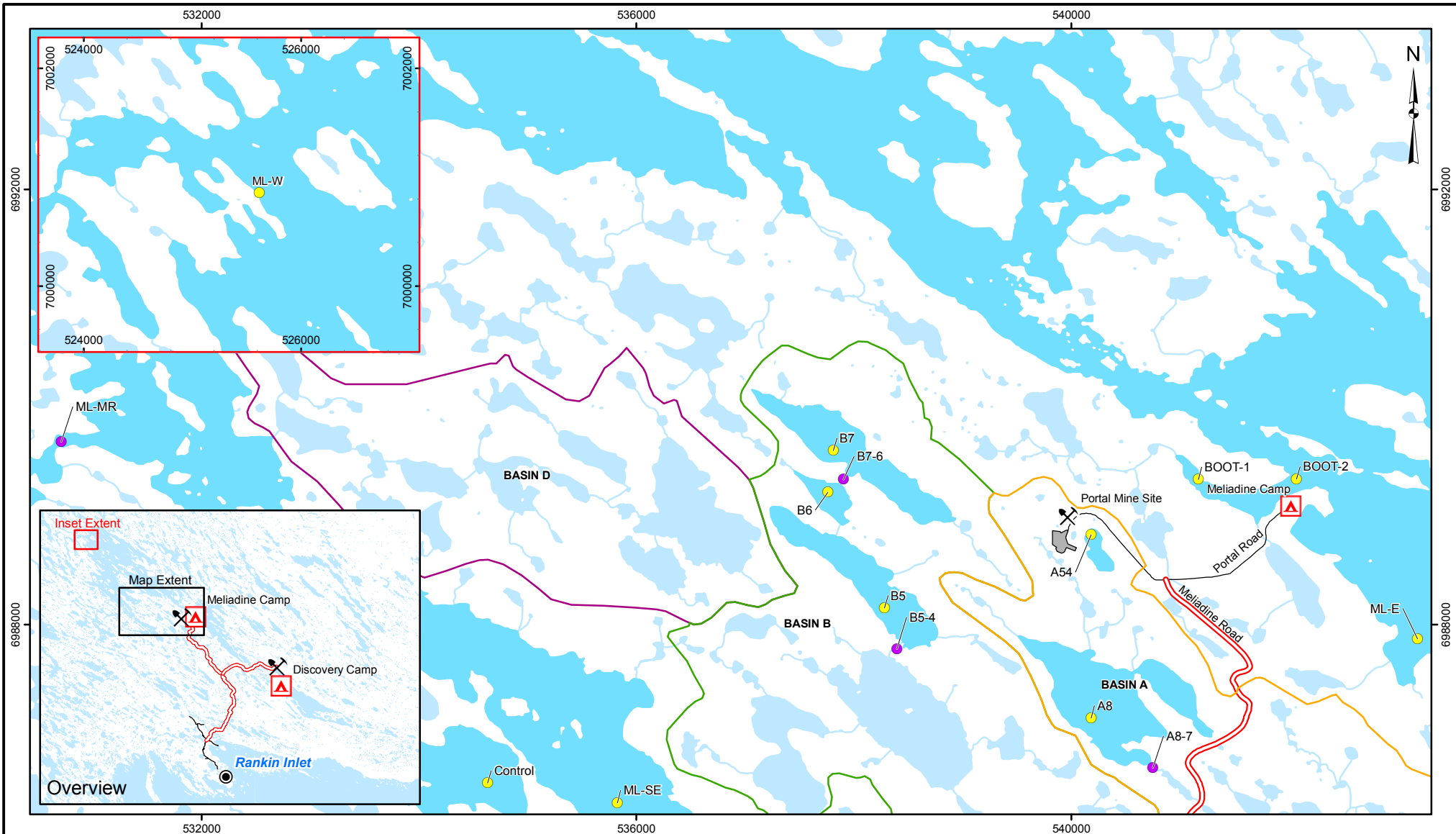
Information provided to Golder by Comaplex¹ prior to the 2008 field program indicated that the proposed mine processing plant, open pits, waste rock piles, and overburden piles will be located between Lakes B7, B6, B5, A8 (Pump Lake), and A54 (Peanut Lake) with Lake B7 as a potential tailings pond. Therefore, in the 2008 field program, water and sediment were collected from these lakes and from Control Lake, which drains into the south basin of Meliadine Lake from the south and was selected as a control basin². Water samples were collected from nearby streams at outlets of Lake A8 (A8-7), Lake B7 (B7-6), and Lake B5 (B5-4) as well as from the outlet of Meliadine Lake to Meliadine River (ML-MR) (Figure 1-2). Sampling was also conducted at various sites within Meliadine Lake. Lake water samples were collected in the east basin [ML-E], southeast basin [ML-SE], and west basin [ML-W] (Figure 1-2).

Comaplex is also investigating an alternative land-based tailing disposal strategy upstream of a small bay north of the existing camp. This bay was sampled at two locations: BOOT-1 at the shallow west end of the bay and BOOT-2 near the outlet into the east basin of Meliadine Lake (Figure 1-2).

At the request of Comaplex, additional sampling sites located in the Discovery area were included as a proactive measure in the event that mining operations are expanded into this area. These sites included Lakes DI1 and DI4 and Streams DI-4, DI-6, DI-7, NEW-1, NEW-2, and NEW-3 (Figures 1-3). To accommodate this additional sampling, sites originally planned in Peter Lake and Little Meliadine Lake were removed from the 2008 program (Golder 2008).

¹ Based on a Comaplex map entitled "Preliminary Site Development Plan Snowpack Surveys" dated Feb 2008 and received via Jacek Patalas on May 15, 2008.

² Control Lake was selected by WMC International Inc. as a control basin due to the absence of past and likely future drilling activities (RL&L 1998, 1999, 2000, and 2001).

**LEGEND**

- | | | | |
|--|---------------------------------|--|-------------------|
| | CAMP | | BASIN A |
| | LAKE SAMPLED IN JULY | | BASIN B |
| | PROPOSED MINE SITE | | BASIN D |
| | STREAM SAMPLED IN JUNE AND JULY | | PORTAL WORK AREA |
| | ROAD - EXISTING | | SAMPLED WATERBODY |
| | ROAD - PROPOSED ALIGNMENT | | WATERBODY |
| | WATERCOURSE | | |

REFERENCE

Base data obtained from NTDB. Water quality data obtained from field.
 Projection: UTM Zone 15 Datum: NAD 83

1,500 0 1,500
 SCALE 1:50,000 METRES

PROJECT

COMAPLEX MINERALS
 MELIADINE WEST

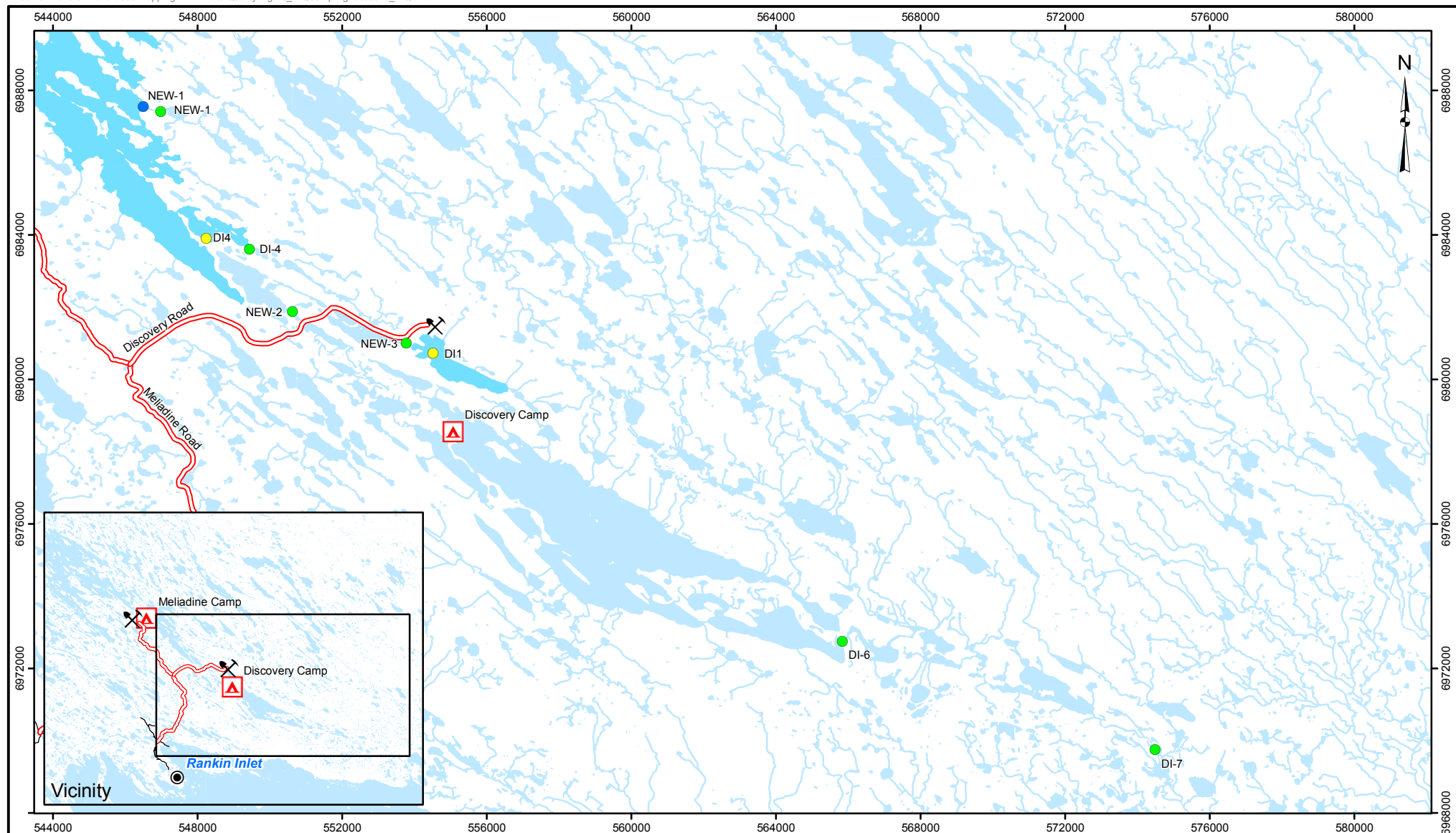
TITLE

**2008 WATER QUALITY SAMPLING LOCATIONS
 IN THE MELIADINE WEST GOLD PROJECT AREA**



PROJECT NO. 07-1373-0055			SCALE AS SHOWN	REV. 0
DESIGN	KS	16 Sep. 2008		
GIS	JH	24 Nov. 2008		
CHECK	KS	24 Nov. 2008		
REVIEW	BW	24 Nov. 2008		

FIGURE: 1-2

**LEGEND**

- | | | | |
|--|---------------------------|--|-------------------|
| | CAMP | | WATERCOURSE |
| | LAKE SAMPLED IN JULY | | SAMPLED WATERBODY |
| | PROPOSED MINE SITE | | WATERBODY |
| | STREAM SAMPLED IN JUNE | | |
| | STREAM SAMPLED IN JULY | | |
| | ROAD - EXISTING | | |
| | ROAD - PROPOSED ALIGNMENT | | |

REFERENCE

Base data obtained from NTDB. Water quality data obtained from field.
 Projection: UTM Zone 15 Datum: NAD 83

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PROJECT

COMAPLEX MINERALS
 MELIADINE WEST

TITLE

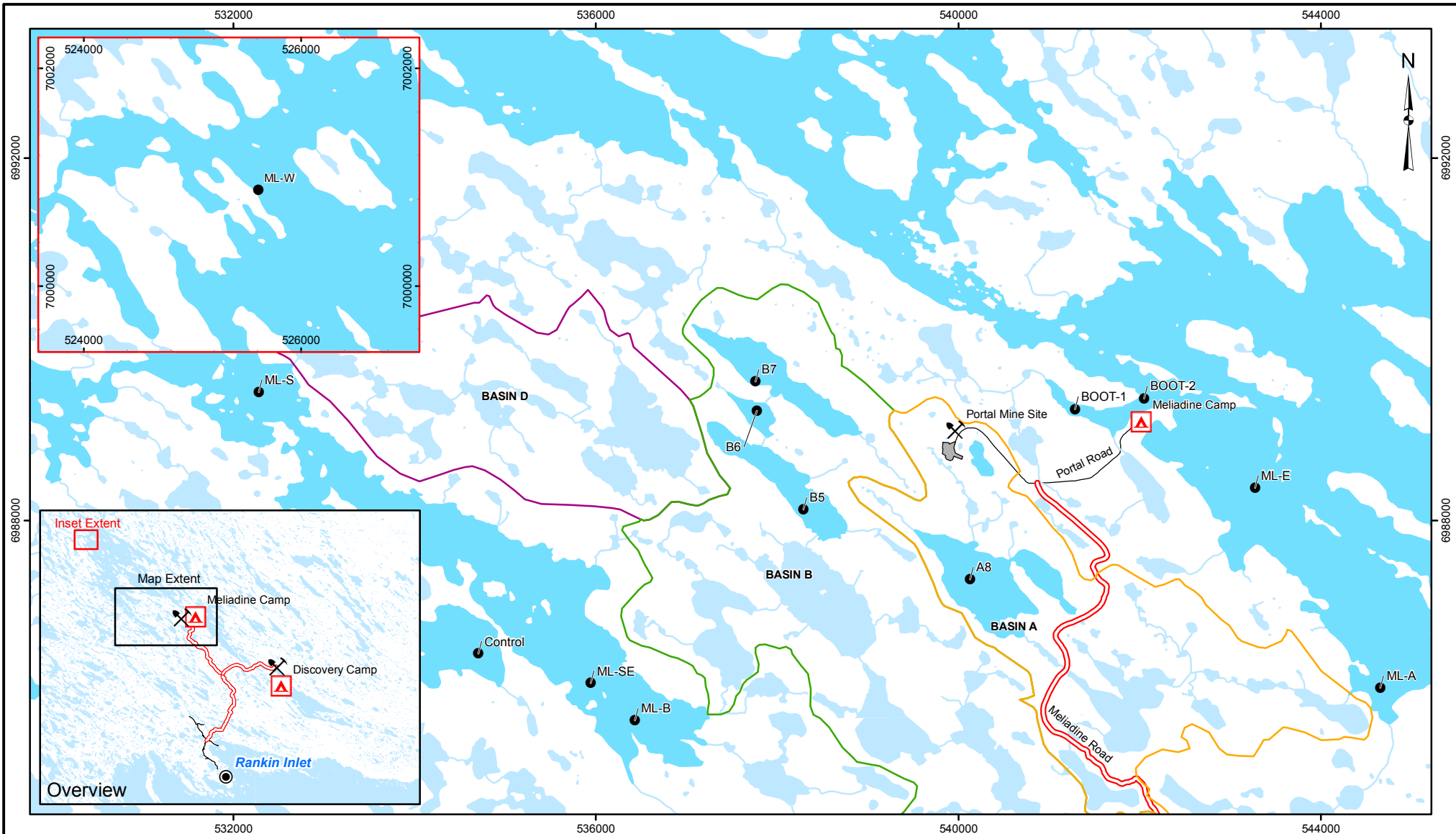
**2008 WATER QUALITY SAMPLING LOCATIONS
 IN THE DISCOVERY AREA**



PROJECT NO. 07-1373-0055			SCALE AS SHOWN	REV. 0
DESIGN	KS	16 Sep. 2008		
GIS	JH	24 Nov. 2008		
CHECK	KS	24 Nov. 2008		
REVIEW	BW	24 Nov. 2008		

FIGURE: 1-3

Sediment samples were collected in the Project area and the Discovery area (Figures 1-4 and 1-5). Most sediment sampling stations in the current study were located in the deepest zones of the lakes as was the case for the previous collection (i.e., 1998 field program; RL&L 1999). Similar to water quality sampling locations, sediment samples sites were located in lakes B7, B6, B5, A8 and Meliadine Lake (Figure 1-4). Sediment samples were also collected at ML-A and ML-B, which are near the outlets of Basins A and B into Meliadine Lake (Figure 1-4).

**LEGEND**

- | | | | |
|--|---------------------------|--|-------------------|
| | CAMP | | BASIN A |
| | PROPOSED MINE SITE | | BASIN B |
| | SEDIMENT SAMPLED IN JULY | | BASIN D |
| | ROAD - EXISTING | | PORTAL WORK AREA |
| | ROAD - PROPOSED ALIGNMENT | | SAMPLED WATERBODY |
| | WATERCOURSE | | WATERBODY |

REFERENCE

Base data obtained from NTDB. Water quality data obtained from field.
 Projection: UTM Zone 15 Datum: NAD 83

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PROJECT

COMAPLEX MINERALS
 MELIADINE WEST

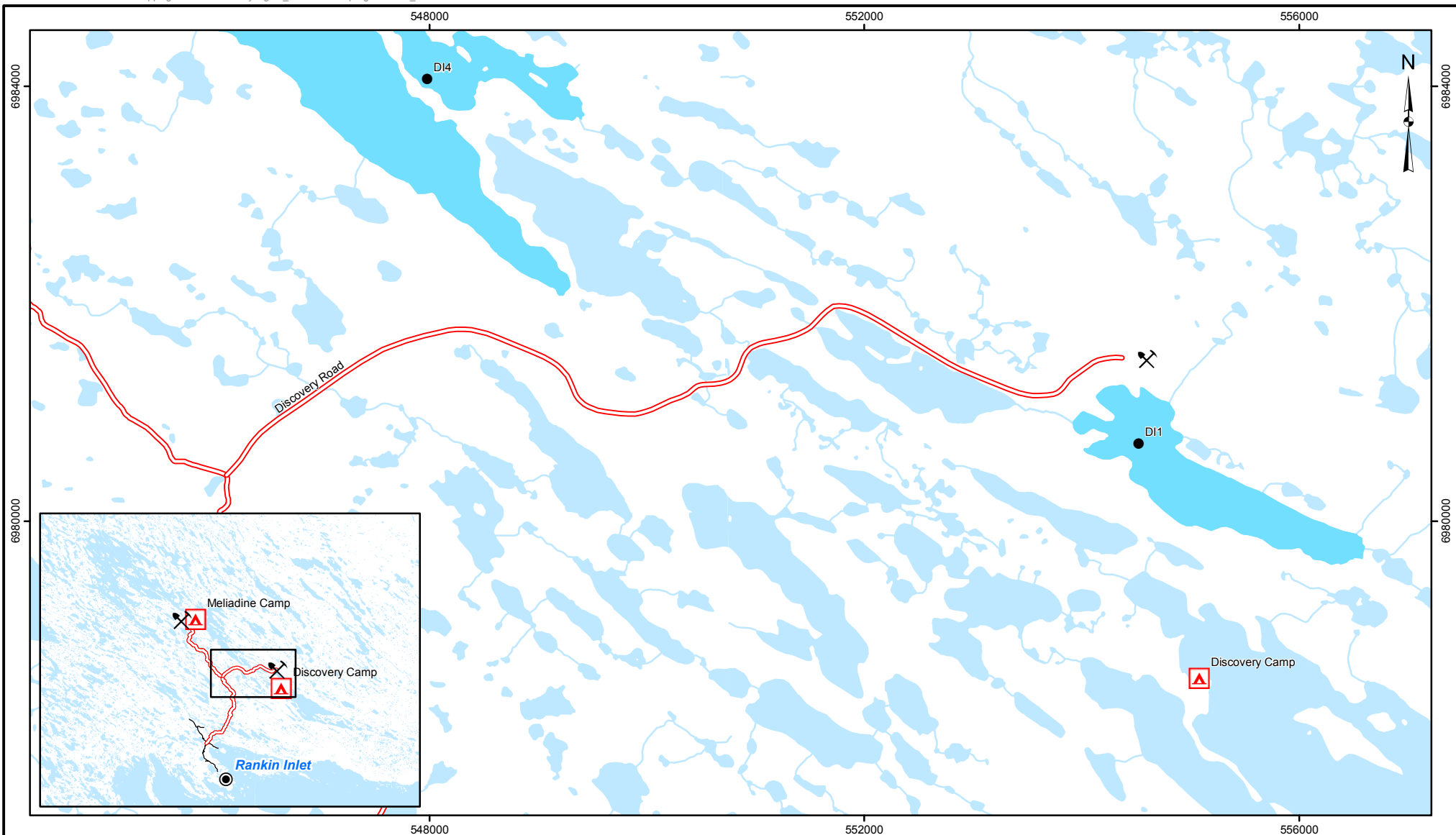
TITLE

2008 SEDIMENT QUALITY SAMPLING LOCATIONS
 IN THE MELIADINE WEST GOLD PROJECT AREA



PROJECT NO. 07-1373-0055			SCALE AS SHOWN	REV. 0
DESIGN	KS	16 Sep. 2008		
GIS	JH	24 Nov. 2008		
CHECK	JH	24 Nov. 2008		
REVIEW	JH	24 Nov. 2008		

FIGURE: 1-4

**LEGEND**

- CAMP
- PROPOSED MINE SITE
- SEDIMENT SAMPLED IN JULY
- ROAD - EXISTING
- ROAD - PROPOSED ALIGNMENT
- WATERCOURSE
- SAMPLED WATERBODY
- WATERBODY

REFERENCE

Base data obtained from NTDB. Water quality data obtained from field.
 Projection: UTM Zone 15 Datum: NAD 83

1,000 0 1,000
 SCALE 1:50,000 METRES

PROJECT

COMPLEX MINERALS
 MELIADINE WEST

TITLE

**2008 SEDIMENT QUALITY SAMPLING
 LOCATIONS IN THE DISCOVERY AREA**



PROJECT NO. 07-1373-0055			SCALE AS SHOWN	REV. 0
DESIGN	KS	16 Sep. 2008		
GIS	JH	24 Nov. 2008		
CHECK	KS	24 Nov. 2008		
REVIEW	BW	24 Nov. 2008		

FIGURE: 1-5

2 METHODS

2.1 WATER QUALITY

The purpose of the baseline water data will be to evaluate potential changes to water quality within the defined project area as a result of the proposed mine development.

2.1.1 Streams

Streams and rivers were sampled during the spring season (i.e., June, under freshet conditions) and the summer season (i.e., July, under base flow conditions) to assess temporal differences in water quality. The stream sampling stations were located at suitable locations between 50 and 150 metres (m) downstream of the outlets of Meliadine Lake; of Lakes B7, A8, B5, and DI4; of Atulik Lake; Chickenhead Lake; and of other outlets in the Discovery Area (Table 2-1). The same stations used in previous baseline studies were used for the 2008 field program. Water quality stations were located using a Global Positioning System (GPS) (hand-held Garmin GPSmap 60).

Table 2-1 Stream Water Sampling Stations in the Meliadine West Gold Project Area, 2008

Sample Location	Sample Name	Dates Sampled	GPS Location ^a
Outlet of Meliadine Lake to Meliadine River	ML-MR	21-Jun-2008	0530714, 6989630
		19-Jul-2008	0530712, 6989681
Outlet of Lake B7 to Lake B6	B7-6	21-Jun-2008	0537876, 6989363
		13-Jul-2008	0537905, 6989335
Outlet of Lake A8 to Lake A7	A8-7	22-Jun-2008	0540750, 6986701
		14-Jul-2008	0540750, 6986687
Outlet of Lake B5 to Lake B4	B5-4	22-Jun-2008	0538395, 6987778
		14-Jul-2008	0538395, 6987778
Outlet of DI4 Lake into Meliadine Lake (Discovery Area)	DI-4	24-Jun-2008	0549441, 6983602
Outlet of Atulik Lake (Discovery Area)	DI-6	23-Jun-2008	0565841, 6972744
Downstream of basins below Atulik Lake on Atulik River (Discovery Area)	DI-7	23-Jun-2008	0574494, 6969739
Outflow of Watershed B of the Discovery Area into Meliadine Lake (Discovery Area)	NEW-1	23-Jun-2008	0546982, 6987421
		20-Jul-2008	0546505, 6987540
Downstream of NEW-3; outlet into DI5 which flows into Meliadine Lake (Discovery Area)	NEW-2	23-Jun-2008	0550631, 6981869
Outlet of Chickenhead Lake (i.e., Lake DI1) (Discovery Area)	NEW-3	24-Jun-2008	0553779, 6980992

Notes: GPS = global positioning system; Jun = June; Jul = July.

a GPS location of each sampling station is reported in NAD83 Zone 15.

Samples were collected from approximately 0.1 m below the water surface (surface grab). Certified clean sample containers were provided by the analytical laboratory, ALS Laboratory Group³, and were labelled with the sample location and date. When required, the samples were filtered and the appropriate preservative was added in the field. All samples were kept cool until delivery to the laboratory.

Field measurements of dissolved oxygen (DO) concentrations, temperature, pH, and conductivity were taken at each sampling site using an YSI 556 Hand-held Multi-probe Meter or WTW 3400i Meter calibrated daily following the manufacturer's instructions.

Samples were analyzed for conventional water quality parameters and major ions, (i.e., pH, specific conductivity, total dissolved solids [TDS], total suspended solids [TSS], hardness, alkalinity, bicarbonate, carbonate, chloride, hydroxide, sulphate, calcium, magnesium, sodium, potassium, and total organic matter), nutrients (total carbon [TC], total inorganic carbon [TIC], total organic carbon [TOC], dissolved organic carbon [DOC], total Kjeldahl nitrogen [TKN], nitrate, nitrite, ammonia, total phosphorus, orthophosphorus, and total dissolved phosphorus), chlorophyll *a*, and total and dissolved metals.

2.1.2 Lakes

Lakes were sampled during the summer season (i.e., July) because it is the most productive season. The lake sampling locations are detailed in Table 2-2. The original lake sampling stations were established near the deepest part of the lake basin in previous baseline studies; these same stations were used for the 2008 field program. Water sampling stations were located using a GPS (hand-held Garmin GPSmap 60).

Lake water samples were collected using a pre-cleaned 4-L Kemmerer bottle submerged to a depth of 1 m. Sample bottles were provided by the analytical laboratory, ALS Laboratory Group, and were labelled with the sample location and date. When required, the samples were filtered and the appropriate preservative was added in the field. All samples were kept cool until delivery to the laboratory.

³ Sample containers for the June sampling event were provided by both the Edmonton and Vancouver laboratories of ALS. Sample containers for the July sampling event were provided by the Edmonton laboratory.

Table 2-2 Lake Water Sampling Stations in the Meliadine West Gold Project Area, 2008

Sample Location	Sample Name	Date Sampled	GPS Location ^a
Lake B6	B6	12-Jul-2008	0537758, 6989218
Lake B7	B7	12-Jul-2008	0537811, 6989603
Lake A8	A8	14-Jul-2008	0540181, 6987142
Lake B5	B5	14-Jul-2008	0538281, 6988153
Lake A54 (i.e., Peanut Lake)	A54	15-Jul-2008	0540180, 6988827
East basin of Meliadine Lake in the "toe of the boot"	BOOT-1	15-Jul-2008	0541166, 6989336
East basin of Meliadine Lake at the outlet of the "toe of the boot"	BOOT-2	16-Jul-2008	0542070, 6989338
East basin of Meliadine Lake	ML-E	17-Jul-2008	0543184, 6987869
Control Lake	Control	18-Jul-2008	0534632, 6986546
Southeast basin of Meliadine Lake	ML-SE	18-Jul-2008	0535824, 6986364
West basin of Meliadine Lake	ML-W	19-Jul-2008	0525618, 7000852
Lake DI1 (i.e., Chickenhead Lake)	DI1	20-Jul-2008	0554523, 6980718
Lake DI4	DI4	20-Jul-2008	0548241, 6983893

Notes: GPS = global positioning system; Jul = July.

a GPS location of each sampling station is reported in NAD83 Zone 15.

Field measurements of DO concentrations, temperature, pH, and conductivity were taken at each sampling site at a depth of 1 m using a calibrated YSI 556 Hand-held Multi-probe Meter or WTW 3400i Meter calibrated daily following the manufacturer's instructions. Vertical profiles (surface to near-bottom; measurements taken every 0.5 m) of water temperature and DO concentrations were measured in two select lakes (Lakes B5 and A8) to confirm the lack of stratification observed in previous baseline studies (e.g., RL&L 1998). Water transparency (Secchi depth) was considered to be the depth at which the disk disappeared from sight and was measured with a standard Secchi disk (30 centimetre [cm] diameter).

All samples were analyzed for the same conventional water quality parameters and major ions, nutrients, and total and dissolved metals as for streams. Select samples from sampling locations nearest the mine site (i.e., A8, A54, B7, B5, BOOT-1, and BOOT-2) were also analyzed for general organic compounds, including phenols, oil and grease, and total petroleum hydrocarbons (TPH).

2.1.3 Quality Assurance/Quality Control

The quality assurance/quality control (QA/QC) program for verifying field procedures in the water sampling included the collection of field duplicates, trip

blanks, and field blanks (Table 2-3). Specifically, two water samples per sample type (stream or lake) per sampling period were collected from the same site and submitted to the analytical laboratory as blind field duplicates. To assess the variability between field duplicates, the relative percent difference (RPD) was calculated⁴. Trip blanks were samples prepared by the analytical laboratory using ultra-pure water and carried in the field (unopened) during the field program. Field blanks were samples prepared while in the field using ultra-pure water provided by the analytical laboratory. The field blanks were treated in the same way as the field-collected samples, including filtering and preserving in the field.

Table 2-3 Summary of the Quality Assurance/Quality Control Water Samples Collected in the Meliadine West Gold Project Area, 2008

Sample Type	Sampling Event	QA/QC Sample Type	Number of Samples	Dates of Collection
Stream	Spring	Replicate	1	22-Jun-2008
		Trip Blank	2	21-Jun-2008
		Field Blank	2	21-Jun-2008
	Summer	Replicate	1	13-Jul-2008
		Trip Blank	1	20-Jul-2008
		Field Blank	1	13-Jul-2008
Lake	Summer	Replicate	1	12-Jul-2008
		Trip Blank	2	15-Jul-2008 17-Jul-2008
		Field Blank	2	12-Jul-2008 15-Jul-2008

Notes: QA/QC = quality assurance/quality control; Jun = June; Jul = July.

Additional QA/QC protocols included the use of nitrile gloves during sample collection to prevent cross-contamination of the samples. As well, sampling equipment (e.g., Kemmerer sampler), filtration equipment, and water quality meters were rinsed thoroughly with ultra-pure water and site water between sites.

Laboratory QA/QC protocols included the analysis of one or more control blanks, matrix spikes, and laboratory replicates for every 10 to 15 samples. The analytical methods used are listed in the analytical chemistry reports (Appendix IV).

⁴ Relative percent difference is the absolute difference between the duplicates values divided by the average of two duplicates.

Reported detection limits differed between analytical laboratories (i.e., ALS Vancouver versus ALS Edmonton) and between sampling events (June versus July); however, this is not expected to affect the characterization of water quality because most detection limits were sufficiently low for screening against appropriate guidelines

2.1.4 Data Screening

Concentrations of the various substances in stream and lake samples were compared against Canadian water quality guideline (CWQGs) for the protection of aquatic life – freshwater (Canadian Council of Ministers of the Environment [CCME] 2007) and guidelines for Canadian drinking water quality (GCDWQ) (Health Canada 2008).

2.2 SEDIMENT QUALITY

Future uses of the baseline sediment data will be two-fold: 1) to assess exposure of benthic organisms; and 2) to detect changes in metal concentrations due to mine activities. The 1998 sampling program analyzed sediment from the top 5 to 10 cm profile, which is appropriate to assess ecological effects. However, sediment deposition rates are known to be low in Arctic regions (e.g., Peramaki and Stone 2007) and sampling of a shallow profile provides enhanced sensitivity for monitoring potential temporal trends in sediment chemistry. Therefore, both shallow (0 to 2 cm) and deeper (0 to 10 cm) profiles were analyzed in 2008 to provide comparability with the older data and to provide data on more recently deposited sediments for comparisons with future monitoring programs to assess potential mine-related changes to surficial sediment chemistry.

Lake sediments were sampled during the summer season (i.e., July; the most productive season). The lake sediment sampling locations are detailed in Table 2-4. Most of the sampling stations in the current study were located in the deepest zones of the lakes as was the case for the previous collection (i.e., 1998 field program; RL&L 1999). Stations were located using a GPS (hand-held Garmin GPSmap 60).

Sediment samples were collected using a stainless steel 18 by 18 cm Ekman grab, consistent with the method used in the previous sediment quality baseline study (RL&L 1999). Each grab sample was divided into two halves: the top 2 cm was sampled from one half and the top 10 cm was sampled from the other half. As necessary, multiple grabs were composited to provide sufficient sample volume for the required analyses. Two field replicates (i.e., separately collected and composited) were collected within a 1 to 2 m radius around the original sampling

location at most sites⁵. Site locations were confirmed between replicates using GPS co-ordinates.

Table 2-4 Lake Sediment Sampling Stations in the Meliadine West Gold Project Area, 2008

Sample Location	GPS Location ^a	Sample Name	Date Sampled
Lake B7	0537760, 6989535	B7	13-Jul-2008
Lake B6	0537775, 6989211	B6	13-Jul-2008
Lake B5	0538288, 6988122	B5	14-Jul-2008
Lake A8	0540127, 6987353	A8	15-Jul-2008
East basin of Meliadine Lake in the "toe of the boot"	0541286, 6989232	BOOT-1	16-Jul-2008
East basin of Meliadine Lake at the outlet of the "toe of the boot"	0542047, 6989350	BOOT-2	16-Jul-2008
Near outlet of Basin A in Meliadine Lake	0544654, 6986157	ML-A	17-Jul-2008
East basin of Meliadine Lake	0543271, 6988364	ML-E	17-Jul-2008
Control Lake	0534701, 6986534	Control	18-Jul-2008
Southeast basin of Meliadine Lake	0535942, 6986209	ML-SE	18-Jul-2008
Near outlet of Basin B in Meliadine Lake	0536432, 6985797	ML-B	19-Jul-2008
South basin of Meliadine Lake	0532278, 6989421	ML-S	19-Jul-2008
West basin of Meliadine Lake	0525608, 7000884	ML-W	19-Jul-2008
Lake DI-1 (i.e., Chickenhead Lake)	0554523, 6980718	DI-1	20-Jul-2008
Lake DI-4	0547983, 6984067	DI-4	20-Jul-2008

Notes: GPS = global positioning system; Jul = July.

a GPS location of each sampling station is reported in NAD83 Zone 15.

All sediment samples were analyzed for nutrients, trace metals, TOC, particle size, moisture content, and cyanide. In addition, concentrations of individual polycyclic aromatic hydrocarbons (PAHs) were measured at four sites near the potential mine footprint (Lake B5, Lake A8, BOOT-1, and BOOT-2) and one future reference site (Control Lake).

2.2.1 Quality Assurance/Quality Control

The QA/QC program for verifying field procedures in the sediment sampling included the collection of field duplicates. Additional QA/QC protocols included the use of nitrile gloves during sample collection to prevent cross-contamination of the samples. As well, sampling equipment (e.g., Ekman dredge, stainless steel

⁵ It was not possible to collect sufficient sediment volume for duplicates at Lake B7.

mixing bowl and spoons) were cleaned with detergent and rinsed thoroughly with ultra-pure water and site water between replicates.

Laboratory QA/QC protocols included the analysis of one or more method blanks, internal or certified reference materials, matrix spikes, and laboratory replicates. The analytical methods are listed in the analytical chemistry reports (Appendix IV).

2.2.2 Data Screening

Concentrations of the various substances in sediment samples were compared against Canadian sediment quality guidelines for the protection of aquatic life (CCME 2002) including interim freshwater sediment quality guidelines (ISQG) and probable effect levels (PEL).

Potential differences between the shallow (0 to 2 cm) and deeper (0 to 10 cm) profiles were assessed graphically. Concentrations of metals detected in all sediment samples (i.e., arsenic, chromium, copper, and zinc) were log-transformed and plotted to determine if the relationship between the two profiles varied from a 1:1 relationship.

3 RESULTS AND DISCUSSION

3.1 WATER QUALITY IN STREAMS

Water samples were collected at 10 sites in June and five sites in July (Figures 1-2 and 1-3). Screening tables detailing the results of field-measured parameters (conductivity, pH, DO, and water temperature) and laboratory-measured parameters (nutrients, major ions, metals, and chlorophyll *a*) and comparisons to guidelines (as applicable) are provided in Appendix I. Laboratory analytical reports are provided in Appendix IV.

3.1.1 Conventional Water Quality Parameters

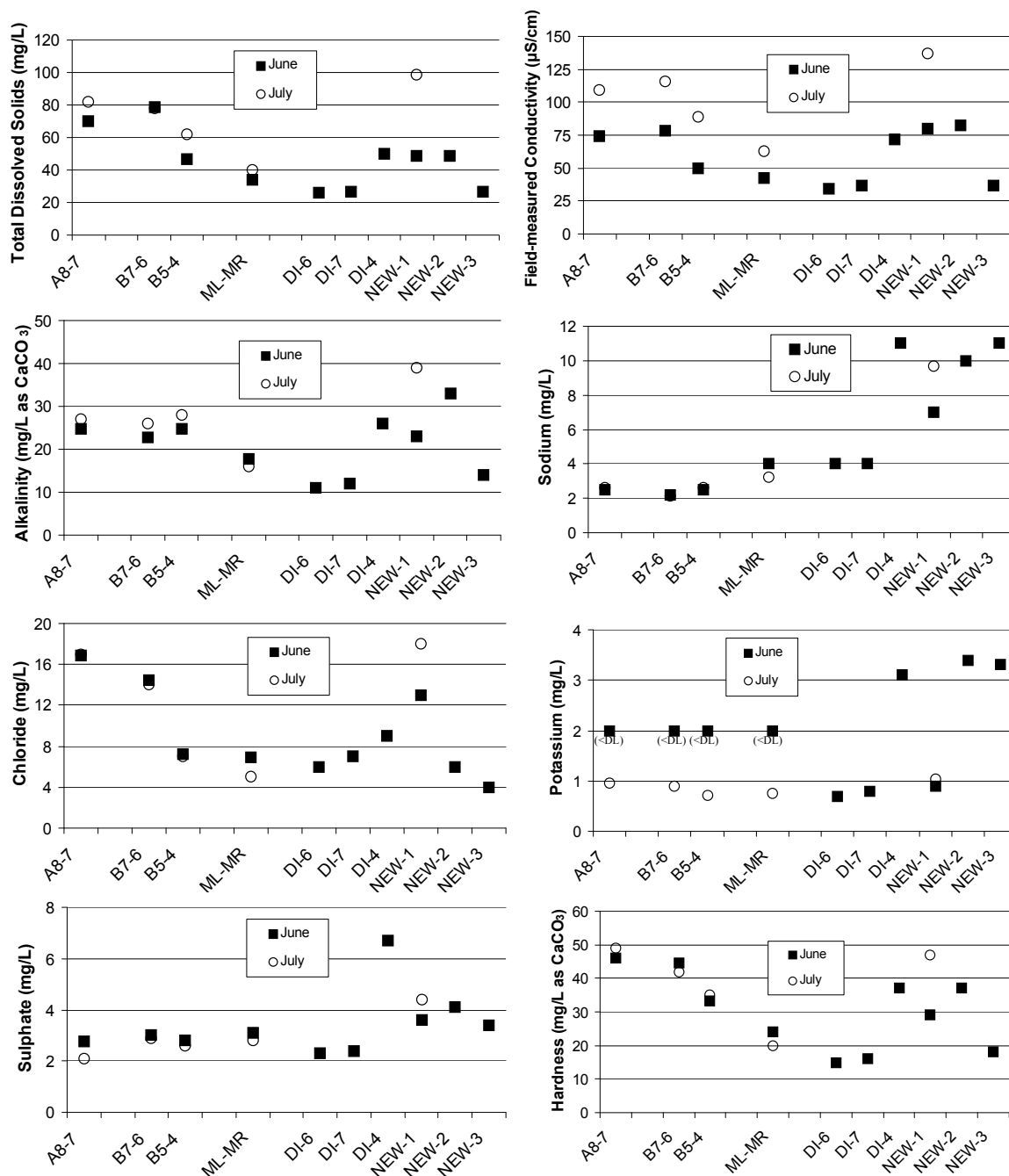
Dissolved oxygen concentrations were above the 9.5 milligrams per litre (mg/L) CWQG for protection of early life stages of cold water fish. Values ranged from 9.59 mg/L at 18.2 degrees Celsius (°C) to 16.54 mg/L at 5.6°C. Dissolved oxygen concentrations in all streams were also at or above saturation levels for given ambient water temperatures, further indicating that the streams were well oxygenated during each sampling event.

During both sampling periods, TSS was below the detection limit of 3 mg/L at all sites, except stream B5-4, which had a TSS concentration of 3 mg/L.

Total dissolved solids (TDS) in the streams of the Project area ranged from 26 to 99 mg/L at all sites (Figure 3-1). There are no TDS guidelines for the protection of aquatic life; the GCDWG is 500 mg/L for drinking water.

Conductivity followed a similar spatial pattern as TDS (Figure 3-1). Field-measured conductivities ranged from 34 to 137 microSiemens per centimetre (µS/cm) and were generally lower in June than in July (Figure 3-1). Conductivities measured in the field were similar to those measured in the laboratory, which ranged from 50.1 to 151 µS/cm. There are no CWQG or GCDWQ for conductivity.

Total alkalinity values in the streams ranged from 11 to 39 mg/L. During both June and July sampling periods, the highest values were generally found in sites of Basin A and B, and in streams DI-4, NEW-2, and NEW-3 in the Discovery area. The lowest values were recorded in the west outlet from Meliadine Lake (ML-MR) and upstream of the Discovery camp (Figure 3-1). Although there are no water quality guidelines for alkalinity, values ranging from 30 to 500 mg/L are generally acceptable for drinking water (McNeely et al. 1979).



Note:

Basin A: A8-7.

Basin B: B7-6 and B5-4.

Discovery Area: DI-6, DI-7, DI-4, NEW-1, NEW-2, and NEW-3.

Meliadine Lake: ML-MR.

Figure 3-1 Concentrations of Select Water Quality Parameters in Streams of the Meliadine West Gold Project Area, 2008

Stream pH values measured in the field were higher under freshet conditions (June; range = 7.6 to 8.4) than during base flow conditions (July; range = 6.5 to 7.0). Values measured in the laboratory were lower in the June samples (range = 7.1 to 7.8) and higher in the July samples (range = 7.5 to 7.6). The differences between field and laboratory pH measurements are most likely due to changes in the sample during storage or handling (e.g., loss of carbon dioxide). In addition, changes in sample temperature affect the activity of hydrogen ions, thereby affecting pH. Field pH measurements were conducted at temperatures ranging from 5.5 to 18°C whereas laboratory measurements were likely at room temperature (~20 to 25°C). All pH values were within the CWQG and GCDWG of 6.5 to 9.0 and 6.5 to 8.5, respectively.

The major ions consisted of sodium (Na^+), potassium (K^+), chloride (Cl^-), sulphate (SO_4^{2-}), calcium (Ca^{2+}), and magnesium (Mg^{2+}). Sodium concentrations in the stream samples ranged from 2.14 to 4 mg/L, with the exceptions of the NEW-1, NEW-2, DI-4, and NEW-3 sites in the Discovery Area, which had sodium concentrations that ranged from 7 to 11 mg/L. All sodium concentrations were lower than the GCDWG of 200 mg/L.

Chloride concentrations ranged from 4 mg/L in the June sample of NEW-3 to 18 mg/L in the July sample of NEW-1. Chloride concentrations did not appear to vary with season (Figure 3-1). All chloride concentrations were much lower than the GCDWG of 250 mg/L.

Potassium concentrations ranged from 0.7 to 3.4 mg/L. In four stream samples analyzed in June (A8-7, B7-6, B5-4, and ML-MR), the detection limits were higher (2.0 mg/L) than in other samples (0.5 mg/L)⁶. Therefore, it is uncertain whether potassium concentrations were similar between the sampling periods for these streams. In general, potassium concentrations were between 0.7 and less than 2.0 mg/L except for DI-4, NEW-2, and NEW-3, which had concentrations ranging from 3.1 to 3.4 mg/L (Figure 3-1).

Sulphate ranged from 2.1 to 4.4 mg/L with the exception of stream DI-4 in June, which had the highest measured sulphate concentration of 6.7 mg/L. All measured sulphate concentrations were lower than the GCDWG of 500 mg/L.

Calcium and magnesium are the two major ions that contribute the most to water hardness. Total hardness concentrations ranged from 15 to 49 mg/L as calcium carbonate (CaCO_3), with the highest values generally found in Basin A and B

⁶ These samples were analyzed at a different laboratory (ALS Vancouver) than the other samples (ALS Edmonton).

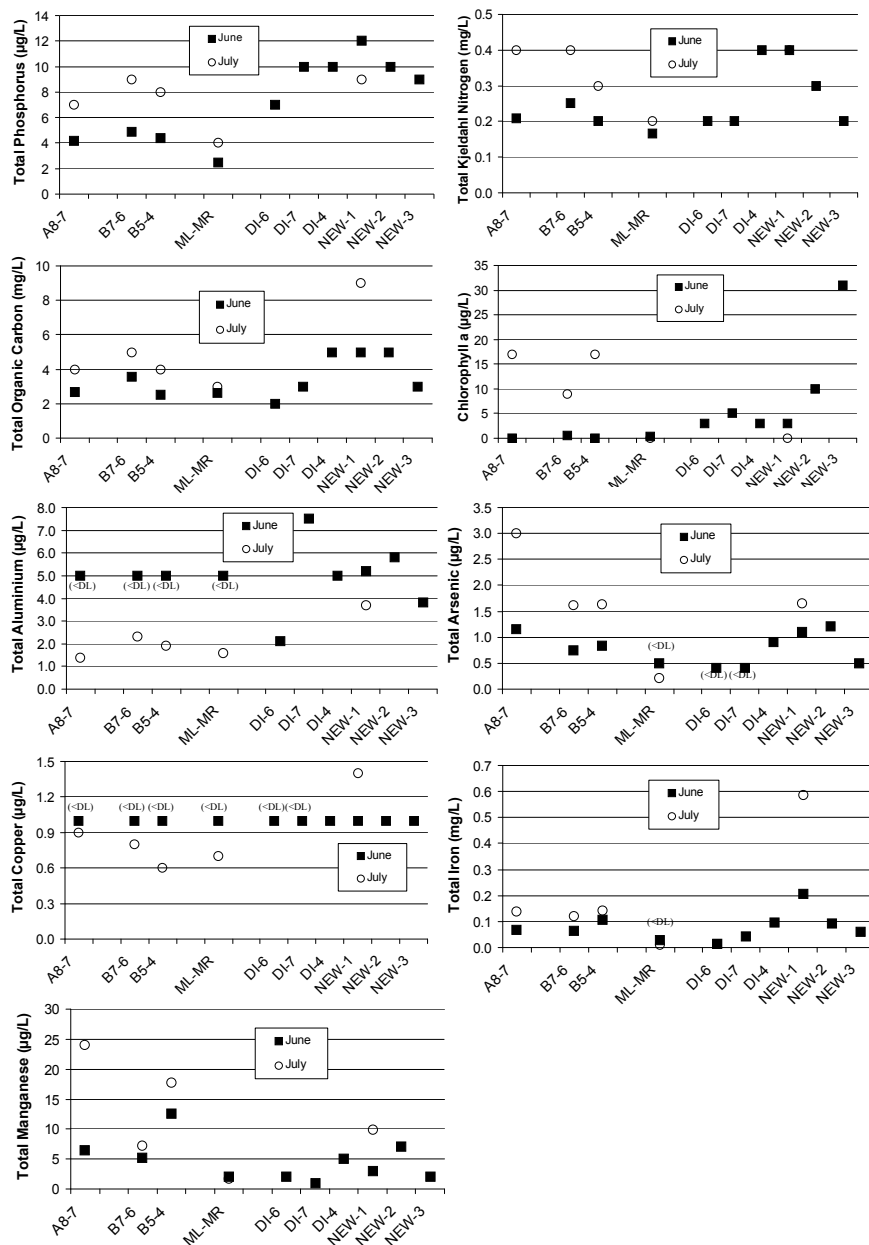
sampling locations and streams DI-4, NEW-1, and NEW-2 in the Discovery area. Lower values were measured in the outlet of Meliadine Lake to Meliadine River (ML-MR), and in streams NEW-3, DI-6, and DI-7 in the Discovery area (Figure 3-1). The pattern of hardness across the sites was similar to that of alkalinity. Based on these data, the stream waters were considered to be soft as soft waters range from 31 to 60 mg/L as CaCO_3 in total hardness (McNeely et al. 1979). No CWQG or GCDWQ exist for calcium, magnesium, or water hardness.

3.1.2 Nutrients

Total phosphorus (P) concentrations in the sampled streams ranged from 0.0025 to 0.012 mg P/L. Concentrations were generally higher in the summer (July) than in the spring (June) (Figure 3-2). In addition, concentrations were higher in the Discovery area than in Basins A and B or the outlet of Meliadine Lake (ML-MR) (Figure 3-2). Total dissolved phosphorus (the phosphorus form available for primary production) concentrations were less than half those of the total phosphorus concentrations and orthophosphate was not detected in any sample (detection limit of 0.0010 mg/L). No CWQG or GCDWQ exist for phosphorus, although 0.10 mg/L is considered a maximum desirable concentration for streams (McNeely et al. 1979). In Northwest Territories and Nunavut, a total phosphorus guideline of 0.03 mg/L is used for both lotic and lentic waters (Statistics Canada 2008), which was not exceeded at any station.

In aquatic systems, nitrogen occurs in organic and inorganic (dissolved nitrite, nitrate, ammonium, and ammonia compounds) forms. Nitrite was detected at or above the CCME WQG of 0.06 mg/L in four streams of the Discovery area sampled in June: DI-6, DI-7, DI-4, and NEW-3. Nitrite concentrations in these streams ranged from 0.06 to 0.09 mg/L. All nitrite concentrations were less than the GCDWQ of 3.2 mg/L. Nitrate concentrations were reported as below the detection limit of 0.1 mg/L or 0.0050 mg/L⁷ except in stream A8-7, which had a nitrate concentration of 0.0168 mg/L. Ammonia concentrations (reported as total ammonia-N) were also less than detection limits (0.020 and 0.05 mg/L), which were lower than associated CWQGs.

⁷ There are two different detection limits because the June stream samples were split between two different laboratories (ALS Vancouver and ALS Edmonton).



Note:

Basin A: A8-7.

Basin B: B7-6 and B5-4.

Meliadine Lake: ML-MR.

Discovery Area: DI-6, DI-7, DI-4, NEW-1, NEW-2, and NEW-3.

Figure 3-2 Concentrations of Nutrients and Total Metals in Streams of the Meliadine West Gold Project Area, 2008

Total Kjeldahl nitrogen (TKN) is the sum of organic and ammonia nitrogen fractions. The TKN concentrations in the streams of the Meliadine Lake area ranged from 0.167 to 0.4 mg N/L. In Basin A and B sampling locations, TKN concentrations were generally higher in July than in June (Figure 3-2). Concentrations of TKN in streams that are not influenced by excessive organic inputs typically range from 0.1 to 0.5 mg/L (McNeely et al. 1979). There are no CWQG or GCDWQ for TKN. These data suggest that total nitrogen concentrations consisted mainly of organic forms.

In streams, TOC can vary from 1 to 30 mg/L with higher levels generally being the result of anthropogenic inputs (McNeely et al. 1979). In the streams of the Project area, TOC concentrations ranged from 2 to 9 mg/L. Higher concentrations were measured in the summer (July) (Figure 3-2) and most of the TOC was in the dissolved form. There are no CWQG or GCDWQ for TOC.

Chlorophyll *a* concentrations ranged from 0.012 to 31 mg/L. The highest concentration was observed in stream NEW-3 and concentrations were generally higher in the summer (Figure 3-2). There are no CWQG or GCDWQ for chlorophyll *a*.

3.1.3 Metals

For all total metals except cadmium, detection limits were at or below the most conservative guideline (CWQG or GCDWQ). With the exception of iron, the concentrations of total metals in the streams were either below the detection limits or below the CWQG and GCDWQ. Table 3-1 lists detection frequency and minimum and maximum concentrations of total metals detected in the stream samples.

Aluminum was detected in most June stream samples and in all July samples at total metal concentrations of 0.0019 to 0.0077 mg/L, which were below the pH-dependent CWQG of 0.1 mg/L and the GCDWQ of 0.1 mg/L. Concentrations did not vary with season or waterbody (Figure 3-2).

Arsenic was detected in most June stream samples and in all July samples at total metal concentrations of 0.00022 to 0.003 mg/L. These concentrations are below the CWQG of 0.005 mg/L and the GCDWQ of 0.01 mg/L. Concentrations did not vary with season or waterbody (Figure 3-2).

Total cadmium concentrations were below detection limits in all stream samples. However, detection limits (0.00005 mg/L) in the July samples were higher than the most conservative guideline (CWQG = 0.000017 mg/L).

Table 3-1 Range of Total Metals Concentrations Measured in the Stream Samples

Metal	Detection Frequency	# CWQG Exceedences	# GCDWQ Exceedences	Minimum Concentration (mg/L)	Maximum Concentration (mg/L)
Aluminum (Al)	11/15 (73%)	0	0	0.0019	0.0077
Antimony (Sb)	0/15 (0%)	N/A	0	<0.00003	<0.00050
Arsenic (As)	12/15 (80%)	0	0	0.00022	0.003
Barium (Ba)	11/15 (73%)	N/A	0	0.006	<0.020
Beryllium (Be)	0/15 (0%)	N/A	N/A	<0.0002	<0.001
Boron (B)	5/15 (33%)	N/A	0	0.002	<0.10
Cadmium (Cd)	0/15 (0%)	0 ^a	0	<0.000017	<0.00005
Chromium (Cr)	2/15 (13%)	0	0	<0.00006	0.00026
Cobalt (Co)	1/15 (7%)	N/A	N/A	<0.0001	<0.002
Copper (Cu)	9/15 (60%)	0	0	0.0006	0.0014
Iron (Fe)	14/15 (93%)	1	1	0.01	0.587
Lead (Pb)	1/15 (7%)	0	0	<0.00005	<0.00050
Manganese (Mn)	15/15 (100%)	N/A	0	0.001	0.0241
Mercury (Hg)	0/15 (0%)	0	0	<0.000020	<0.00002
Molybdenum (Mo)	4/15 (27%)	0	N/A	<0.00006	<0.005
Nickel (Ni)	5/15 (33%)	0	N/A	0.0003	<0.002
Selenium (Se)	3/15 (20%)	0	0	<0.0001	<0.0004
Silver (Ag)	0/15 (0%)	0	N/A	<0.000020	<0.0004
Thallium (Tl)	0/15 (0%)	0	N/A	<0.00003	<0.00020
Uranium (U)	1/15 (7%)	N/A	0	<0.00005	<0.00020
Vanadium (V)	5/15 (33%)	N/A	N/A	0.00011	<0.001
Zinc (Zn)	1/15 (7%)	0	0	<0.0008	<0.0050

Notes: CWQG = Canadian Water Quality Guidelines for the Protection of Aquatic Life – Freshwater (CCME 2007); GCDWQ = Guidelines for Canadian Drinking Water Quality (Health Canada 2008); N/A = not applicable; mg/L = milligrams per litre; % = percent; < = less than.

a All five July samples were reported as less than 0.00005 mg/L, which is higher than the CWQG guideline of 0.000017 mg/L.

Total copper in four out of ten June stream samples was at the detection limit of 0.001 mg/L. In July, total copper concentrations ranged from 0.0006 to 0.0014 mg/L in the July samples. Concentrations did not vary with season or waterbody (Figure 3-2).

Iron was detected in most June stream samples and in all July samples. Total iron concentrations ranged from 0.010 to 0.207 mg/L, except the July sample of NEW-1. This sample had a total iron concentration of 0.587 mg/L, which was above the CWQG and GCWQG guidelines of 0.3 mg/L. Concentrations did not vary with season or waterbody (Figure 3-2).

Manganese was detected in all stream samples at total metal concentrations of 0.0010 to 0.0241 mg/L, which were below the GCDWQ of 0.05 mg/L. The highest concentrations were measured in Streams A8-7 and B5-4 in July (Figure 3-2).

In the June stream samples, total nickel concentrations were at or below the detection limits of 0.001 or 0.002 mg/L. In July, total nickel concentrations ranged from 0.0003 to 0.00183 mg/L.

Total zinc was not detected in any June samples at detection limits of 0.004 or 0.005 mg/L. The detection limits for the July samples were lower at 0.0008 mg/L. Zinc was detected in one July sample (A8-7) at a total metal concentration of 0.0028 mg/L.

For a number of samples, the dissolved concentration for a given metal was greater than the corresponding total concentration. This discrepancy may be due to one or more of the following factors: laboratory method variability, field sampling method variability, bias introduced during handling, storage, transportation and/or analysis of the sample, field sample filtration, or field sample heterogeneity. Results obtained from screening the chemistry data against CWQGs and GCDWQ are not affected by this discrepancy because CWQGs and GCDWQs are based on total metal concentrations.

3.1.4 Cyanide

In all stream samples, total cyanide was below detection limits (0.002 or 0.005 mg/L). These values were at or less than the CWQG of 0.005 mg/L for cyanide and less than the GCDWQ of 0.2 mg/L for total cyanide.

3.1.5 Summary

Streams of the Project area are clear, well-oxygenated freshwater streams characterized by low ionic strength, soft water hardness, low alkalinity, and neutral to alkaline pH. Measured nutrient concentrations are typical of oligotrophic waterbodies in subarctic regions. In general, baseline water quality parameters were less than CWQG and GCDWQ with the exception of nitrite and iron. Nitrite concentrations were above the CWQG of 0.06 mg/L in four streams under freshet conditions. Total iron concentration was higher than the CWQG and GCDWQ of 0.3 mg/L in one stream (NEW-1) sampled under base flow conditions.

The results of the 2008 baseline study were similar to those reported in previous baseline studies (i.e., RL&L 1998, 1999, 2000, and 2001) with the exceptions of a few CWQG exceedences for some metals (i.e., lead and manganese in 1997 and chromium in 1998).

3.2 WATER QUALITY IN LAKES

Screening tables detailing the results of field-measured parameters (conductivity, pH, DO, and water temperature) and laboratory-measured parameters (nutrients, major ions, metals, and chlorophyll *a*) and comparisons to guidelines (as appropriate) are provided in Appendix II. Laboratory analytical reports are provided in Appendix IV.

3.2.1 Vertical Profiles

Profiles (surface to near-bottom) of DO concentrations and temperature were measured at the sampling locations in Lakes A8 and B5 in the open water period of July to confirm lack of stratification as reported by RL&L (1998, 1999, 2000, 2001). The DO profiles indicated that there was no stratification in either lake. In Lake A8, DO concentrations ranged from 12.1 mg/L at 13.8°C at the water surface to 9.2 mg/L at 13.9°C at 2.5 m. In Lake B5, DO concentrations ranged from 11.8 mg/L at 14.1°C at 0.5 m below water surface to 11.4 mg/L at 14.2°C at lake bottom (3 m). Dissolved oxygen concentrations were above the minimum level required for the protection of early-life stages of cold water fish (CWQG of 9.5 mg/L) in all measurements except at 2.5 m in Lake A8.

3.2.2 Conventional Water Quality Parameters

Dissolved oxygen concentrations were above the 9.5 mg/L CWQG for protection of early life stages of cold water fish in all samples collected at 1 m below lake surface. Values ranged from 11.5 mg/L at 13.8°C to 15.1 mg/L at 11°C. Dissolved oxygen concentrations in all lakes were also at or above saturation levels for given ambient water temperatures, further indicating that the lakes were well oxygenated during the July sampling event.

Lakes in the Project area were clear, with TSS at or below the detection limit of 3 mg/L in all lake samples except those from Lakes A54 and A8, which had TSS concentrations of 5 and 17 mg/L, respectively. The lake bottom at most sampling locations was visible from the water surface, with a few exceptions: Lake B5 had a Secchi depth of 2.7 m with a lake depth of 3 m; BOOT-2 had a Secchi depth of 6.3 m with a lake depth of 10.1 m; ML-E had a Secchi depth of 3 m with a lake depth of 6.1 m; ML-SE had a Secchi depth of 1.5 m with a lake

depth of 3 m; and Control Lake had a Secchi depth of 1.2 m with a lake depth of 2.9 m.

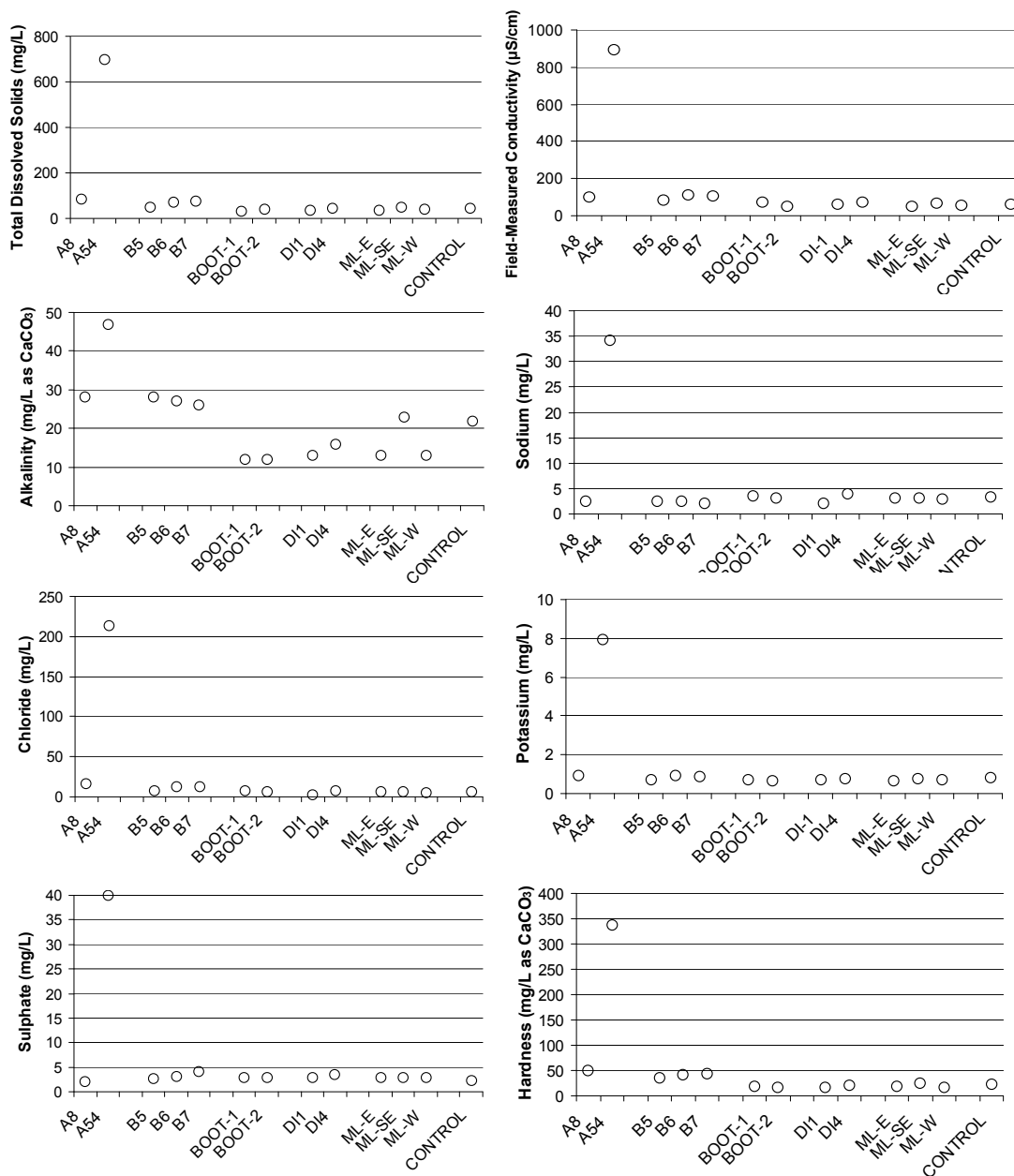
Total dissolved solids (TDS) concentrations were similar to those measured in streams and ranged from 29 mg/L (BOOT-1 site in Meliadine Lake) to 83 mg/L (Lake A8), except for the sampling location in Lake A54 (696 mg/L) (Figure 3-3). The TDS value at this site was above the GCDWQ of 500 mg/L.

Field-measured conductivities ranged from 49 $\mu\text{S}/\text{cm}$ (BOOT-2 site in Meliadine Lake) to 112 $\mu\text{S}/\text{cm}$ (Lake B6 site), with the exception of the sampling location in Lake A54, which had a field conductivity of 895 $\mu\text{S}/\text{cm}$. These values followed the same pattern as TDS (Figure 3-3). Conductivities measured in the field were similar to those measured in the laboratory, which ranged from 51.1 to 944 $\mu\text{S}/\text{cm}$. There are no CWQG or GCDWQ for conductivity.

Total alkalinity values in the lakes were similar to those in the streams and ranged from 12 mg/L (BOOT-1 and BOOT-2 sites in Meliadine Lake) to 47 mg/L (Lake A54 site). The highest values were generally found at sampling locations in Basins A and B, and at the ML-SE site and Control Lake site (Figure 3-3). Although there are no formal water quality guidelines for alkalinity, levels ranging from 30 to 500 mg/L are generally acceptable for drinking water (McNeely et al. 1979).

Lake pH values measured in the field ranged from 6.8 (Lake DI4 site) to 7.8 (Lake A8 site). For a given site, field pH values were as much as one pH unit lower than the pH value measured in the laboratory. Laboratory pH values ranged from 7.4 (multiple lake sites) to 8.0 (Lake A54 site). The differences between field and laboratory pH measurements are most likely due to changes in the sample during storage or handling (e.g., loss of carbon dioxide). In addition, changes in sample temperature affect the activity of hydrogen ions, thereby affecting pH. Field pH measurements were conducted at temperatures ranging from 11.0 to 15.4°C whereas laboratory measurements were likely at room temperature (~20 to 25°C). All pH values were within the CWQG and GCDWG of 6.5 to 9.0 and 6.5 to 8.5, respectively.

Sodium concentrations in the lake samples ranged from 1.99 to 4 mg/L, with the exception of the sampling location in Lake A54, which had 34.2 mg/L (Figure 3-3). All sodium concentrations were lower than the GCDWG of 200 mg/L.



Notes:

Basin A: A8 and A54.

Basin B: B5, B6, and B7.

Discovery Area: DI1 and DI4.

Meliadine Lake: ML-E, ML-SE, and ML-W.

Figure 3-3 Concentrations of Select Parameters in Lakes of the Meliadine West Gold Project Area, 2008

Chloride concentrations ranged from 3 to 16 mg/L with the exception of the site in Lake A54, which had a chloride concentration of 214 mg/L. Chloride concentrations were generally higher at sampling locations in Basins A and B compared to other lake sites (Figure 3-3). All chloride concentrations were lower than the GCDWQ of 250 mg/L.

Potassium concentrations were ranged from 0.65 to 0.92 mg/L, with the exception of the site in Lake A54, which had 7.95 mg/L. Potassium concentrations did not vary among sites (Figure 3-3).

Sulphate concentrations did not vary appreciably among sites (Figure 3-3). Sulphate ranged from 2.1 to 4.1 mg/L with the exception of the sampling location in Lake A54, which had the highest measured sulphate concentration (39.9 mg/L). However, all sulphate concentrations were lower than the GCDWG of 500 mg/L.

Calcium and magnesium are the two major ions that contribute the most to water hardness. Total hardness concentrations were similar to that in the streams and ranged from 17 to 49 mg/L as CaCO_3 , with the exception of the sampling location in Lake A54, which had a water hardness of 337 mg/L. The highest values were generally found at sites in Basins A and B (Figure 3-3). With the exception of Lake A54, the lake waters are considered to be soft because soft waters range from 31 to 60 mg/L as CaCO_3 in total hardness (McNeely et al. 1979). The water at the sampling location in Lake A54 is considered to be very hard because total hardness is greater than 180 mg/L (McNeely et al. 1979). No CWQG or GCDWQ exist for water hardness.

3.2.3 Nutrients

Concentrations of total phosphorus in lake samples ranged from 0.003 to 0.013 mg P/L. Concentrations were higher at sites in Basin B lakes, Lake A54 site and Control Lake site than in the other lake sites (Figure 3-4). The total dissolved phosphorus fraction, which is the form that is available for primary production, ranged from 0.002 to 0.004 mg P/L. Orthophosphate was not detected in any lake sample (detection limit of 0.001 mg/L). No CWQG or GCDWQ exist for phosphorus, although 0.025 mg/L is considered a maximum desirable concentration in lakes (McNeely et al. 1979). In Northwest Territories and Nunavut, a total phosphorus guideline of 0.030 mg/L is used for both lotic and lentic waters (Statistics Canada 2008). No total phosphorus concentrations exceeded this guideline.

In aquatic systems, nitrogen occurs in organic and inorganic (dissolved nitrite, nitrate, ammonium, and ammonia compounds) forms. Ammonia, nitrate, and nitrite concentrations were below the reported detection limits in all lake samples except in Lake A54. In this lake sample, ammonia concentration was 1.11 mg/L. Nitrate concentration was 4.9 mg/L, which exceeded the CWQG of 2.9 mg/L. Nitrite concentration was 0.14 mg/L, which exceeded the CWQG of 0.06 mg/L. The TKN concentration ranged from less than 0.2 to 0.4 mg N/L in all lake samples except that from Lake A54, which had a TKN concentration of 2.2 mg/L (Figure 3-4).

Total carbon concentrations ranged from 5 to 11 mg/L in all lake samples except that from Lake A54, which had the highest TC concentration of 20 mg/L (Figure 3-4). The composition of TC was approximately equally TOC and TIC in all lakes. Most of the TOC was in the dissolved form (DOC).

Chlorophyll *a* concentrations in lake samples ranged from less than 1 to 17 mg/L (Figure 3-4). Concentrations were highest at sampling locations in the lakes of Basins A and B and in BOOT-1.

3.2.4 Metals

For all total metals except cadmium, detection limits were at or below the most conservative guideline (CWQG or GCDWQ). The concentrations of most metals in the lake samples were either below their detection limits and/or below their corresponding CWQG and GCDWQ. One exception was the Lake B7 site, which had a total copper concentration of 0.0027 mg/L, exceeding the hardness-dependent CWQG of 0.002 mg/L. Table 3-2 lists detection frequency and minimum and maximum concentrations of total metals detected in the lake samples.

Aluminum was detected in all samples at total metal concentrations ranging from 0.0015 to 0.0056 mg/L (Figure 3-4). These concentrations were below the pH-dependent CWQG of 0.1 mg/L and the GCDWQ of 0.1 mg/L.

Arsenic was detected in all samples at total metal concentrations ranging from 0.00017 to 0.00207 mg/L. These concentrations were below the CWQG and GCDWQ of 0.005 and 0.01 mg/L, respectively. Concentrations were highest in sampling locations of Basins A and B (Figure 3-4).

Total cadmium concentrations were below detection limits in all lake samples. However, detection limits (0.00005 mg/L) were higher than the most conservative guideline (CWQG = 0.000017 mg/L).

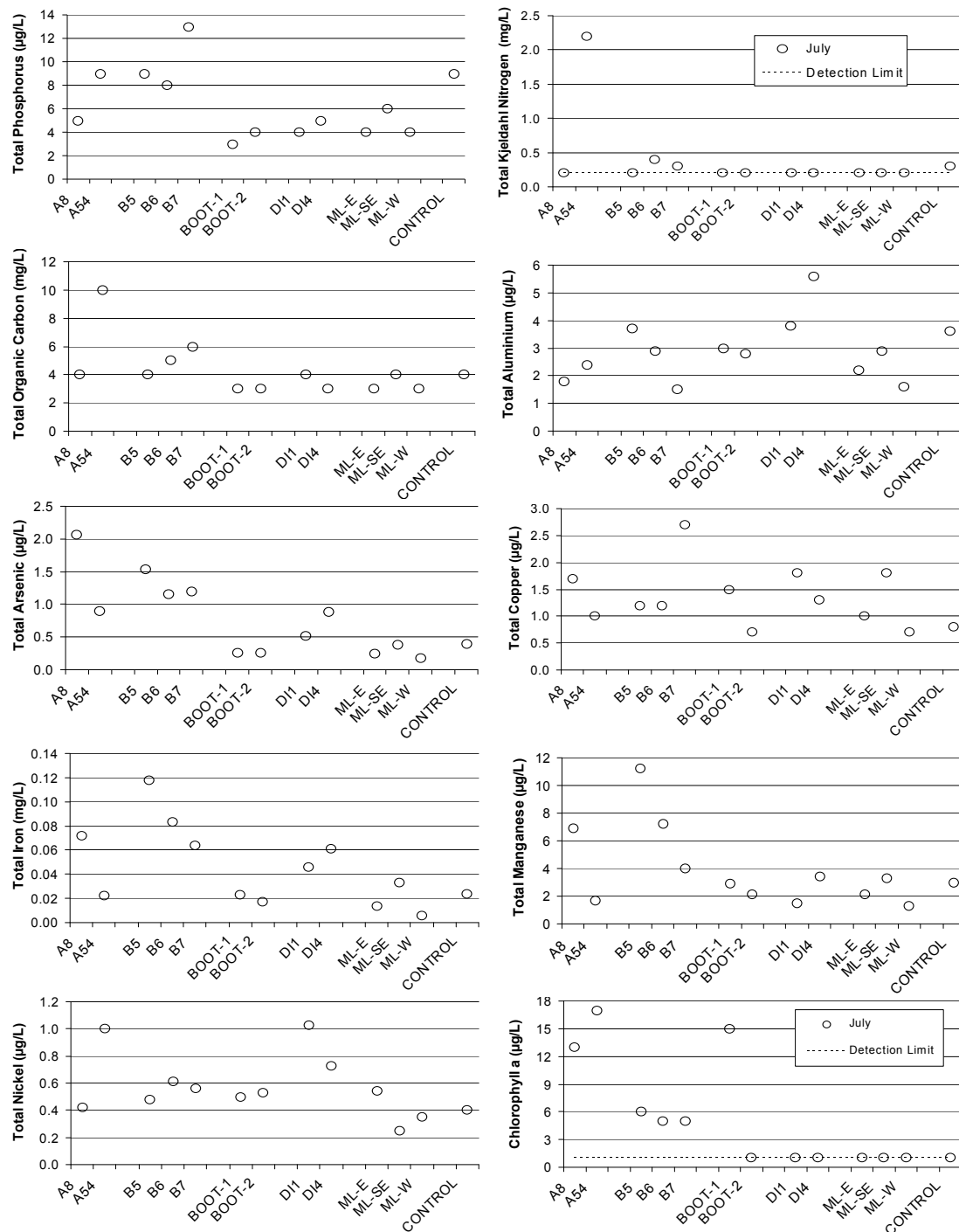


Figure 3-4 Concentrations of Nutrients and Metals in Lakes of the Meliadine West Gold Project Area, 2008

Table 3-2 Range of Total Metals Concentrations Measured in the Lake Samples

Metal	Detection Frequency	# CWQG Exceedences	# GCDWQ Exceedences	Minimum Concentration (mg/L)	Maximum Concentration (mg/L)
Aluminum (Al)	13/13 (100%)	0	0	0.0015	0.0056
Antimony (Sb)	1/13 (7%)	N/A	0	<0.00003	0.0002
Arsenic (As)	13/13 (100%)	0	0	0.00017	0.00207
Barium (Ba)	13/13 (100%)	N/A	0	0.0059	0.0618
Beryllium (Be)	0/13 (0%)	N/A	N/A	<0.0002	<0.0002
Boron (B)	13/13 (100%)	N/A	0	0.002	0.006
Cadmium (Cd)	0/13 (0%)	0 ^a	0	<0.00005	<0.00005
Chromium (Cr)	0/13 (0%)	0	0	<0.00006	<0.00006
Cobalt (Co)	0/13 (0%)	N/A	N/A	<0.0001	<0.0001
Copper (Cu)	13/13 (100%)	1	0	0.0007	0.0027
Iron (Fe)	13/13 (100%)	0	0	0.006	0.118
Lead (Pb)	5/13 (38%)	0	0	<0.00005	0.0001
Manganese (Mn)	13/13 (100%)	N/A	0	0.0013	0.0112
Mercury (Hg)	0/13 (0%)	0	0	<0.00002	<0.00002
Molybdenum (Mo)	10/13 (77%)	0	N/A	0.00006	0.00049
Nickel (Ni)	13/13 (100%)	0	N/A	0.00025	0.00103
Selenium (Se)	5/13 (38%)	0	0	<0.0001	0.0003
Silver (Ag)	0/13 (0%)	0	N/A	<0.0001	<0.0001
Strontium (Sr)	13/13 (100%)	N/A	N/A	0.0243	0.83
Thallium (Tl)	0/13 (0%)	0	N/A	<0.00003	<0.00003
Uranium (U)	1/13 (7%)	N/A	0	<0.00005	0.00026
Vanadium (V)	12/13 (92%)	N/A	N/A	<0.00005	0.00019
Zinc (Zn)	2/13 (15%)	0	0	<0.0008	0.0011

Notes: CWQG = Canadian Water Quality Guidelines for the Protection of Aquatic Life – Freshwater (CCME 2007); GCDWQ = Guidelines for Canadian Drinking Water Quality (Health Canada 2008); N/A = not applicable; mg/L = milligrams per litre; % = percent; < = less than.

a All samples were reported as less than 0.00005 mg/L, which is higher than the CWQG guideline of 0.000017 mg/L.

Total copper concentrations ranged from 0.0007 to 0.0018 mg/L with the exception of the sample from Lake B7, which had a total copper concentration of 0.0027 mg/L (Figure 3-4). This value was the only exceedence of the hardness-dependent CWQG of 0.001 mg/L (based on a hardness of 43 mg/L as CaCO₃).

Iron was detected all lake samples and total metal concentrations ranged from 0.006 to 0.118 mg/L. These concentrations were below the CWQG and GCDWQ of 0.005 and 0.01 mg/L, respectively. Total iron concentrations were generally highest at the sampling locations in Basin B and Lake A8 (Figure 3-4).

Manganese was detected in all lake samples at total metal concentrations of 0.0013 to 0.0112 mg/L, which were below the GCDWQ of 0.05 mg/L. Concentrations were highest at the sampling locations in Lakes A8, B5, and B6 (Figure 3-4).

Total mercury concentrations were below the detection limit (0.00002 mg/L) in all lake samples.

Nickel was detected in all lake samples at total metal concentrations of 0.00025 to 0.00103 mg/L, which were below the hardness-dependent CWQG of 0.025 mg/L. Concentrations were highest in samples taken from Lakes A54 and DI4 (Figure 3-4).

Zinc was detected in only two samples collected from Lake B5 (0.0009 mg/L) and Lake DI1 (0.0011 mg/L). All other reported values were below the detection limit of 0.0008 mg/L.

For a few samples, the dissolved concentration for a given metal was greater than the corresponding total concentration. This discrepancy may be due to one or more of the following factors: laboratory method variability, field sampling method variability, bias introduced during handling, storage, transportation and/or analysis of the sample, field sample filtration, or field sample heterogeneity. Results obtained from screening the chemistry data against CWQGs and GCDWQs are not affected by this discrepancy because CWQGs and GCDWQs are based on total metal concentrations.

3.2.5 Cyanide

In all lake samples, total cyanide was below detection limits (0.002 mg/L). These values were at or less than the CWQG of 0.005 mg/L for cyanide and less than the GCDWQ of 0.2 mg/L for total cyanide.

3.2.6 Phenols and Other Organics

Phenols, oil and grease, and total petroleum hydrocarbons (i.e., benzene, toluene, ethylbenzene, xylenes [BTEX]; F1, F2, F3, and F4 fractions) were measured in six lakes nearest to the proposed mine site: Lakes A8, A54, B7, B5, BOOT-1, and BOOT-2.

Phenol concentrations ranged from 0.001 to 0.004 mg/L with one exception. The phenol concentration at the sampling location in Lake A54 was at the CWQG of

0.004 mg/L. In lakes sampled for phenol analysis in previous years, phenol concentrations ranged from less than 0.001 to 0.002 mg/L.

Concentrations of oil and grease ranged from less than 0.5 to 0.9 mg/L. Detected concentrations were measured at the sampling locations in Lake A8 (0.5 mg/L), Lake A54 (0.6 mg/L), and Lake B5 (0.9 mg/L).

With the exception of BOOT-1, concentrations of TPHs in all lake samples were reported as below the analytical detection limit which was below applicable CWQG and GCDWQ. In the BOOT-1 site, toluene was 0.00059 mg/L; benzene, ethylbenzene, and xylene were reported as less than the detection limit of 0.0005 mg/L.

3.2.7 Summary

With the exception of Lake A54 (Peanut Lake), lakes of the Project area are clear, well-oxygenated, freshwater lakes characterized by low ionic strength, soft water hardness, low alkalinity, and neutral pH. Measured nutrient concentrations are typical of oligotrophic waterbodies in subarctic regions. Select lakes were not stratified during the summer sampling event. In general, measured water quality parameters were less than CWQG and GCDWQ with the exception of copper. Total copper concentration in the sample collected from Lake B7 (0.0027 mg/L) was higher than the hardness-dependent CWQG of 0.002 mg/L.

Lake A54, which was not sampled in previous baseline studies, was different in physical and chemical characteristics from the other lakes and sampling sites in Meliadine Lake. Out of all of the lakes, Lake A54 was the smallest and shallowest. It had a bottom substrate of rocky material (i.e., no sandy or silty sediment). Conductivity and TDS concentrations were eight times higher in the sample collected from Lake A54 than in any other lake sample. Chloride concentrations were 13 times higher. Alkalinity was also highest in the Lake A54 sample. At a hardness of 337 mg/L as CaCO_3 , water in Lake A54 was considered to be hard, whereas all other lake samples were soft. Ammonia, nitrate, nitrite, and TKN concentrations were highest in the sample collected from Lake A54, and nitrate and nitrite exceeded CWQGs. Total carbon and DOC concentrations were twice as high in the samples collected from Lake A54 compared to other lake samples. Concentrations of phosphorus compounds were similar, as were the concentrations of total metals and organic constituents. This pond is immediately adjacent to the portal and workings of the underground exploration program. As such, it receives all the flow originating from primary containment and runoff from the pads and spoil in the underground exploration work area (B. Hubert, Comaplex, pers.comm. 2008).

The results of the 2008 baseline study were similar to those reported in previous baseline studies (i.e., RL&L 1998, 1999, 2000, 2001) with the following exceptions. In 1997, there were a few isolated cases of CWQG exceedences for copper. In 1998 and 2000, most lakes samples exceeded CWQGs for cadmium and copper, and a few lakes exceeded lead and zinc CWQGs in 2000. However, no total metal exceedences were observed in 1999 and only one was observed in 2008 (copper in the sample collected from Lake B7), suggesting that metal concentrations may be variable among sampling years.

Concentrations of organic parameters have also been variable among sampling years. Phenol and total extractable hydrocarbons were higher than detection limits, and in the case of phenol, higher than CWQG, in some 1997 lake samples. In other years, including 2008, concentrations of these constituents were either below their detection limits and/or below their corresponding CWQG and GCDWQ.

Water quality in Lakes A54 and A8, as well as in other sites near the portal and workings of the underground exploration program, have been monitored periodically in 2007 and 2008 as part of a routine water quality monitoring program⁸. The results of the 2008 baseline study in Lakes A54 and A8 were similar to those reported in this monitoring program.

3.2.8 Quality Assurance/Quality Control

Detection limits varied within the June sampling event because samples were analyzed at two separate analytical laboratories: ALS Vancouver and ALS Edmonton. In July, all samples were analyzed at ALS Edmonton, but the detection limits were not the same as for the June samples.

The RPD⁹ between field duplicates was less than or equal to 20 percent (%) in most analytical determinations. With the exception of detections of DOC near the level of detection in two samples, trip blanks did not have detectable concentrations. More detections were observed in the field blanks. For example, out of seven field blanks, there were no detected parameters in two field blanks; fluoride was detected in two; TKN in one; total dissolved phosphorus and chlorophyll *a* in one; and DOC, dissolved aluminium, dissolved zinc, and chlorophyll *a* in one. With the exception of total dissolved phosphorus and

⁸ Some sampling locations were mandated by the terms of the water license issued by the Nunavut Water Board. Other locations were meant to monitor local development impacts and to provide continuity with historical sampling records (S. Barham, Comaplex, pers. comm.).

⁹ Relative percent difference is the absolute difference between the duplicates values divided by the average of two duplicates.

chlorophyll *a*, concentrations of these parameters were generally at or near the detection limit.

Laboratory QA/QC results are presented in the analytical reports (Appendix IV). Method blanks did not have detectable concentrations of any parameter. Laboratory duplicates were within acceptable limits (i.e., $\leq 20\%$) for all parameters analyzed. Recoveries of internal reference materials, certified reference materials, and matrix spikes were within laboratory data quality objectives.

3.3 SEDIMENT QUALITY IN LAKES

Sediments were sampled at 15 sites in the Project area (Figures 1-4 and 1-5). No sediment samples were collected in Lake A54 because the substrate in this lake was rocky and not conducive to grab sampling. Field duplicates were collected at each site with the exception of Lake B7.

This section summarizes the results of the physical and chemical characterizations of the sediment samples. Screening tables detailing the analytical results and comparisons to guidelines (as appropriate) are provided in Appendix III. Laboratory analytical reports, including laboratory QA/QC results, are provided in Appendix IV.

3.3.1 Physical Characterization

Most of the sediment samples in Basins A and B, in the BOOT sites, and Lake DI4 site consisted primarily of silt (0.05 millimetres [mm] to 2 micrometres [μm]) and sand (2.0 mm to 0.05 mm) in similar proportions. With the exception of ML-A, sites in Meliadine Lake (ML-E, ML-SE, ML-B, ML-S, and ML-W) and in the Control Lake site were predominantly sandy. At all sites, the clay fraction (less than 0.02 μm) accounted for 2 to 11% of the sample. Moisture content ranged from 37% (one sample from BOOT-1 site) to 95% (one sample from Lake A8 site).

3.3.2 Nutrients

Total nitrogen concentrations ranged from 0.07 to 1.44%. Total carbon concentrations, consisting entirely of the organic fraction, ranged from 0.7 to 16.9%. The highest TOC concentrations occurred in the sample collected from Lake B6, with an average TOC concentration of 16.1%. The lowest average TOC concentrations occurred in sites BOOT-1, ML-E, and ML-B with 1.2, 1.4, and 0.8%, respectively.

3.3.3 Metals

Table 3-3 lists detection frequency and minimum and maximum concentrations detected in the sediment samples. Metals such as antimony, beryllium, cadmium, silver, thallium, tin, and uranium were near or below detection limits in all sediment samples. Cadmium was detected in one sample (one sample of Lake B6) at the ISQG of 0.6 mg/L; all other samples were reported as the below detection limit of 0.5 mg/L.

Table 3-3 Range of Metals Concentrations Measured in the Sediment Samples

Metal	Detection Frequency	# ISQG Exceedences	# PEL Exceedences	Minimum Concentration (mg/kg dry weight)	Maximum Concentration (mg/kg dry weight)
Antimony (Sb)	0/58 (0%)	N/A	N/A	<0.2	<0.2
Arsenic (As)	58/58 (100%)	40	26	1.8	173
Barium (Ba)	58/58 (100%)	N/A	N/A	19	124
Beryllium (Be)	0/58 (0%)	N/A	N/A	<1	<1
Cadmium (Cd)	1/58 (2%)	0	0	<0.5	0.6
Chromium (Cr)	58/58 (100%)	13	0	13.2	53.4
Cobalt (Co)	58/58 (100%)	N/A	N/A	2	32
Copper (Cu)	58/58 (100%)	25	0	6	155
Lead (Pb)	29/58 (50%)	0	0	<5	14
Mercury (Hg)	11/58 (19%)	0	0	<0.05	0.09
Molybdenum (Mo)	47/58 (81%)	N/A	N/A	<1	7
Nickel (Ni)	58/58 (100%)	N/A	N/A	7	81
Selenium (Se)	53/58 (91%)	N/A	N/A	<0.2	1.9
Silver (Ag)	0/58 (0%)	N/A	N/A	<1	<1
Thallium (Tl)	0/58 (0%)	N/A	N/A	<1	<1
Tin (Sn)	0/58 (0%)	N/A	N/A	<5	<5
Uranium (U)	10/58 (17%)	N/A	N/A	<2	4
Vanadium (V)	58/58 (100%)	N/A	N/A	12	58
Zinc (Zn)	58/58 (100%)	0	0	20	100

Notes: ISQG = interim freshwater sediment quality guidelines; PEL = probable effect level; N/A = not applicable; mg/kg = milligrams per kilogram; % = percent; < = less than.

There were exceedences of ISQGs in all sediment samples except those from sites BOOT-1, ML-B, and ML-S. At these sites, metals concentrations were generally the lowest. Arsenic, chromium, and copper concentrations exceeded ISQGs in some sediment samples.

Arsenic concentrations in the samples ranged from 1.8 to 173 milligrams per kilogram (mg/kg) dry weight (dw). Forty of 58 sediment samples (69%) exceeded the ISQG of 5.9 mg/kg dw. Arsenic concentrations were below the ISQG in all samples from sites BOOT-1, ML-B, ML-S, and ML-W, and two samples from site ML-E. The PEL for arsenic (17.0 mg/kg dw) was exceeded in all other sediment samples (26 samples or 45% of total) with the exceptions of two samples from sites ML-E and all samples from the Control Lake site, ML-SE site, and the site in Lake DI1.

Chromium concentrations in the samples ranged from 13.2 to 53.4 mg/kg dw. Out of 58 sediment samples, 13 samples (22%) exceeded the ISQG of 37.3 mg/kg dw. The ISQG for chromium was exceeded in two samples from the Lake B5 site, three samples from the Lake A8 site, all samples from the BOOT-2 site, and all samples from the Lake DI4 site. The PEL of 90.0 mg/kg dw was not exceeded in any sample.

Copper concentrations in the sediment samples ranged from 6 to 155 mg/kg dw. Out of 58 samples, 25 samples (43%) exceeded the ISQG of 35.7 mg/kg dw. The ISQG for copper was exceeded in all samples from sites B6, B7, A8, BOOT-2, ML-A, and DI4; in two samples from the Lake B5 site; and in one sample from the ML-W site. The PEL of 197 mg/kg dw was not exceeded in any sample.

Other metals detected in all sediment samples included barium, cobalt, lead, molybdenum, nickel, selenium, vanadium, and zinc. Of these, only lead and zinc have sediment quality guidelines. Concentrations of lead and zinc were below sediment quality guidelines. Mercury was detected in 11 samples (19%), but no values exceeded the ISQG of 0.17 mg/kg dw.

Concentrations of metals that were detected in all sediment samples (i.e., arsenic, chromium, copper, and zinc) were log-transformed and plotted to determine if the relationship between the shallow (0 to 2 cm) and deeper (0 to 10 cm) profiles varied from a 1:1 relationship (Figure 3-5). Based on a visual inspection of the plots, metal concentrations were generally similar between two profiles. This suggests that there were no differences in contaminant chemistry between the profiles and that current (2008) and future data from the shallow (0 to 2 cm) profile can be compared to the historical dataset, which was based on the deeper (0 to 10 cm) profile.

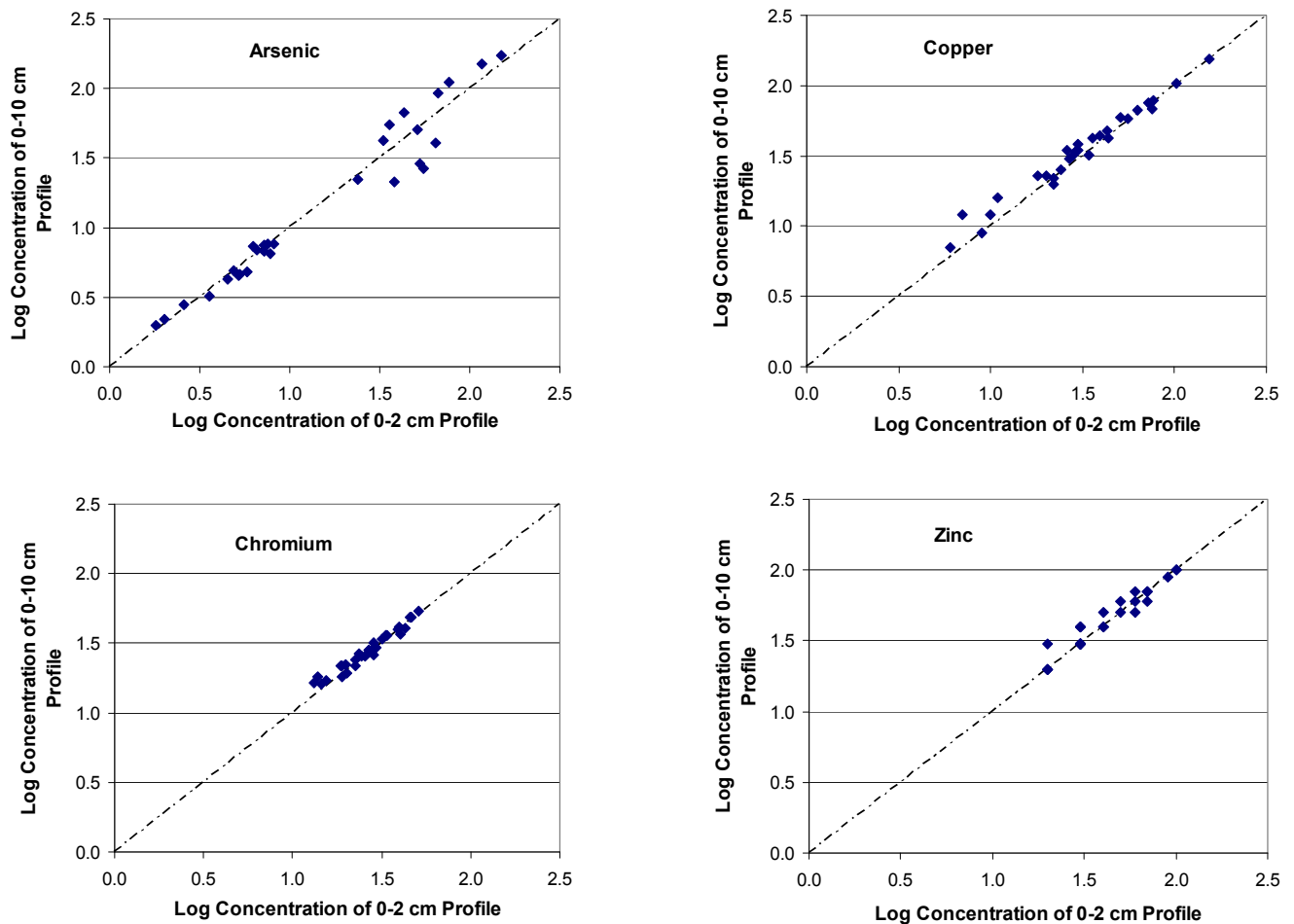


Figure 3-5 Relationship between Shallow (0 to 2 cm) and Deep (0 to 10 cm) Sediment Profiles

3.3.4 Organics

Polycyclic aromatic hydrocarbons (PAHs) are generated by incomplete combustion of organic material. Concentrations of PAHs in aquatic ecosystems are generally highest in sediments, intermediate in aquatic biota, and lowest in the water column (CCREM 1987). Concentrations of PAHs were assessed at five lake sites (B7, B5, A8, BOOT-1, and BOOT-2).

Table 3-4 lists detection frequency and minimum and maximum concentrations of select PAHs detected in the sediment samples¹⁰. Detection limits were at or below the corresponding ISQG for all measured PAHs except acenaphthene, acenaphthylene, and dibenzo(a,h)anthracene. In sediment samples collected from the Lake A8 site, detection limits (0.01 mg/kg) for these three parameters were higher than in other sediment samples because of the high moisture content in these samples (i.e., $\geq 86\%$). With the exception of naphthalene, PAH concentrations in the sediment samples were either below the detection limits and/or below the ISQGs and PELs.

Table 3-4 Range of Select Polycyclic Aromatic Hydrocarbon Concentrations Measured in the Sediment Samples

Polycyclic Aromatic Hydrocarbon	Detection Frequency	# ISQG Exceedences	# PEL Exceedences	Minimum Concentration (mg/kg dw)	Maximum Concentration (mg/kg dw)
Acenaphthene	0/18 (0%)	0 ^a	0	<0.005	<0.01
Acenaphthylene	0/18 (0%)	0 ^b	0	<0.005	<0.01
Anthracene	0/18 (0%)	0	0	<0.005	<0.01
Benzo(a)anthracene	3/18 (17%)	0	0	<0.005	0.01
Benzo(a)pyrene	0/18 (0%)	0	0	<0.005	<0.01
Biphenyl	7/18 (39%)	N/A	N/A	<0.005	0.03
Chrysene	3/18 (17%)	0	0	<0.005	0.01
Dibenzo(a,h)anthracene	0/18 (0%)	0 ^c	0	<0.005	<0.01
Fluoranthene	0/18 (0%)	0	0	<0.005	<0.01
Fluorene	1/18 (6%)	0	0	<0.005	<0.01
1-Methyl naphthalene	8/18 (44%)	0 ^d	0 ^(d)	<0.005	0.02
Naphthalene	17/18 (94%)	1	0	<0.005	0.06
Phenanthrene	6/18 (33%)	0	0	<0.005	0.01
Pyrene	0/18 (0%)	0	0	<0.005	<0.01

Notes: ISQG = interim freshwater sediment quality guidelines; PEL = probable effect level; N/A = not applicable; mg/kg dw = milligrams per kilogram dry weight; % = percent; < = less than.

- a Three samples were reported as less than 0.01 mg/kg, which is higher than the ISQG guideline of 0.00671 mg/kg.
b Three samples were reported as less than 0.01 mg/kg, which is higher than the ISQG guideline of 0.00587 mg/kg.
c Three samples were reported as less than 0.01 mg/kg, which is higher than the ISQG guideline of 0.00622 mg/kg.
d Compared to CCME guidelines for 2-methylnaphthalene.

Out of the 46 individual PAHs measured in the sediment samples, seven PAHs were detected in one or more sediment samples: benzo(a)anthracene, biphenyl,

¹⁰ Only PAHs that had CCME guidelines or that were detected in one or more sediment samples are presented in Table 3-4. Results for all measured PAHs are presented in Table III-2 in Appendix III.

chrysene, fluorene, 1-methylnaphthalene, naphthalene, and phenanthracene. For most of these parameters, concentrations were at the detection limit of 0.005 mg/kg dw (or 0.01 mg/kg dw for the three high-moisture sediment samples from site A8). Those parameters with higher concentrations are described below.

Biphenyl was detected in seven sediment samples; concentrations were at the detection limit of 0.005 mg/kg dw in four of the samples from sites B5 and BOOT-2. In samples from the Lake A8 site, biphenyl concentrations ranged from 0.006 to 0.03 mg/kg dw. There are no ISQG or PEL guidelines for biphenyl.

Detected concentrations of 1-methylnaphthalene ranged from 0.005 to 0.02 mg/kg dw. There are no ISQG or PEL values for 1-methylnaphthalene, but the measured concentrations were less than the ISQG of 0.0202 mg/kg dw and PEL of 0.201 mg/kg dw for 2-methylnaphthalene.

Naphthalene was detected in almost all sediment samples. Most measured concentrations ranged from 0.005 to 0.03 mg/kg dw. One sediment sample from the Lake A8 site had a naphthalene concentration of 0.06 mg/kg dw, which was higher than the ISQG of 0.0346 mg/kg dw but was below the PEL of 0.391 mg/kg dw¹¹.

Phenanthrene was measured in six sediment samples at or near the detection limits; concentrations ranged from 0.005 to 0.01 mg/kg dw. All measured concentrations were less than the ISQG of 0.0419 mg/kg dw for phenanthrene.

3.3.5 Summary

Lake sediments in the Project area consisted primarily of the sandy or silty fraction with a wide range of moisture contents from 37 to 95%. Concentrations of TOC were also variable across sites. There were exceedences of ISQGs in all sediment samples except those from the BOOT-1, ML-B, and ML-S sites. At these sites, metals concentrations were generally the lowest. Arsenic, chromium, and copper concentrations exceeded ISQGs in some sediment samples. In general, metal concentrations of arsenic, chromium, copper, and zinc were similar between the shallow (0 to 2 cm) and deeper (0 to 10 cm) profiles. This finding indicates that the historical (0 to 10 cm) data will provide an appropriate baseline for future sampling of shallow (0 to 2 cm) profiles. Concentrations of

¹¹ The laboratory QA/QC results indicated the presence of blank contamination (Section 3.3.6). The blank-corrected naphthalene concentration for this sediment sample would be 0.051 mg/kg dw, which is also higher than the ISQG.

individual PAHs were either less than detection limits or less than corresponding ISQGs with the exception of one sediment sample (from site A8) that had a naphthalene concentration of 0.06 mg/kg dw, which is higher than the ISQG of 0.0346 mg/kg dw.

The results of the 2008 baseline study were similar to those reported in the last sediment baseline study (RL&L 1999).

3.3.6 Quality Assurance/Quality Control

The RPD¹² between field duplicates was less than or equal to 20% in 77% of the analytical determinations of nutrient and metals that were carried out ($n=644$). Sites B6, B5, BOOT-1, and ML-E had the most parameters with RPDs greater than 20%. Of the nutrients and metals that were detected in the sediment samples, arsenic, cobalt, and molybdenum had the highest RPDs (up to 123%). The high RPD values observed indicate relatively high small-scale heterogeneity among the sediment samples. This should be taken into account in future sampling programs.

Laboratory QA/QC results are presented in the analytical reports (Appendix IV). Laboratory duplicates were within acceptable limits (i.e., $\leq 20\%$) for all parameters analyzed. Recoveries of internal reference materials, certified reference materials, and matrix spikes were within laboratory data quality objectives. Method blanks did not have detectable concentrations of any parameter with the exception of naphthalene. Naphthalene was detected in the method blank at 0.009 mg/kg dw. The relatively high naphthalene concentration in the method blank compared to those in the sediment samples yields uncertainty as to the actual naphthalene concentrations in the sediment samples.

3.4 RECOMMENDATIONS

As noted in the gap analysis conducted prior to the 2008 lake program, it is recommended that the lakes also be sampled in the winter (under ice conditions) to characterize the temporal variability in lake water quality (Golder 2008). The historical baseline data contains only one set of winter data that was collected in 1998. Elevated concentrations of several water quality constituents in these late winter lake samples were attributed to the formation of ice, which concentrated the ions in the remaining water column, and to anoxic conditions particularly in the shallower lakes (RL&L 1999). Another sampling event is recommended

¹² Relative percent difference is the absolute difference between the duplicates values divided by the average of two duplicates.

because temporal changes cannot be assessed on one year of summer and winter data.

Total metal concentrations were compared between the shallow (0 to 2 cm) and deeper (0 to 10 cm) profiles, which indicated that the two profiles exhibited similar sediment chemistry. It is recommended that future monitoring programs sample shallow profiles to enhance the sensitivity of the monitoring program to potential changes in sediment quality in the low-deposition environments of these lakes.

Duplicate sediment samples were collected in this 2008 field program because the previous sediment study in 1998 indicated low statistical variability among replicates. However, RPDs were higher than expected, which indicates higher spatial heterogeneity in sediment chemistry. Therefore, it would be worthwhile to increase the number of replicates in future sampling programs to three or four.

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5 CLOSURE

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APPENDIX I

WATER QUALITY DATA FOR STREAMS IN THE MELIADINE WEST GOLD PROJECT AREA

Table I-1
Water Quality Data for Streams in the Meliadine West Gold Project, June 2008

Sample ID	Units	Guidelines		ML-MR	B7-6	A8-7	B5-4	DI-6	DI-7	NEW-1	NEW-2	DI-4	NEW-3
Date Sampled				21-JUN-08	21-JUN-08	21-JUN-08	21-JUN-08	23-JUN-08	23-JUN-08	23-JUN-08	23-JUN-08	24-JUN-08	24-JUN-08
Time Sampled				00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID				L647662-1	L647662-2	L647662-3	L647662-4	L649330-1	L649330-2	123456780	L649330-4	L649329-1	L649329-2
GPS Coordinates				530714, 6989630	537876, 6989363	540750, 6986701	538395, 6987778	565841, 6972744	574494, 6969739	546982, 6987421	550631, 6981869	549441, 6983602	553779, 6980992
		CWQG ^(a)	GCDWQ ^(b)										
Field Measurements													
Water Temperature	°C			5.63	10.90	6.85	5.78	5.50	7.82	15.2	18.16	11.45	11.03
Dissolved Oxygen	mg/L	5.5-9.5 ^(c)		16.54	11.85	13.3	13.52	14.57	13.43	11.37	9.59	11.61	11.83
Conductivity	µS/cm			42	78	74	50	34	37	80	82	72	37
pH	pH	6.5-9.0	6.5-8.5 ^(d)	-	8.28	-	-	-	7.59	7.91	8.35	8.11	7.55
Physical Tests													
Total Suspended Solids (TSS)	mg/L			<3.0	<3.0	<3.0	<3.0	<3	<3	<3	<3	<3	<3
Total Dissolved Solids (TDS)	mg/L		≤500 ^(d)	34	79	70	47	-	-	-	-	-	-
Anions and Nutrients													
Alkalinity, Total (as CaCO ₃)	mg/L			17.8	22.7	24.8	24.7	11	12	23	33	26	14
Bicarbonate (HCO ₃)	mg/L			17.8	22.7	24.8	24.7	14	15	28	41	32	17
Carbonate (CO ₃)	mg/L			<2.0	<2.0	<2.0	<2.0	<5	<5	<5	<5	<5	<5
Hydroxide (OH)	mg/L			<2.0	<2.0	<2.0	<2.0	<5	<5	<5	<5	<5	<5
Ammonia-N	mg/L	0.6136-5.856 ^(e)		<0.020	<0.020	<0.020	<0.020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide (Br)	mg/L			<0.050	<0.050	<0.050	<0.050	<0.1	0.1	0.1	<0.1	0.1	<0.1
Chloride (Cl)	mg/L		≤250 ^(d)	6.91	14.5	16.9	7.27	6	7	13	6	9	4
Conductivity (EC)	µS/cm			68.8	104	113	80.1	51.7	53.3	94.3	91.3	92	50.1
Fluoride (F)	mg/L		1.5	0.021	0.02	<0.020	<0.020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hardness (as CaCO ₃)	mg/L			24	44.5	46	33.2	15	16	29	37	37	18
Ion Balance	%			-	-	-	-	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC
Nitrate+Nitrite-N	mg/L			-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate-N	mg/L	2.9 ^(f)	10	<0.0050	<0.0050	0.0168	<0.0050	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite-N	mg/L	0.06	3.2	<0.0010	<0.0010	0.001	<0.0010	0.07	0.06	<0.05	<0.05	0.09	0.08
Total Kjeldahl Nitrogen	mg/L			0.167	0.252	0.208	0.202	<0.2	<0.2	0.4	0.3	0.4	<0.2
pH	pH	6.5-9.0	6.5-8.5 ^(d)	7.06	7.08	7.11	7.14	7.4	7.4	7.6	7.8	7.7	7.4
Orthophosphate (PO ₄ -P)	mg/L			<0.0010	<0.0010	<0.0010	<0.0010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Phosphorus, Total	mg/L			0.0025	0.0049	0.0042	0.0044	0.007	0.01	0.012	0.01	0.01	0.009
Phosphorus, Total Dissolved	mg/L			<0.0020	<0.0020	<0.0020	<0.0020	0.002	0.002	0.003	0.002	0.003	0.003
Sulfate (SO ₄)	mg/L		≤500 ^(d)	3.11	3.02	2.78	2.81	2.3	2.4	3.6	4.1	6.7	3.4
TDS (Calculated)	mg/L		≤500 ^(d)	-	-	-	-	26	27	49	49	50	27
Cyanides													
Cyanide, Total	mg/L	0.005 ^(g)	0.2	<0.0050	<0.0050	<0.0050	<0.0050	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Organic / Inorganic Carbon													
Dissolved Organic Carbon	mg/L			2.5	3.61	2.88	2.85	2	2	5	4	5	3
Total Inorganic Carbon	mg/L			3.32	5.05	5.37	5.51	3	3	5	7	6	4
Total Carbon	mg/L			5.97	8.6	8.04	8.01	5	6	11	12	11	7
Total Organic Carbon	mg/L			2.64	3.55	2.67	2.5	2	3	5	5	5	3

Table I-1
Water Quality Data for Streams in the Meliadine West Gold Project, June 2008 (continued)

Sample ID	Units	Guidelines		ML-MR	B7-6	A8-7	B5-4	DI-6	DI-7	NEW-1	NEW-2	DI-4	NEW-3
Date Sampled				21-JUN-08	21-JUN-08	21-JUN-08	21-JUN-08	23-JUN-08	23-JUN-08	23-JUN-08	23-JUN-08	24-JUN-08	24-JUN-08
Time Sampled				00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID				L647662-1	L647662-2	L647662-3	L647662-4	L649330-1	L649330-2	123456780	L649330-4	L649329-1	L649329-2
GPS Coordinates				530714, 6989630	537876, 6989363	540750, 6986701	538395, 6987778	565841, 6972744	574494, 6969739	546982, 6987421	550631, 6981869	549441, 6983602	553779, 6980992
		CWQG ^(a)	GCDWQ ^(b)										
Total Metals (ICP-MS)													
Aluminum (Al)	mg/L	0.005-0.1 ^(h)	0.1/0.2 ^(d, i)	<0.0050	<0.0050	<0.0050	<0.0050	0.0021	0.0075	0.0052	0.0058	0.005	0.0038
Antimony (Sb)	mg/L		0.006	<0.00050	<0.00050	<0.00050	<0.00050	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Arsenic (As)	mg/L	0.005	0.010	<0.00050	0.00074	0.00115	0.00083	<0.0004	<0.0004	0.0011	0.0012	0.0009	0.0005
Barium (Ba)	mg/L		1	<0.020	<0.020	<0.020	<0.020	0.006	0.006	0.009	0.014	0.012	0.008
Beryllium (Be)	mg/L			<0.0010	<0.0010	<0.0010	<0.0010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron (B)	mg/L		5	<0.10	<0.10	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (Cd)	mg/L	0.000017 ^(f, j)	0.005	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)	mg/L			7.59	15.2	15.8	10.9	4.4	4.5	8.5	12.2	11.3	5.7
Chromium (Cr)	mg/L	0.0089 Cr ³⁺ / 0.001 Cr ⁶⁺	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006
Cobalt (Co)	mg/L			<0.00030	<0.00030	<0.00030	<0.00030	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Copper (Cu)	mg/L	0.002 - 0.004 ^(k)	≤1.0 ^(d)	<0.0010	<0.0010	<0.0010	<0.0010	<0.001	<0.001	0.001	0.001	0.001	0.001
Iron (Fe)	mg/L	0.3	≤0.3 ^(d)	<0.030	0.065	0.067	0.107	0.013	0.044	0.207	0.094	0.095	0.059
Lead (Pb)	mg/L	0.001 - 0.007 ^(l)	0.01	<0.00050	<0.00050	<0.00050	<0.00050	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium (Li)	mg/L			<0.0050	<0.0050	<0.0050	<0.0050	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium (Mg)	mg/L			1.12	1.63	2.03	1.48	0.8	0.8	1.5	1.3	1.4	0.8
Manganese (Mn)	mg/L		≤0.05 ^(d)	0.00204	0.00515	0.00646	0.0126	0.002	0.001	0.003	0.007	0.005	0.002
Mercury (Hg)-Total	mg/L	0.000026	0.001	<0.000020	<0.000020	<0.000020	<0.000020	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Molybdenum (Mo)	mg/L	0.073 ^(f)		<0.0010	<0.0010	<0.0010	<0.0010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nickel (Ni)	mg/L	0.025 - 0.150 ^(m)		<0.0010	<0.0010	<0.0010	<0.0010	<0.002	<0.002	<0.002	<0.002	0.002	<0.002
Potassium (K)	mg/L			<2.0	<2.0	<2.0	<2.0	0.7	0.8	0.9	3.4	3.1	3.3
Selenium (Se)	mg/L	0.001	0.01	<0.0010	<0.0010	<0.0010	<0.0010	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Silver (Ag)	mg/L	0.0001		<0.000020	<0.000020	<0.000020	<0.000020	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Sodium (Na)	mg/L		≤200 ^(d)	4	2.2	2.5	2.5	4	4	7	10	11	11
Thallium (Tl)	mg/L	0.0008		<0.00020	<0.00020	<0.00020	<0.00020	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin (Sn)	mg/L			<0.00050	<0.00050	<0.00050	<0.00050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Titanium (Ti)	mg/L			<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Uranium (U)	mg/L		0.02	<0.00020	<0.00020	<0.00020	<0.00020	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Vanadium (V)	mg/L			<0.0010	<0.0010	<0.0010	<0.0010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc (Zn)	mg/L	0.03	≤5.0 ^(d)	<0.0050	<0.0050	<0.0050	<0.0050	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Dissolved Metals (ICP-MS)													
Aluminum (Al)	mg/L	0.005-0.1 ^(h)	0.1 / 0.2 ^(d, i)	<0.0050	<0.0050	<0.0050	<0.0050	0.0094	0.0036	0.0033	0.0042	0.0026	0.0025
Antimony (Sb)	mg/L		0.006	<0.00050	<0.00050	<0.00050	<0.00050	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Arsenic (As)	mg/L	0.005	0.010	<0.00050	0.00069	0.00098	0.00059	<0.0004	<0.0004	0.0009	0.001	0.0009	0.0005
Barium (Ba)	mg/L		1	<0.020	<0.020	<0.020	<0.020	0.007	0.006	0.009	0.014	0.013	0.008
Beryllium (Be)	mg/L			<0.0010	<0.0010	<0.0010	<0.0010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron (B)	mg/L		5	<0.10	<0.10	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (Cd)	mg/L	0.000017 ^(f, j)	0.005	0.000065	<0.000017	<0.000017	<0.000017	0.000028	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)	mg/L			7.76	15.1	15.1	10.9	-	-	-	-	-	-
Chromium (Cr)	mg/L	0.0089 Cr ³⁺ / 0.001 Cr ⁶⁺	0.05	<0.0010	<0.0010	<0.0010	<0.0010	0.00024	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006
Cobalt (Co)	mg/L			<0.00030	<0.00030	<0.00030	<0.00030	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Copper (Cu)	mg/L	0.002 - 0.004 ^(k)	≤1.0 ^(d)	<0.0010	<0.0010	<0.0010	<0.0010	0.006	<0.001	0.001	0.001	0.002	0.001
Iron (Fe)	mg/L	0.3	≤0.3 ^(d)	<0.030	0.039	0.043	0.037	0.048	0.032	0.149	0.04	0.061	0.023
Lead (Pb)	mg/L	0.001 - 0.007 ^(l)	0.01	<0.00050	<0.00050	<0.00050	<0.00050	0.106	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium (Li)	mg/L			<0.0050	<0.0050	<0.0050	<0.0050	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Magnesium (Mg)	mg/L			1.13	1.64	2.03	1.47	-	-	-	-	-	-
Manganese (Mn)	mg/L		≤0.05 ^(d)	0.00283	0.00395	0.00492	0.00484	0.002	0.001	0.002	0.003	0.004	0.001

Table I-1
Water Quality Data for Streams in the Meliadine West Gold Project, June 2008 (continued)

Sample ID	Units	Guidelines		ML-MR	B7-6	A8-7	B5-4	DI-6	DI-7	NEW-1	NEW-2	DI-4	NEW-3
Date Sampled				21-JUN-08	21-JUN-08	21-JUN-08	21-JUN-08	23-JUN-08	23-JUN-08	23-JUN-08	23-JUN-08	24-JUN-08	24-JUN-08
Time Sampled				00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID				L647662-1	L647662-2	L647662-3	L647662-4	L649330-1	L649330-2	123456780	L649330-4	L649329-1	L649329-2
GPS Coordinates				530714, 6989630	537876, 6989363	540750, 6986701	538395, 6987778	565841, 6972744	574494, 6969739	546982, 6987421	550631, 6981869	549441, 6983602	553779, 6980992
		CWQG ^(a)	GCDWQ ^(b)										
Dissolved Metals (ICP-MS) (continued)													
Mercury (Hg)-Dissolved	mg/L	0.000026	<u>0.001</u>	<0.000020	<0.000020	<0.000020	<0.000020	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Molybdenum (Mo)	mg/L	0.073^(f)		<0.0010	<0.0010	<0.0010	<0.0010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nickel (Ni)	mg/L	0.025 - 0.150^(m)		<0.0010	<0.0010	<0.0010	<0.0010	<0.002	<0.002	<0.002	<0.002	0.002	<0.002
Potassium (K)	mg/L			<2.0	<2.0	<2.0	<2.0	-	-	-	-	-	-
Selenium (Se)	mg/L	0.001	<u>0.01</u>	<0.0010	<0.0010	<0.0010	<0.0010	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Silver (Ag)	mg/L	0.0001		<0.000020	<0.000020	<0.000020	<0.000020	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)	mg/L		<u>≤200^(d)</u>	3.9	2.3	2.7	2.5	-	-	-	-	-	-
Thallium (Tl)	mg/L	0.0008		<0.00020	<0.00020	<0.00020	<0.00020	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin (Sn)	mg/L			<0.00050	<0.00050	<0.00050	<0.00050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Titanium (Ti)	mg/L			<0.010	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Uranium (U)	mg/L		<u>0.02</u>	<0.00020	<0.00020	<0.00020	<0.00020	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Vanadium (V)	mg/L			<0.0010	<0.0010	<0.0010	<0.0010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc (Zn)	mg/L	0.03	<u>≤5.0^(d)</u>	<0.0050	<0.0050	<0.0050	<0.0050	0.035	<0.002	<0.002	<0.002	<0.002	<0.002
Plant Pigments													
Chlorophyll a	µg/L			0.355	0.595	0.012	0.0616	3	5	3	10	3	31

Notes: Bold values are equal to or greater than the CWQG guideline.

Underlined values are equal to or greater than the GCDWQ guideline.

Italicized values indicate the detection limit equals or exceeds the guideline.

(a) = CWQG = Canadian Water Quality Guidelines for the Protection of Aquatic Life - Freshwater (CCME 2007).

(b) = GCDWQ = Guidelines for Canadian Drinking Water Quality (Health Canada; May 2008).

(c) = Dissolved oxygen for warm water biota: early life stages = 6 mg/L, other life stages = 5.5 mg/L; for cold water biota: early life stages = 9.5 mg/L, other life stages = 6.5 mg/L.

(d) = Aesthetic objective.

(e) = Ammonia guideline is pH and temperature dependent; at pH 7.5, WQG for total ammonia (expressed as mg/L total ammonia-N) ranges from 0.6136 mg/L at 30°C to 5.856 mg/L at 0°C.

(f) = Interim guideline.

(g) = Guideline is for free CN.

(h) = Aluminum guideline is pH dependent: 0.005 mg/L at pH < 6.5, 0.1 mg/L at pH ≥ 6.5.

(i) = This is an operational guidance value, designed to apply only to drinking water treatment plants using aluminum-based coagulants. The operational guideline values of 0.1 mg/L applies to conventional treatment plants and 0.2 mg/L applies to other types of treatment systems.

(j) = Cadmium guideline is hardness dependent: $10^{[0.86(\log[\text{hardness}]) - 3.2]}$, the WQG listed is based on a hardness of 48.5 mg/L as CaCO₃.

(k) = Copper guideline is hardness dependent: 0.002 mg/L at CaCO₃ of 0-120 mg/L; 0.003 mg/L at CaCO₃ of 120-180 mg/L; 0.004 mg/L at CaCO₃ of >180 mg/L.

(l) = Lead guideline is hardness dependent: 0.001 mg/L at CaCO₃ of 0-60 mg/L; 0.002 mg/L at CaCO₃ of 60-120 mg/L; 0.004 mg/L at CaCO₃ of 120-180 mg/L; 0.007 mg/L at CaCO₃ of >180 mg/L.

(m) = Nickel guideline is hardness dependent: 0.025 mg/L at CaCO₃ of 0-60 mg/L; 0.065 mg/L at CaCO₃ of 60-120 mg/L; 0.110 mg/L at CaCO₃ of 120-180 mg/L; 0.150 mg/L at CaCO₃ of >180 mg/L.

°C = degrees Celsius; µS/cm = microSiemens per centimetre; % = percent; mg/L = milligrams per litre; µg/L = micrograms per litre; < = less than; - = no data available.

Table I-2
Quality Assurance/Quality Control (QA/QC) Results for Stream Samples Collected in June 2008

Sample ID	Units	ML-MR	E2-1	RPD	E9-8	E8-7	E4-3	E3-2
Date Sampled		21-JUN-08	22-JUN-08		21-JUN-08	21-JUN-08	21-JUN-08	21-JUN-08
Time Sampled		00:00	12:45		00:00	00:00	00:00	00:00
ALS Sample ID		L647662-1	L647663-1		L647664-1	L647664-2	L647664-3	L647664-4
Sample Notes			Field Dup ML-MR		Trip Blank	Trip Blank	Field Blank	Field Blank
GPS Coordinates		530714, 6989630	530714, 6989630					
Field Measurements								
Water Temperature	°C	5.63	5.63	0%	-	-	-	-
Dissolved Oxygen	mg/L	16.54	16.54	0%	-	-	-	-
Conductivity	µS/cm	42	42	0%	-	-	-	-
Physical Tests								
Total Suspended Solids (TSS)	mg/L	<3.0	<3.0	N/A	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids (TDS)	mg/L	34	38	11%	<10	<10	<10	<10
Anions and Nutrients								
Alkalinity, Total (as CaCO ₃)	mg/L	17.8	17.7	1%	<2.0	<2.0	<2.0	<2.0
Bicarbonate (HCO ₃)	mg/L	17.8	17.7	1%	<2.0	<2.0	<2.0	<2.0
Carbonate (CO ₃)	mg/L	<2.0	<2.0	N/A	<2.0	<2.0	<2.0	<2.0
Hydroxide (OH)	mg/L	<2.0	<2.0	N/A	<2.0	<2.0	<2.0	<2.0
Ammonia-N	mg/L	<0.020	<0.020	N/A	<0.020	<0.020	<0.020	<0.020
Bromide (Br)	mg/L	<0.050	<0.050	N/A	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	mg/L	6.91	6.88	0%	<0.50	<0.50	<0.50	<0.50
Conductivity (EC)	µS/cm	68.8	67.8	1%	<2.0	<2.0	<2.0	<2.0
Fluoride (F)	mg/L	0.021	0.021	0%	<0.020	<0.020	0.026	0.026
Hardness (as CaCO ₃)	mg/L	24	22.2	8%	<0.70	<0.70	<0.70	<0.70
Nitrate-N	mg/L	<0.0050	<0.0050	N/A	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite-N	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	mg/L	0.167	0.184	10%	<0.050	<0.050	<0.050	0.058
pH	pH	7.06	6.69	5%	5.68	5.6	5.75	5.69
Orthophosphate (PO4-P)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, Total	mg/L	0.0025	0.003	18%	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus, Total Dissolved	mg/L	<0.0020	<0.0020	N/A	<0.0020	<0.0020	<0.0020	<0.0020
Sulfate (SO ₄)	mg/L	3.11	3.13	1%	<0.50	<0.50	<0.50	<0.50
Cyanides								
Cyanide, Total	mg/L	<0.0050	<0.0050	N/A	<0.0050	<0.0050	<0.0050	<0.0050
Organic / Inorganic Carbon								
Dissolved Organic Carbon	mg/L	2.5	2.45	2%	-	-	-	-
Total Inorganic Carbon	mg/L	3.32	3.76	12%	<0.50	<0.50	<0.50	<0.50
Total Carbon	mg/L	5.97	6.25	5%	<0.50	<0.50	<0.50	<0.50
Total Organic Carbon	mg/L	2.64	2.49	6%	<0.50	<0.50	<0.50	<0.50

Table I-2
Quality Assurance/Quality Control (QA/QC) Results for Stream Samples Collected in June 2008 (continued)

Sample ID	Units	ML-MR	E2-1	RPD	E9-8	E8-7	E4-3	E3-2
Date Sampled		21-JUN-08	22-JUN-08		21-JUN-08	21-JUN-08	21-JUN-08	21-JUN-08
Time Sampled		00:00	12:45		00:00	00:00	00:00	00:00
ALS Sample ID		L647662-1	L647663-1		L647664-1	L647664-2	L647664-3	L647664-4
Sample Notes			Field Dup ML-MR		Trip Blank	Trip Blank	Field Blank	Field Blank
GPS Coordinates		530714, 6989630	530714, 6989630					
Total Metals (ICP-MS)								
Aluminum (Al)	mg/L	<0.0050	<0.0050	N/A	<0.0050	<0.0050	<0.0050	<0.0050
Antimony (Sb)	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)	mg/L	<0.020	<0.020	N/A	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)	mg/L	<0.10	<0.10	N/A	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)	mg/L	<0.000017	<0.000017	N/A	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)	mg/L	7.59	7.08	7%	<0.10	<0.10	<0.10	<0.10
Chromium (Cr)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)	mg/L	<0.00030	<0.00030	N/A	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Iron (Fe)	mg/L	<0.030	<0.030	N/A	<0.030	<0.030	<0.030	<0.030
Lead (Pb)	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)	mg/L	<0.0050	<0.0050	N/A	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)	mg/L	1.12	1.09	3%	<0.10	<0.10	<0.10	<0.10
Manganese (Mn)	mg/L	0.00204	0.0024	16%	<0.00030	<0.00030	<0.00030	<0.00030
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	N/A	<0.000020	<0.000020	<0.000020	<0.000020
Molybdenum (Mo)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Potassium (K)	mg/L	<2.0	<2.0	N/A	<2.0	<2.0	<2.0	<2.0
Selenium (Se)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Silver (Ag)	mg/L	<0.000020	<0.000020	N/A	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)	mg/L	4	3.8	5%	<2.0	<2.0	<2.0	<2.0
Thallium (Tl)	mg/L	<0.00020	<0.00020	N/A	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)	mg/L	<0.010	<0.010	N/A	<0.010	<0.010	<0.010	<0.010
Uranium (U)	mg/L	<0.00020	<0.00020	N/A	<0.00020	<0.00020	<0.00020	<0.00020
Vanadium (V)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	mg/L	<0.0050	<0.0050	N/A	<0.0050	<0.0050	<0.0050	<0.0050

Table I-2
Quality Assurance/Quality Control (QA/QC) Results for Stream Samples Collected in June 2008 (continued)

Sample ID	Units	ML-MR	E2-1	RPD	E9-8	E8-7	E4-3	E3-2
Date Sampled		21-JUN-08	22-JUN-08		21-JUN-08	21-JUN-08	21-JUN-08	21-JUN-08
Time Sampled		00:00	12:45		00:00	00:00	00:00	00:00
ALS Sample ID		L647662-1	L647663-1		L647664-1	L647664-2	L647664-3	L647664-4
Sample Notes			Field Dup ML-MR		Trip Blank	Trip Blank	Field Blank	Field Blank
GPS Coordinates		530714, 6989630	530714, 6989630					
Dissolved Metals (ICP-MS)								
Aluminum (Al)	mg/L	<0.0050	<0.0050	N/A	<0.0050	<0.0050	<0.0050	<0.0050
Antimony (Sb)	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)	mg/L	<0.020	<0.020	N/A	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)	mg/L	<0.10	<0.10	N/A	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)	mg/L	0.000065	0.000164	86%	<0.000017	<0.000017	<0.000017	<0.000017
Calcium (Ca)	mg/L	7.76	7.1	9%	<0.10	<0.10	<0.10	<0.10
Chromium (Cr)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)	mg/L	<0.00030	<0.00030	N/A	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)	mg/L	<0.0010	0.0011	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Iron (Fe)	mg/L	<0.030	<0.030	N/A	<0.030	<0.030	<0.030	<0.030
Lead (Pb)	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)	mg/L	<0.0050	<0.0050	N/A	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)	mg/L	1.13	1.09	4%	<0.10	<0.10	<0.10	<0.10
Manganese (Mn)	mg/L	0.00283	0.00272	4%	<0.00030	<0.00030	<0.00030	<0.00030
Mercury (Hg)-Dissolved	mg/L	<0.000020	<0.000020	N/A	<0.000020	<0.000020	<0.000020	<0.000020
Molybdenum (Mo)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Potassium (K)	mg/L	<2.0	<2.0	N/A	<2.0	<2.0	<2.0	<2.0
Selenium (Se)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Silver (Ag)	mg/L	<0.000020	<0.000020	N/A	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)	mg/L	3.9	3.8	3%	<2.0	<2.0	<2.0	<2.0
Thallium (Tl)	mg/L	<0.00020	<0.00020	N/A	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)	mg/L	<0.010	<0.010	N/A	<0.010	<0.010	<0.010	<0.010
Uranium (U)	mg/L	<0.00020	<0.00020	N/A	<0.00020	<0.00020	<0.00020	<0.00020
Vanadium (V)	mg/L	<0.0010	<0.0010	N/A	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	mg/L	<0.0050	<0.0050	N/A	<0.0050	<0.0050	<0.0050	<0.0050
Plant Pigments								
Chlorophyll a	µg/L	0.355	0.291	20%	-	-	-	-

Notes: °C = degrees Celsius; µS/cm = microSiemens per centimetre; % = percent; mg/L = milligrams per litre; µg/L = micrograms per litre; < = less than; - = no data available.

RPD = relative percent difference; N/A = not applicable.

Table I-3
Water Quality Data for Streams in the Meliadine West Gold Project, July 2008

Sample ID	Units	Guidelines		B7-6	B5-4	A8-7	ML-MR	NEW-1
Date Sampled				13-JUL-08	14-JUL-08	14-JUL-08	19-JUL-08	20-JUL-08
Time Sampled				08:00	09:40	13:51	12:30	09:30
ALS Sample ID				L656419-11	L656997-8	L656997-7	L658705-6	L658705-7
Sample Notes								
GPS Coordinates				0537905, 6989335	538395, 6987778	0540750, 6986687	0530712, 6989681	0546505, 6987540
		CWQG ^(a)	GCDWQ ^(b)					
Field Measurements								
Water Temperature	°C			16.72	14.01	16.70	12.7	12.8
Dissolved Oxygen	mg/L	5.5-9.5 ^(c)		11.66	11.63	10.97	16.03	12.34
Conductivity	µS/cm			116	89	109	63	137
pH	pH	6.5-9.0	6.5-8.5 ^(d)	7.02	6.86	6.53	6.78	6.95
Physical Tests								
Total Suspended Solids (TSS)	mg/L			<3	3	<3	<3	<3
Total Dissolved Solids (TDS)	mg/L		≤500 ^(d)	78	62	82	40	99
Anions and Nutrients								
Alkalinity, Total (as CaCO ₃)	mg/L			26	28	27	16	39
Bicarbonate (HCO ₃)	mg/L			31	34	33	19	47
Carbonate (CO ₃)	mg/L			<5	<5	<5	<5	<5
Hydroxide (OH)	mg/L			<5	<5	<5	<5	<5
Ammonia-N	mg/L	0.6136-5.856 ^(e)		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride (Cl)	mg/L		≤250 ^(d)	14	7	17	5	18
Conductivity (EC)	µS/cm			106	86.2	118	64.2	151
Hardness (as CaCO ₃)	mg/L			42	35	49	20	47
Ion Balance	%			99	Low EC	106	Low EC	106
Nitrate+Nitrite-N	mg/L			<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate-N	mg/L	2.9 ^(f)	10	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite-N	mg/L	0.06	3.2	<0.05	<0.05	<0.05	<0.05	<0.05
Total Kjeldahl Nitrogen	mg/L			0.4	0.3	0.4	<0.2	0.4
pH	pH	6.5-9.0	6.5-8.5 ^(d)	7.6	7.6	7.6	7.5	7.6
Orthophosphate (PO ₄ -P)	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001
Phosphorus, Total	mg/L			0.009	0.008	0.007	0.004	0.009
Phosphorus, Total Dissolved	mg/L			0.004	0.003	0.004	0.002	0.004
Sulfate (SO ₄)	mg/L		≤500 ^(d)	2.9	2.6	2.1	2.8	4.4
TDS (Calculated)	mg/L		≤500 ^(d)	51	43	58	30	75
Cyanides								
Cyanide, Total	mg/L	0.005 ^(g)	0.2	<0.002	<0.002	<0.002	<0.002	<0.002
Organic / Inorganic Carbon								
Dissolved Organic Carbon	mg/L			5	4.1	4	2.8	8.4
Total Carbon	mg/L			11	10	10	6	17
Total Inorganic Carbon (Calculated)	mg/L			6	6	6	3	8
Total Organic Carbon	mg/L			5	4	4	3	9

Table I-3
Water Quality Data for Streams in the Meliadine West Gold Project, July 2008 (continued)

Sample ID	Units	Guidelines		B7-6	B5-4	A8-7	ML-MR	NEW-1
Date Sampled				13-JUL-08	14-JUL-08	14-JUL-08	19-JUL-08	20-JUL-08
Time Sampled				08:00	09:40	13:51	12:30	09:30
ALS Sample ID				L656419-11	L656997-8	L656997-7	L658705-6	L658705-7
Sample Notes								
GPS Coordinates				0537905, 6989335	538395, 6987778	0540750, 6986687	0530712, 6989681	0546505, 6987540
		CWQG ^(a)	GCDWQ ^(b)					
Total Metals (ICP-MS)								
Aluminum (Al)	mg/L	0.005-0.1 ^(h)	<u>0.1/0.2 ^(d, i)</u>	0.0037	0.0039	0.0023	0.0019	0.0077
Antimony (Sb)	mg/L		<u>0.006</u>	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Arsenic (As)	mg/L	0.005	<u>0.010</u>	0.00162	0.00164	0.003	0.00022	0.00165
Barium (Ba)	mg/L		<u>1</u>	0.013	0.0105	0.0143	0.00689	0.0111
Beryllium (Be)	mg/L			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron (B)	mg/L		<u>5</u>	0.002	0.002	0.002	0.003	0.008
Cadmium (Cd)	mg/L	0.000017 ^(f, i)	<u>0.005</u>	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Calcium (Ca)	mg/L			14.0	10.9	15.3	5.97	13.7
Chromium (Cr)	mg/L	0.0089 ^{Cr3+}/0.001 ^{Cr6+}	<u>0.05</u>	<0.00006	<0.00006	0.00026	<0.00006	0.00017
Cobalt (Co)	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	0.0002
Copper (Cu)	mg/L	0.002 - 0.004 ^(k)	<u>≤1.0 ^(d)</u>	0.0008	0.0006	0.0009	0.0007	0.0014
Iron (Fe)	mg/L	0.3	<u>≤0.3 ^(d)</u>	0.122	0.143	0.138	0.01	0.587
Lead (Pb)	mg/L	0.001 - 0.007 ^(l)	<u>0.01</u>	<0.00005	<0.00005	0.0001	<0.00005	<0.00005
Magnesium (Mg)	mg/L			1.39	1.35	1.8	0.865	2.27
Manganese (Mn)	mg/L		<u>≤0.05 ^(d)</u>	0.0072	0.0177	0.0241	0.0018	0.0099
Mercury (Hg)-Total	mg/L	0.000026	<u>0.001</u>	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Molybdenum (Mo)	mg/L	0.073 ^(f)		0.00013	0.00012	0.00016	<0.00006	0.00025
Nickel (Ni)	mg/L	0.025 - 0.150 ^(m)		0.00066	0.00045	0.00051	0.0003	0.00183
Potassium (K)	mg/L			0.89	0.71	0.95	0.76	1.03
Selenium (Se)	mg/L	0.001	<u>0.01</u>	0.0002	<0.0001	0.0002	<0.0001	0.0002
Silver (Ag)	mg/L	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)	mg/L		<u>≤200 ^(d)</u>	2.14	2.59	2.6	3.22	9.69
Strontium (Sr)	mg/L			0.0818	0.051	0.0837	0.028	0.0702
Thallium (Tl)	mg/L	0.0008		<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Uranium (U)	mg/L		<u>0.02</u>	<0.00005	<0.00005	<0.00005	<0.00005	0.00006
Vanadium (V)	mg/L			0.00017	0.00011	0.00019	0.00011	0.0004
Zinc (Zn)	mg/L	0.030	<u>≤5.0 ^(d)</u>	<0.0008	<0.0008	0.0028	<0.0008	<0.0008

Table I-3
Water Quality Data for Streams in the Meliadine West Gold Project, July 2008 (continued)

Sample ID	Units	Guidelines		B7-6	B5-4	A8-7	ML-MR	NEW-1
Date Sampled				13-JUL-08	14-JUL-08	14-JUL-08	19-JUL-08	20-JUL-08
Time Sampled				08:00	09:40	13:51	12:30	09:30
ALS Sample ID				L656419-11	L656997-8	L656997-7	L658705-6	L658705-7
Sample Notes								
GPS Coordinates				0537905, 6989335	538395, 6987778	0540750, 6986687	0530712, 6989681	0546505, 6987540
		CWQG ^(a)	GCDWQ ^(b)					
Dissolved Metals (ICP-MS)								
Aluminum (Al)	mg/L	0.005-0.1 ^(h)	<u>0.1 / 0.2 ^(d, i)</u>	0.0023	0.0019	0.0014	0.0016	0.0037
Antimony (Sb)	mg/L		<u>0.006</u>	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Arsenic (As)	mg/L	0.005	<u>0.010</u>	0.00144	0.00121	0.00224	0.0002	0.00141
Barium (Ba)	mg/L		<u>1</u>	0.0126	0.0101	0.0134	0.00691	0.0108
Beryllium (Be)	mg/L			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron (B)	mg/L		<u>5</u>	0.002	0.002	0.002	0.003	0.009
Cadmium (Cd)	mg/L	0.000017 ^(f, i)	<u>0.005</u>	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Calcium (Ca)	mg/L			14.1	10.9	15.4	5.96	13.8
Chromium (Cr)	mg/L	0.0089 ^{Cr3+} / 0.001 ^{Cr6+}	<u>0.05</u>	<0.00006	<0.00006	<0.00006	<0.00006	0.00015
Cobalt (Co)	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	0.0002
Copper (Cu)	mg/L	0.002 - 0.004 ^(k)	<u>≤1.0 ^(d)</u>	0.0008	0.0007	0.0007	<0.0006	0.0013
Iron (Fe)	mg/L	0.3	<u>≤0.3 ^(d)</u>	0.059	0.05	0.044	<0.005	0.269
Lead (Pb)	mg/L	0.001 - 0.007 ^(l)	<u>0.01</u>	0.00005	0.00009	0.00005	<0.00005	<0.00005
Magnesium (Mg)	mg/L			1.42	1.36	1.79	0.853	2.23
Manganese (Mn)	mg/L		<u>≤0.05 ^(d)</u>	0.0046	0.007	0.0079	0.0011	0.0087
Mercury (Hg)-Dissolved	mg/L	0.000026	<u>0.001</u>	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Molybdenum (Mo)	mg/L	0.073 ⁽ⁿ⁾		0.00013	0.00011	0.00015	0.00007	0.00025
Nickel (Ni)	mg/L	0.025 - 0.150 ^(m)		0.00068	0.00048	0.00052	0.00032	0.0018
Potassium (K)	mg/L			0.91	0.71	0.93	0.75	1.04
Selenium (Se)	mg/L	0.001	<u>0.01</u>	0.0002	<0.0001	0.0001	<0.0001	0.0002
Silver (Ag)	mg/L	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)	mg/L		<u>≤200 ^(d)</u>	2.21	2.61	2.61	3.2	9.51
Strontium (Sr)	mg/L			0.0829	0.0509	0.0822	0.028	0.0699
Thallium (Tl)	mg/L	0.0008		<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Uranium (U)	mg/L		<u>0.02</u>	<0.00005	<0.00005	<0.00005	<0.00005	0.00006
Vanadium (V)	mg/L			0.00014	0.0001	0.00015	0.0001	0.00038
Zinc (Zn)	mg/L	0.03	<u>≤5.0 ^(d)</u>	0.0012	0.0015	0.0015	<0.0008	<0.0008
Plant Pigments								
Chlorophyll a	µg/L			9	17	17	<1	<1

Notes: Bold values are equal to or greater than the CWQG guideline.

Underlined values are equal to or greater than the GCDWG guideline.

Italicized values indicate the detection limit equals or exceeds the guideline.

(a) = CWQG = Canadian Water Quality Guidelines for the Protection of Aquatic Life - Freshwater (CCME 2007).

(b) = GCDWQ = Guidelines for Canadian Drinking Water Quality (Health Canada; May 2008).

(c) = Dissolved oxygen for warm water biota: early life stages = 6 mg/L, other life stages = 5.5 mg/L; for cold water biota: early life stages = 9.5 mg/L, other life stages = 6.5 mg/L.

(d) = Aesthetic objective.

(e) = Ammonia guideline is pH and temperature dependent; at pH 7.5, WQG for total ammonia (expressed as mg/L total ammonia-N) ranges from 0.6136 mg/L at 30°C to 5.856 mg/L at 0°C.

(f) = Interim guideline.

(g) = Guideline is for free CN

(h) = Aluminum guideline is pH dependent: 0.005 mg/L at pH < 6.5, 0.1 mg/L at pH ≥ 6.5

(i) = This is an operational guidance value, designed to apply only to drinking water treatment plants using aluminum-based coagulants. The operational guideline values of 0.1 mg/L applies to conventional treatment plants and 0.2 mg/L applies to other types of treatment systems.

(j) = Cadmium guideline is hardness dependent: $10^{(0.86[\log(\text{hardness})] - 3.2)}$, the WQG listed is based on a hardness of 48.5 mg/L as CaCO₃.

(k) = Copper guideline is hardness dependent; 0.002 mg/L at CaCO₃ of 0-120 mg/L; 0.003 mg/L at CaCO₃ of 120-180 mg/L; 0.004 mg/L at CaCO₃ of >180 mg/L

(l) = Lead guideline is hardness dependent; 0.001 mg/L at CaCO₃ of 0-60 mg/L; 0.002 mg/L at CaCO₃ of 60-120 mg/L; 0.004 mg/L at CaCO₃ of 120-180 mg/L; 0.007 mg/L at CaCO₃ of >180 mg/L

(m) = Nickel guideline is hardness dependent: 0.025 mg/L at CaCO₃ of 0-60 mg/L; 0.065 mg/L at CaCO₃ of 60-120 mg/L; 0.110 mg/L at CaCO₃ of 120-180 mg/L; 0.150 mg/L at CaCO₃ of >180 mg/L

°C = degrees Celsius; µS/cm = microSiemens per centimetre; % = percent; mg/L = milligrams per litre; µg/L = micrograms per litre; < = less than; - = no data available.

Table I-4
Quality Assurance/Quality Control (QA/QC) Results for Stream Samples Collected in July 2008

Sample ID	Units	B7-6	E2-1	RPD	E9-8	E4-3
Date Sampled		13-JUL-08	13-JUL-08		20-JUL-08	13-JUL-08
Time Sampled		08:00	08:00		18:00	08:00
ALS Sample ID		L656419-11	L656419-12		L658705-8	L656419-13
Sample Notes		Stream Sample	Field Dup B7-6		Trip Blank	Field Blank
GPS Coordinates		0537905, 6989335	0537905, 6989335			
Field Measurements						
Water Temperature	°C	16.72	16.72	0%	-	-
Dissolved Oxygen	mg/L	11.66	11.66	0%	-	-
Conductivity	µS/cm	116	116	0%	-	-
pH	pH	7.02	7.02	0%	-	-
Physical Tests						
Total Suspended Solids (TSS)	mg/L	<3	<3	N/A	<3	<3
Total Dissolved Solids (TDS)	mg/L	78	74	5%	<5	<5
Anions and Nutrients						
Alkalinity, Total (as CaCO ₃)	mg/L	26	26	0%	<5	<5
Bicarbonate (HCO ₃)	mg/L	31	31	0%	<5	<5
Carbonate (CO ₃)	mg/L	<5	<5	N/A	<5	<5
Hydroxide (OH)	mg/L	<5	<5	N/A	<5	<5
Ammonia-N	mg/L	<0.05	<0.05	N/A	<0.05	<0.05
Bromide (Br)	mg/L	-	-	-	-	-
Chloride (Cl)	mg/L	14	14	0%	<1	<1
Conductivity (EC)	µS/cm	106	106	0%	3.9	3.1
Fluoride (F)	mg/L	-	-	-	-	-
Hardness (as CaCO ₃)	mg/L	42	43	2%	<1	<1
Ion Balance	%	99	104	5%	Low TDS	Low TDS
Nitrate+Nitrite-N	mg/L	<0.1	<0.1	N/A	<0.1	<0.1
Nitrate-N	mg/L	<0.1	<0.1	N/A	<0.1	<0.1
Nitrite-N	mg/L	<0.05	<0.05	N/A	<0.05	<0.05
Total Kjeldahl Nitrogen	mg/L	0.4	0.4	0%	<0.2	<0.2
pH	pH	7.6	7.6	0%	5.7	5.7
Orthophosphate (PO4-P)	mg/L	<0.001	<0.001	N/A	<0.001	<0.001
Phosphorus, Total	mg/L	0.009	0.009	0%	<0.001	<0.001
Phosphorus, Total Dissolved	mg/L	0.004	0.008	67%	<0.001	0.027
Sulfate (SO ₄)	mg/L	2.9	3	3%	<0.5	<0.5
TDS (Calculated)	mg/L	51	53	4%	<1	<1
Cyanides						
Cyanide, Total	mg/L	<0.002	<0.002	N/A	<0.002	<0.002
Organic / Inorganic Carbon						
Dissolved Organic Carbon	mg/L	5	5.1	2%	0.5	<0.5
Total Carbon	mg/L	11	11	0%	<1	<1
Total Inorganic Carbon (Calculated)	mg/L	6	6	0%	<1	<1
Total Organic Carbon	mg/L	5	5	0%	<1	<1

Table I-4
Quality Assurance/Quality Control (QA/QC) Results for Stream Samples Collected in July 2008 (continued)

Sample ID	Units	B7-6	E2-1	RPD	E9-8	E4-3
Date Sampled		13-JUL-08	13-JUL-08		20-JUL-08	13-JUL-08
Time Sampled		08:00	08:00		18:00	08:00
ALS Sample ID		L656419-11	L656419-12		L658705-8	L656419-13
Sample Notes		Stream Sample	Field Dup B7-6		Trip Blank	Field Blank
GPS Coordinates		0537905, 6989335	0537905, 6989335			
Total Metals (ICP-MS)						
Aluminum (Al)	mg/L	0.0037	0.0038	3%	<0.0003	<0.0003
Antimony (Sb)	mg/L	<0.00003	<0.00003	N/A	<0.00003	<0.00003
Arsenic (As)	mg/L	0.00162	0.00166	2%	<0.00003	<0.00003
Barium (Ba)	mg/L	0.013	0.0129	1%	<0.00005	<0.00005
Beryllium (Be)	mg/L	<0.0002	<0.0002	N/A	<0.0002	<0.0002
Boron (B)	mg/L	0.002	0.002	0%	<0.001	<0.001
Cadmium (Cd)	mg/L	<0.00005	<0.00005	N/A	<0.00005	<0.00005
Calcium (Ca)	mg/L	14.0	14.1	1%	<0.02	<0.02
Chromium (Cr)	mg/L	<0.00006	<0.00006	N/A	<0.00006	<0.00006
Cobalt (Co)	mg/L	<0.0001	<0.0001	N/A	<0.0001	<0.0001
Copper (Cu)	mg/L	0.0008	0.0008	0%	<0.0006	<0.0006
Iron (Fe)	mg/L	0.122	0.124	2%	<0.005	<0.005
Lead (Pb)	mg/L	<0.00005	<0.00005	N/A	<0.00005	<0.00005
Lithium (Li)	mg/L	-	-	-	-	-
Magnesium (Mg)	mg/L	1.39	1.41	1%	<0.004	<0.004
Manganese (Mn)	mg/L	0.0072	0.0076	5%	<0.0001	<0.0001
Mercury (Hg)-Total	mg/L	<0.00002	<0.00002	N/A	<0.00002	<0.00002
Molybdenum (Mo)	mg/L	0.00013	0.00012	8%	<0.00006	<0.00006
Nickel (Ni)	mg/L	0.00066	0.00063	5%	<0.00006	<0.00006
Potassium (K)	mg/L	0.89	0.91	2%	<0.02	<0.02
Selenium (Se)	mg/L	0.0002	0.0002	0%	<0.0001	<0.0001
Silver (Ag)	mg/L	<0.0001	<0.0001	N/A	<0.0001	<0.0001
Sodium (Na)	mg/L	2.14	2.19	2%	<0.005	<0.005
Strontium (Sr)	mg/L	0.0818	0.0824	1%	<0.0001	<0.0001
Uranium (U)	mg/L	<0.00005	<0.00005	N/A	<0.00005	<0.00005
Vanadium (V)	mg/L	0.00017	0.00017	0%	<0.00005	<0.00005
Zinc (Zn)	mg/L	<0.0008	<0.0008	N/A	<0.0008	<0.0008

Table I-4
Quality Assurance/Quality Control (QA/QC) Results for Stream Samples Collected in July 2008 (continued)

Sample ID	Units	B7-6	E2-1	RPD	E9-8	E4-3
Date Sampled		13-JUL-08	13-JUL-08		20-JUL-08	13-JUL-08
Time Sampled		08:00	08:00		18:00	08:00
ALS Sample ID		L656419-11	L656419-12		L658705-8	L656419-13
Sample Notes		Stream Sample	Field Dup B7-6		Trip Blank	Field Blank
GPS Coordinates		0537905, 6989335	0537905, 6989335			
Dissolved Metals (ICP-MS)						
Aluminum (Al)	mg/L	0.0023	0.0021	9%	<0.0003	<0.0003
Antimony (Sb)	mg/L	<0.00003	<0.00003	N/A	<0.00003	<0.00003
Arsenic (As)	mg/L	0.00144	0.00142	1%	<0.00003	<0.00003
Barium (Ba)	mg/L	0.0126	0.0128	2%	<0.00005	<0.00005
Beryllium (Be)	mg/L	<0.0002	<0.0002	N/A	<0.0002	<0.0002
Boron (B)	mg/L	0.002	0.002	0%	<0.001	<0.001
Cadmium (Cd)	mg/L	<0.00005	<0.00005	N/A	<0.00005	<0.00005
Calcium (Ca)	mg/L	14.1	14.1	0%	<0.02	<0.02
Chromium (Cr)	mg/L	<0.00006	<0.00006	N/A	<0.00006	<0.00006
Cobalt (Co)	mg/L	<0.0001	<0.0001	N/A	<0.0001	<0.0001
Copper (Cu)	mg/L	0.0008	0.0008	0%	<0.0006	<0.0006
Iron (Fe)	mg/L	0.059	0.061	3%	<0.005	<0.005
Lead (Pb)	mg/L	0.00005	<0.00005	N/A	<0.00005	<0.00005
Magnesium (Mg)	mg/L	1.42	1.41	1%	<0.004	<0.004
Manganese (Mn)	mg/L	0.0046	0.0046	0%	<0.0001	<0.0001
Mercury (Hg)-Dissolved	mg/L	<0.00002	<0.00002	N/A	<0.00002	<0.00002
Molybdenum (Mo)	mg/L	0.00013	0.00011	17%	<0.00006	<0.00006
Nickel (Ni)	mg/L	0.00068	0.00063	8%	<0.00006	<0.00006
Potassium (K)	mg/L	0.91	0.90	1%	<0.02	<0.02
Selenium (Se)	mg/L	0.0002	0.0002	0%	<0.0001	<0.0001
Silver (Ag)	mg/L	<0.0001	<0.0001	N/A	<0.0001	<0.0001
Sodium (Na)	mg/L	2.21	2.19	1%	<0.005	<0.005
Strontium (Sr)	mg/L	0.0829	0.0810	2%	<0.0001	<0.0001
Thallium (Tl)	mg/L	<0.00003	<0.00003		<0.00003	<0.00003
Uranium (U)	mg/L	<0.00005	<0.00005	N/A	<0.00005	<0.00005
Vanadium (V)	mg/L	0.00014	0.00012	15%	<0.00005	<0.00005
Zinc (Zn)	mg/L	0.0012	<0.0008	40%	<0.0008	<0.0008
Plant Pigments						
Chlorophyll a	µg/L	9	4	77%	<1	12

Notes: Non-detect values were assumed to be equal to the detection limit when calculating RPD.

RPD = relative percent difference; °C = degrees Celsius; µS/cm = microSiemens per centimetre; % = percent; mg/L = milligrams per litre; µg/L = micrograms per litre; < = less than;

- = no data available; N/A = not applicable.

APPENDIX II

WATER QUALITY DATA FOR LAKES IN THE MELIADINE WEST GOLD PROJECT AREA

Table II-1
Water Quality Data for Lakes in the Meliadine West Gold Project, July 2008

Sample ID	Units	Guidelines		A8	A54	B5	B6	B7	BOOT-1	BOOT-2	DI1	DI4	ML-E	ML-SE	ML-W	CONTROL
Date Sampled				14-JUL-08	15-JUL-08	14-JUL-08	12-JUL-08	12-JUL-08	15-JUL-08	16-JUL-08	20-JUL-08	20-JUL-08	17-JUL-08	18-JUL-08	19-JUL-08	18-JUL-08
Time Sampled				16:00	13:00	08:00	14:00	08:45	14:45	10:30	15:25	11:10	08:15	14:20	14:00	09:07
ALS Sample ID				L656997-2	L656997-3	L656997-1	L656419-8	L656419-7	L656997-5	L658105-1	L658705-5	L658705-4	L658105-2	L658705-2	L658705-3	L658705-1
Sample Notes																
GPS Coordinates				0540181, 6987142	0540180, 6988827	0538281, 6988153	0537758, 6989218	0537811, 6989603	0541166, 6989336	0542070, 6989338	0554523, 6980718	0548241, 6983893	0543184, 6987869	0535824, 6986364	0525618, 7000852	0534632, 6986546
		CWQG ^(a)	GCDWQ ^(b)													
Field Measurements																
Water Temperature	°C			14.14	13.80	13.82	15.41	14.83	13.16	11.28	14.88	14.90	11.11	14.51	11.00	14.12
Dissolved Oxygen	mg/L	5.5-9.5 ^(c)		11.87	12.86	11.53	12.23	11.52	13.23	13.32	12.13	12.51	13.19	12.30	15.07	12.47
Conductivity	µS/cm			101	895	86	112	108	71	49	59	71	50	69	58	64
pH	pH	6.5-9.0	6.5-8.5 ^(d)	7.80	6.94	6.94	7.33	7.28	6.97	7.17	-	6.77	6.94	-	6.78	-
Secchi Disk Depth	m			3	0.8	2.7	4	4.2	1.8	6.3	1.9	2.3	3	1.5	5.5	1.2
Total Lake Depth	m			3	0.8	3	4	4.6	1.8	10.1	1.9	2.3	6.1	3	5.5	2.9
Physical Tests																
Total Suspended Solids (TSS)	mg/L			17	5	3	<3	3	<3	<3	<3	<3	<3	<3	<3	<3
Total Dissolved Solids (TDS)	mg/L		≤500 ^(d)	83	696	49	69	75	29	38	36	46	37	51	40	46
Anions and Nutrients																
Alkalinity, Total (as CaCO3)	mg/L			28	47	28	27	26	12	12	13	16	13	23	13	22
Bicarbonate (HCO3)	mg/L			34	57	34	33	32	15	14	16	19	15	28	16	26
Carbonate (CO3)	mg/L			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Hydroxide (OH)	mg/L			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ammonia-N	mg/L	0.6136-5.856 ^(e)		<0.05	1.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide (Br)	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride (Cl)	mg/L		≤250 ^(d)	16	214	7	12	13	7	6	3	7	6	6	5	6
Conductivity (EC)	µS/cm			117	944	85.3	105	103	58.6	56.6	51.1	71.8	56.9	75.5	61.3	68.2
Fluoride (F)	mg/L		1.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L			49	337	36	42	43	19	17	17	21	18	25	17	22
Ion Balance	%			107	103	Low EC	106	104	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC	Low EC
Nitrate+Nitrite-N	mg/L			<0.1	5.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate-N	mg/L	2.9 ^(f)	10	<0.1	4.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite-N	mg/L	0.06	3.2	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Kjeldahl Nitrogen	mg/L			0.2	2.2	0.2	0.4	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3
pH	pH	6.5-9.0	6.5-8.5(d)	7.7	8.0	7.6	7.6	7.6	7.4	7.4	7.4	7.5	7.4	7.6	7.5	7.5
Orthophosphate (PO4-P)	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Phosphorus, Total	mg/L			0.005	0.009	0.009	0.008	0.013	0.003	0.004	0.004	0.005	0.004	0.006	0.004	0.009
Phosphorus, Total Dissolved	mg/L			0.003	0.004	0.003	0.004	0.004	0.003	0.002	0.002	0.003	0.002	0.003	0.002	0.003
Sulfate (SO4)	mg/L		≤500 ^(d)	2.1	39.9	2.6	3	4.1	2.9	2.8	2.8	3.5	2.9	2.8	2.9	2.2
TDS (Calculated)	mg/L		≤500 ^(d)	57	469	43	51	53	29	27	24	34	28	37	27	35
Cyanides																
Cyanide, Total	mg/L	0.005 ^(g)	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Organic / Inorganic Carbon																
Dissolved Organic Carbon	mg/L			3.6	9.5	4.3	4.9	4.5	3.3	3.2	3.8	3.9	3.3	3.2	2.9	3.7
Total Carbon	mg/L			9	20	10	11	11	6	5	7	7	5	8	5	8
Total Inorganic Carbon	mg/L			-	-	-	-	-	-	3	-	-	3	-	-	-
Total Inorganic Carbon (Calculated)	mg/L			5	10	6	6	5	3	2	3	4	2	4	2	4
Total Organic Carbon	mg/L			4	10	4	5	6	3	3	4	3	3	4	3	4
Total Metals (ICP-MS)																
Aluminum (Al)	mg/L	0.005-0.1 ^(h)	0.1/0.2 ^(d,i)	0.0018	0.0024	0.0037	0.0029	0.0015	0.003	0.0028	0.0038	0.0056	0.0022	0.0029	0.0016	0.0036
Antimony (Sb)	mg/L		0.006	<0.00003	0.0002	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Arsenic (As)	mg/L	0.005	0.010	0.00207	0.0009	0.00153	0.00115	0.0012	0.00026	0.00026	0.00052	0.00088	0.00025	0.00038	0.00017	0.00039
Barium (Ba)	mg/L		1	0.0128	0.0618	0.0104	0.0132	0.0116	0.0059	0.00594	0.00613	0.00651	0.00602	0.00735	0.00659	0.00691
Beryllium (Be)	mg/L			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron (B)	mg/L		5	0.002	0.006	0.002	0.002	0.002	0.003	0.003	0.002	0.004	0.003	0.003	0.003	0.004
Cadmium (Cd)	mg/L	0.000017 ^(f,i)	0.005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Calcium (Ca)	mg/L			15.4	90.9	10.9	13.9	12.8	5.18	4.88	5.07	6.38	4.98	7.54	5.13	7.19
Chromium (Cr)	mg/L	0.0089 ^{Cr3+} / 0.001 ^{Cr6+}	0.05	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006
Cobalt (Co)	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Table II-1
Water Quality Data for Lakes in the Meliadine West Gold Project, July 2008 (continued)

Sample ID	Units	Guidelines		A8	A54	B5	B6	B7	BOOT-1	BOOT-2	DI1	DI4	ML-E	ML-SE	ML-W	CONTROL
Date Sampled				14-JUL-08	15-JUL-08	14-JUL-08	12-JUL-08	12-JUL-08	15-JUL-08	16-JUL-08	20-JUL-08	20-JUL-08	17-JUL-08	18-JUL-08	19-JUL-08	18-JUL-08
Time Sampled				16:00	13:00	08:00	14:00	08:45	14:45	10:30	15:25	11:10	08:15	14:20	14:00	09:07
ALS Sample ID				L656997-2	L656997-3	L656997-1	L656419-8	L656419-7	L656997-5	L658105-1	L658705-5	L658705-4	L658105-2	L658705-2	L658705-3	L658705-1
Sample Notes																
GPS Coordinates				0540181, 6987142	0540180, 6988827	0538281, 6988153	0537758, 6989218	0537811, 6989603	0541166, 6989336	0542070, 6989338	0554523, 6980718	0548241, 6983893	0543184, 6987869	0535824, 6986364	0525618, 7000852	0534632, 6986546
		CWQG ^(a)	GCDWQ ^(b)													
Copper (Cu)	mg/L	0.002 - 0.004 ^(k)	≤1.0 ^(d)	0.0017	0.0010	0.0012	0.0012	0.0027	0.0015	0.0007	0.0018	0.0013	0.0010	0.0018	0.0007	0.0008
Iron (Fe)	mg/L	0.3	≤0.3 ^(d)	0.072	0.022	0.118	0.083	0.064	0.023	0.017	0.046	0.061	0.014	0.033	0.006	0.024
Lead (Pb)	mg/L	0.001 - 0.007 ^(l)	0.01	0.00006	0.00006	<0.00005	0.0001	<0.00005	<0.00005	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00016	<0.00005
Lithium (Li)	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	mg/L			1.82	13.9	1.32	1.46	1.29	0.814	0.782	0.728	0.913	0.804	0.922	0.775	0.778
Manganese (Mn)	mg/L		≤0.05 ^(d)	0.0069	0.0017	0.0112	0.0072	0.004	0.0029	0.0021	0.0015	0.0034	0.0021	0.0033	0.0013	0.003
Mercury (Hg)-Total	mg/L	0.000026	0.001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Molybdenum (Mo)	mg/L	0.073 ^(f)		0.00015	0.00049	0.0001	0.00011	0.00012	0.00007	<0.00006	<0.00006	0.00013	<0.00006	0.0001	0.00006	0.00012
Nickel (Ni)	mg/L	0.025 - 0.150 ^(m)		0.00042	0.001	0.00048	0.00061	0.00056	0.0005	0.00053	0.00103	0.00073	0.00054	0.00025	0.00035	0.0004
Potassium (K)	mg/L			0.92	7.95	0.71	0.9	0.85	0.7	0.65	0.71	0.75	0.66	0.76	0.7	0.81
Selenium (Se)	mg/L	0.001	0.01	0.0003	<0.0001	0.0001	0.0002	0.0002	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Silver (Ag)	mg/L	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)	mg/L		≤200	2.54	34.2	2.58	2.46	1.99	3.44	3.07	2.14	4	3.14	3.14	2.96	3.3
Strontium (Sr)	mg/L			0.082	0.83	0.0506	0.0749	0.0752	0.0253	0.0243	0.0291	0.0341	0.0246	0.0319	0.0256	0.0245
Thallium (Tl)	mg/L	0.0008		<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Tin (Sn)	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium (Ti)	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium (U)	mg/L		0.02	<0.00005	0.00026	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Vanadium (V)	mg/L			0.00016	<0.00005	0.00011	0.00013	0.00016	0.00011	0.00009	0.00008	0.00019	0.0001	0.00012	0.0001	0.00014
Zinc (Zn)	mg/L	0.03	≤5.0 ^(d)	<0.0008	<0.0008	0.0009	<0.0008	<0.0008	<0.0008	<0.0008	0.0011	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Dissolved Metals (ICP-MS)																
Aluminum (Al)	mg/L	0.005-0.1 ^(h)	0.1 / 0.2 ^(d,i)	0.0012	0.0023	0.0022	0.002	0.0019	0.0017	0.0021	0.0024	0.0024	0.0018	0.0015	0.0017	0.0021
Antimony (Sb)	mg/L		0.006	<0.00003	0.00018	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Arsenic (As)	mg/L	0.005	0.010	0.00162	0.0007	0.00115	0.00101	0.00107	0.00026	0.00026	0.00045	0.00077	0.00025	0.00036	0.00016	0.00037
Barium (Ba)	mg/L		1	0.0124	0.0613	0.00995	0.0127	0.0123	0.00581	0.00611	0.00615	0.00634	0.00615	0.00728	0.00662	0.00668
Beryllium (Be)	mg/L			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Boron (B)	mg/L		5	0.002	0.006	0.003	0.002	0.002	0.003	0.004	0.002	0.004	0.003	0.003	0.003	0.003
Cadmium (Cd)	mg/L	0.000017 ^(f,i)	0.005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Calcium (Ca)	mg/L			14.8	90.1	10.8	13.8	13.9	5.19	5.01	5.1	6.24	4.98	7.68	5.24	7.02
Chromium (Cr)	mg/L	0.0089 Cr ³⁺ / 0.001 Cr ⁶⁺	0.05	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	0.00008	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006
Cobalt (Co)	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Copper (Cu)	mg/L	0.002 - 0.004 ^(k)	≤1.0 ^(d)	0.0007	0.001	0.001	0.0022	0.0008	0.001	0.0023	0.0012	0.001	0.0009	0.0007	0.0008	0.0008
Iron (Fe)	mg/L	0.3	≤0.3 ^(d)	0.025	<0.005	0.038	0.034	0.025	0.01	0.008	0.021	0.025	0.007	0.012	<0.005	0.009
Lead (Pb)	mg/L	0.001 - 0.007 ^(l)	0.01	0.00008	0.00005	0.00007	0.00019	0.00012	<0.00005	0.00049	<0.00005	<0.00005	0.00009	0.00007	<0.00005	0.0001
Lithium (Li)	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	mg/L			1.75	13.9	1.32	1.43	1.38	0.817	0.817	0.72	0.89	0.805	0.936	0.787	0.765
Manganese (Mn)	mg/L		≤0.05 ^(d)	0.0019	0.0008	0.0015	0.0026	0.0019	0.0022	0.0018	0.0011	0.001	0.0014	0.0009	0.0008	0.0006
Mercury (Hg)-Dissolved	mg/L	0.000026	0.001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Molybdenum (Mo)	mg/L	0.073 ^(f)		0.00014	0.0005	0.00011	0.00011	0.00012	<0.00006	0.00007	<0.00006	0.00012	0.00006	0.0001	0.00006	0.00012
Nickel (Ni)	mg/L	0.025 - 0.150 ^(m)		0.00044	0.00095	0.00046	0.00061	0.00052	0.00051	0.00079	0.00102	0.00072	0.00054	0.0003	0.00036	0.0004
Potassium (K)	mg/L			0.87	7.92	0.69	0.9	0.9	0.69	0.75	0.72	0.73	0.67	0.76	0.72	0.79
Selenium (Se)	mg/L	0.001	0.01	0.0002	<0.0001	<0.0001	0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001
Silver (Ag)	mg/L	0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)	mg/L		≤200 ^(d)	2.42	34	2.56	2.43	2.11	3.39	3.34	2.1	3.97	3.19	3.16	3.07	3.25
Strontium (Sr)	mg/L			0.0792	0.832	0.0506	0.0745	0.0818	0.026	0.0251	0.0289	0.0333	0.0249	0.0322	0.0255	0.024
Thallium (Tl)	mg/L	0.0008		<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Tin (Sn)	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium (Ti)	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium (U)	mg/L		0.02	<0.00005	0.00029	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Vanadium (V)	mg/L			0.00012	0.00008	<0.00005	<0.00005	0.00014	0.00009	<0.00005	0.00007	0.00012	0.00009	0.00013	0.0001	0.00012
Zinc (Zn)	mg/L	0.03	≤5.0 ^(d)	0.001	<0.0008	0.0046	0.0015	0.0016	<0.0008	0.0117	<0.0008	<0.0008	0.0015	0.0009	<0.0008	0.0011
Aggregate Organics																
Oil & Grease-(IR)	mg/L			0.5	0.6	0.9	-	<0.5	<0.5	<0.5	-	-	-	-	-	-
Phenols (4AAP)	mg/L	0.004		0.002	0.004	0.002	-	0.003	0.001	0.002	-	-	-	-	-	-

Table II-1
Water Quality Data for Lakes in the Meliadine West Gold Project, July 2008 (continued)

Sample ID	Units	Guidelines		A8	A54	B5	B6	B7	BOOT-1	BOOT-2	DI1	DI4	ML-E	ML-SE	ML-W	CONTROL
Date Sampled				14-JUL-08	15-JUL-08	14-JUL-08	12-JUL-08	12-JUL-08	15-JUL-08	16-JUL-08	20-JUL-08	20-JUL-08	17-JUL-08	18-JUL-08	19-JUL-08	18-JUL-08
Time Sampled				16:00	13:00	08:00	14:00	08:45	14:45	10:30	15:25	11:10	08:15	14:20	14:00	09:07
ALS Sample ID				L656997-2	L656997-3	L656997-1	L656419-8	L656419-7	L656997-5	L658105-1	L658705-5	L658705-4	L658105-2	L658705-2	L658705-3	L658705-1
Sample Notes																
GPS Coordinates				0540181, 6987142	0540180, 6988827	0538281, 6988153	0537758, 6989218	0537811, 6989603	0541166, 6989336	0542070, 6989338	0554523, 6980718	0548241, 6983893	0543184, 6987869	0535824, 6986364	0525618, 7000852	0534632, 6986546
		CWQG ^(a)	GCDWQ ^(b)													
Volatile Organic Compounds																
Benzene	mg/L	0.37	0.005	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	-	-	-	-	-	-
EthylBenzene	mg/L	0.09	≤0.0024 ^(d)	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	-	-	-	-	-	-
Toluene	mg/L	0.002	≤0.024 ^(d)	<0.00050	<0.00050	<0.00050	-	<0.00050	0.00059	<0.00050	-	-	-	-	-	-
Xylenes	mg/L		≤0.3 ^(d)	<0.00050	<0.00050	<0.00050	-	<0.00050	<0.00050	<0.00050	-	-	-	-	-	-
F1(C6-C10)	mg/L			<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	-	-	-	-
F1-BTEX	mg/L			<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	-	-	-	-
Hydrocarbons																
F2 (>C10-C16)	mg/L			<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	-	-	-	-
F3 (C16-C34)	mg/L			<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	-	-	-	-
F4 (C34-C50)	mg/L			<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	-	-	-	-
Plant Pigments																
Chlorophyll a	µg/L			13	17	6	5	5	15	<1	<1	<1	<1	<1	<1	<1

Notes: Bold values are equal to or greater than the CWQG guideline.
Underlined values are equal to or greater than the GCDWG guideline
Italized values indicate the detection limit equals or exceeds the guideline
(-): No data available
(a) = CWQG = Canadian Water Quality Guidelines for the Protection of Aquatic Life - Freshwater (CCME 2007).
(b) = GCDWQ = Guidelines for Canadian Drinking Water Quality (Health Canada, May 2008).
(c) = Dissolved oxygen for warm water biota: early life stages = 6 mg/L, other life stages = 5.5 mg/L; for cold water biota: early life stages = 9.5 mg/L, other life stages = 6.5 mg/L.
(d) = Aesthetic objective.
(e) = Ammonia guideline is pH and temperature dependent; at pH 7.5, WQG for total ammonia (expressed as mg/L total ammonia-N) ranges from 0.6136 mg/L at 30°C to 5.856 mg/L at 0°C.
(f) = Interim guideline.
(g) = Guideline is for free CN.
(h) = Aluminum guideline is pH dependent: 0.005 mg/L at pH < 6.5, 0.1 mg/L at pH ≥6.5.
(i) = This is an operational guidance value, designed to apply only to drinking water treatment plants using aluminum-based coagulants. The operational guideline values of 0.1 mg/L applies to conventional treatment plants and 0.2 mg/L applies to other types of treatment systems.
(j) = Cadmium guideline is hardness dependent: $10^{(0.86[\log(\text{hardness})] - 3.2)}$; the WQG listed is based on a hardness of 48.5 mg/L as CaCO₃
(k) = Copper guideline is hardness dependent; 0.002 mg/L at CaCO₃ of 0-120 mg/L; 0.003 mg/L at CaCO₃ of 120-180 mg/L; 0.004 mg/L at CaCO₃ of >180 mg/L
(l) = Lead guideline is hardness dependent; 0.001 mg/L at CaCO₃ of 0-60 mg/L; 0.002 mg/L at CaCO₃ of 60-120 mg/L; 0.004 mg/L at CaCO₃ of 120-180 mg/L; 0.007 mg/L at CaCO₃ of >180 mg/L
(m) = Nickel guideline is hardness dependent: 0.025 mg/L at CaCO₃ of 0-60 mg/L; 0.065 mg/L at CaCO₃ of 60-120 mg/L; 0.110 mg/L at CaCO₃ of 120-180 mg/L; 0.150 mg/L at CaCO₃ of >180 mg/L
°C = degrees Celsius; µS/cm = microSiemens per centimetre; % = percent; mg/L = milligrams per litre; µg/L = micrograms per litre; < = less than; - = no data available.

Table II-2
Quality Assurance/Quality Control (QA/QC) Results for Lake Samples Collected in July 2008

Sample ID	Units	B7	Z2-1	RPD	Z9-8	Z8-7	Z4-3	Z3-2
Date Sampled		12-JUL-08	12-JUL-08		15-JUL-08	17-JUL-08	12-JUL-08	15-JUL-08
Time Sampled		08:45	10:00		17:00	13:00	11:00	13:30
ALS Sample ID		L656419-7	L656419-9		L656997-6	L658105-3	L656419-10	L656997-4
Sample Notes		Lake Sample	Field Dup B7		Trip Blank	Trip Blank	Field Blank	Field Blank
GPS Coordinates		0537811, 6989603	0537811, 6989603		-	-	-	-
Field Measurements								
Water Temperature	°C	14.83	14.83	0%	-	-	-	-
Dissolved Oxygen	mg/L	11.52	11.52	0%	-	-	-	-
Conductivity	µS/cm	108	108	0%	-	-	-	-
pH	pH	7.28	7.28	0%	-	-	-	-
Secchi Disk Depth	m	4.2	4.2	0%	-	-	-	-
Total Lake Depth	m	4.6	4.6	0%	-	-	-	-
Physical Tests								
Total Suspended Solids	mg/L	3	<3	N/A	<3	<3	<3	<3
Total Dissolved Solids	mg/L	75	66	13%	<5	<5	<5	<5
Anions and Nutrients								
Alkalinity, Total (as CaCO3)	mg/L	26	26	0%	<5	<5	<5	<5
Bicarbonate (HCO3)	mg/L	32	31	3%	<5	<5	<5	<5
Carbonate (CO3)	mg/L	<5	<5	N/A	<5	<5	<5	<5
Hydroxide (OH)	mg/L	<5	<5	N/A	<5	<5	<5	<5
Ammonia-N	mg/L	<0.05	<0.05	N/A	<0.05	<0.05	<0.05	<0.05
Bromide (Br)	mg/L	-	-	-	-	-	-	-
Chloride (Cl)	mg/L	13	13	0%	<1	<1	<1	<1
Conductivity (EC)	uS/cm	103	103	0%	2.9	0.2	2.7	3.3
Hardness (as CaCO3)	mg/L	43	41	5%	<1	<1	<1	<1
Ion Balance	%	104	99.7	4%	Low TDS	Low TDS	Low TDS	Low TDS
Nitrate+Nitrite-N	mg/L	<0.1	<0.1	N/A	<0.1	<0.1	<0.1	<0.1
Nitrate-N	mg/L	<0.1	<0.1	N/A	<0.1	<0.1	<0.1	<0.1
Nitrite-N	mg/L	<0.05	<0.05	N/A	<0.05	<0.05	<0.05	<0.05
Total Kjeldahl Nitrogen	mg/L	0.3	0.4	29%	<0.2	<0.2	<0.2	<0.2
pH	pH	7.6	7.6	0%	5.5	5.6	5.6	5.5
Orthophosphate (PO4-P)	mg/L	<0.001	<0.001	N/A	<0.001	<0.001	<0.001	<0.001
Phosphorus, Total	mg/L	0.013	0.008	48%	<0.001	0.001	<0.001	<0.001
Phosphorus, Total Dissolved	mg/L	0.004	0.004	0%	<0.001	0.001	<0.001	<0.001
Sulfate (SO4)	mg/L	4.1	2.9	34%	<0.5	<0.5	<0.5	<0.5
TDS (Calculated)	mg/L	53	50	6%	<1	<1	<1	<1
Cyanides								
Cyanide, Total	mg/L	<0.002	<0.002	N/A	<0.002	<0.002	<0.002	<0.002

Table II-2
Quality Assurance/Quality Control (QA/QC) Results for Lake Samples Collected in July 2008 (continued)

Sample ID	Units	B7	Z2-1	RPD	Z9-8	Z8-7	Z4-3	Z3-2
Date Sampled		12-JUL-08	12-JUL-08		15-JUL-08	17-JUL-08	12-JUL-08	15-JUL-08
Time Sampled		08:45	10:00		17:00	13:00	11:00	13:30
ALS Sample ID		L656419-7	L656419-9		L656997-6	L658105-3	L656419-10	L656997-4
Sample Notes		Lake Sample	Field Dup B7		Trip Blank	Trip Blank	Field Blank	Field Blank
GPS Coordinates		0537811, 6989603	0537811, 6989603		-	-	-	-
Organic / Inorganic Carbon								
Dissolved Organic Carbon	mg/L	4.5	4.5	0%	0.9	0.7	<0.5	0.7
Total Carbon	mg/L	11	10	10%	<1	<1	<1	<1
Total Inorganic Carbon	mg/L	-	-	-	-	<1	-	-
Total Inorganic Carbon (Calculated)	mg/L	5	5	0%	<1	<1	<1	<1
Total Organic Carbon	mg/L	6	5	18%	<1	<1	<1	<1
Total Metals (ICP-MS)								
Aluminum (Al)	mg/L	0.0015	0.0019	24%	<0.0003	<0.0003	<0.0003	<0.0003
Antimony (Sb)	mg/L	<0.00003	<0.00003	N/A	<0.00003	<0.00003	<0.00003	<0.00003
Arsenic (As)	mg/L	0.0012	0.0012	0%	<0.00003	<0.00003	<0.00003	<0.00003
Barium (Ba)	mg/L	0.0116	0.0126	8%	<0.00005	<0.00005	<0.00005	<0.00005
Beryllium (Be)	mg/L	<0.0002	<0.0002	N/A	<0.0002	<0.0002	<0.0002	<0.0002
Boron (B)	mg/L	0.002	0.002	0%	<0.001	<0.001	<0.001	<0.001
Cadmium (Cd)	mg/L	<0.00005	<0.00005	N/A	<0.00005	<0.00005	<0.00005	<0.00005
Calcium (Ca)	mg/L	12.8	13.9	8%	<0.02	<0.02	<0.02	<0.02
Chromium (Cr)	mg/L	<0.00006	<0.00006	N/A	<0.00006	<0.00006	<0.00006	<0.00006
Cobalt (Co)	mg/L	<0.0001	<0.0001	N/A	<0.0001	<0.0001	<0.0001	<0.0001
Copper (Cu)	mg/L	0.0027	0.0038	34%	<0.0006	<0.0006	<0.0006	<0.0006
Iron (Fe)	mg/L	0.064	0.064	0%	<0.005	<0.005	<0.005	<0.005
Lead (Pb)	mg/L	<0.00005	<0.00005	N/A	<0.00005	<0.00005	<0.00005	<0.00005
Magnesium (Mg)	mg/L	1.29	1.41	9%	<0.004	<0.004	<0.004	<0.004
Manganese (Mn)	mg/L	0.004	0.0045	12%	<0.0001	<0.0001	<0.0001	<0.0001
Mercury (Hg)-Total	mg/L	<0.00002	<0.00002	N/A	<0.00002	<0.00002	<0.00002	<0.00002
Molybdenum (Mo)	mg/L	0.00012	0.00012	0%	<0.00006	<0.00006	<0.00006	<0.00006
Nickel (Ni)	mg/L	0.00056	0.00058	4%	<0.00006	<0.00006	<0.00006	<0.00006
Potassium (K)	mg/L	0.85	0.9	6%	<0.02	<0.02	<0.02	<0.02
Selenium (Se)	mg/L	0.0002	0.0002	0%	<0.0001	<0.0001	<0.0001	<0.0001

Table II-2
Quality Assurance/Quality Control (QA/QC) Results for Lake Samples Collected in July 2008 (continued)

Sample ID	Units	B7	Z2-1	RPD	Z9-8	Z8-7	Z4-3	Z3-2
Date Sampled		12-JUL-08	12-JUL-08		15-JUL-08	17-JUL-08	12-JUL-08	15-JUL-08
Time Sampled		08:45	10:00		17:00	13:00	11:00	13:30
ALS Sample ID		L656419-7	L656419-9		L656997-6	L658105-3	L656419-10	L656997-4
Sample Notes		Lake Sample	Field Dup B7		Trip Blank	Trip Blank	Field Blank	Field Blank
GPS Coordinates		0537811, 6989603	0537811, 6989603		-	-	-	-
Total Metals (ICP-MS) (continued)								
Silver (Ag)	mg/L	<0.0001	<0.0001	N/A	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)	mg/L	1.99	2.15	8%	<0.005	<0.005	<0.005	<0.005
Strontium (Sr)	mg/L	0.0752	0.0816	8%	<0.0001	<0.0001	<0.0001	<0.0001
Uranium (U)	mg/L	<0.00005	<0.00005	N/A	<0.00005	<0.00005	<0.00005	<0.00005
Vanadium (V)	mg/L	0.00016	0.00017	6%	<0.00005	<0.00005	<0.00005	<0.00005
Zinc (Zn)	mg/L	<0.0008	<0.0008	N/A	<0.0008	<0.0008	<0.0008	<0.0008
Dissolved Metals (ICP-MS)								
Aluminum (Al)	mg/L	0.0019	0.0016	17%	<0.0003	<0.0003	<0.0003	0.0004
Antimony (Sb)	mg/L	<0.00003	<0.00003	N/A	<0.00003	<0.00003	<0.00003	<0.00003
Arsenic (As)	mg/L	0.00107	0.00109	2%	<0.00003	<0.00003	<0.00003	<0.00003
Barium (Ba)	mg/L	0.0123	0.0116	6%	<0.00005	<0.00005	<0.00005	<0.00005
Beryllium (Be)	mg/L	<0.0002	<0.0002	N/A	<0.0002	<0.0002	<0.0002	<0.0002
Boron (B)	mg/L	0.002	0.002	0%	<0.001	<0.001	<0.001	<0.001
Cadmium (Cd)	mg/L	<0.00005	<0.00005	N/A	<0.00005	<0.00005	<0.00005	<0.00005
Calcium (Ca)	mg/L	13.9	12.7	9%	<0.02	<0.02	<0.02	<0.02
Chromium (Cr)	mg/L	<0.00006	<0.00006	N/A	<0.00006	<0.00006	<0.00006	<0.00006
Cobalt (Co)	mg/L	<0.0001	<0.0001	N/A	<0.0001	<0.0001	<0.0001	<0.0001
Copper (Cu)	mg/L	0.0008	0.0008	0%	<0.0006	<0.0006	<0.0006	<0.0006
Iron (Fe)	mg/L	0.025	0.023	8%	<0.005	<0.005	<0.005	<0.005
Lead (Pb)	mg/L	0.00012	<0.00005	N/A	<0.00005	<0.00005	<0.00005	<0.00005
Magnesium (Mg)	mg/L	1.38	1.29	7%	<0.004	<0.004	<0.004	<0.004
Manganese (Mn)	mg/L	0.0019	0.002	5%	<0.0001	<0.0001	<0.0001	<0.0001
Mercury (Hg)-Dissolved	mg/L	<0.00002	<0.00002	N/A	<0.00002	<0.00002	<0.00002	<0.00002
Molybdenum (Mo)	mg/L	0.00012	0.00012	0%	<0.00006	<0.00006	<0.00006	<0.00006
Nickel (Ni)	mg/L	0.00052	0.0006	14%	<0.00006	<0.00006	<0.00006	<0.00006
Potassium (K)	mg/L	0.9	0.83	8%	<0.02	<0.02	<0.02	<0.02
Selenium (Se)	mg/L	0.0002	0.0001	67%	<0.0001	<0.0001	<0.0001	<0.0001
Silver (Ag)	mg/L	<0.0001	<0.0001	N/A	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)	mg/L	2.11	2.01	5%	<0.005	<0.005	<0.005	<0.005
Strontium (Sr)	mg/L	0.0818	0.0767	6%	<0.0001	<0.0001	<0.0001	<0.0001

Table II-2
Quality Assurance/Quality Control (QA/QC) Results for Lake Samples Collected in July 2008 (continued)

Sample ID	Units	B7	Z2-1	RPD	Z9-8	Z8-7	Z4-3	Z3-2
Date Sampled		12-JUL-08	12-JUL-08		15-JUL-08	17-JUL-08	12-JUL-08	15-JUL-08
Time Sampled		08:45	10:00		17:00	13:00	11:00	13:30
ALS Sample ID		L656419-7	L656419-9		L656997-6	L658105-3	L656419-10	L656997-4
Sample Notes		Lake Sample	Field Dup B7		Trip Blank	Trip Blank	Field Blank	Field Blank
GPS Coordinates		0537811, 6989603	0537811, 6989603		-	-	-	-
Dissolved Metals (ICP-MS) (continued)								
Thallium (Tl)	mg/L	<0.00003	<0.00003		<0.00003	<0.00003	<0.00003	<0.00003
Uranium (U)	mg/L	<0.00005	<0.00005	N/A	<0.00005	<0.00005	<0.00005	<0.00005
Vanadium (V)	mg/L	0.00014	0.00016	13%	<0.00005	<0.00005	<0.00005	<0.00005
Zinc (Zn)	mg/L	0.0016	0.0009	56%	<0.0008	<0.0008	<0.0008	0.001
Aggregate Organics								
Oil & Grease-(IR)	mg/L	<0.5	<0.5	N/A	<0.5	<0.5	<0.5	<0.5
Phenols (4AAP)	mg/L	0.003	0.002	40%	<0.001	<0.001	<0.001	<0.001
Volatile Organic Compounds								
Benzene	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
EthylBenzene	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
Toluene	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
Xylenes	mg/L	<0.00050	<0.00050	N/A	<0.00050	<0.00050	<0.00050	<0.00050
F1(C6-C10)	mg/L	<0.1	<0.1	N/A	<0.1	<0.1	<0.1	<0.1
F1-BTEX	mg/L	<0.1	<0.1	N/A	<0.1	<0.1	<0.1	<0.1
Hydrocarbons								
F2 (>C10-C16)	mg/L	<0.05	<0.05	N/A	<0.05	<0.05	<0.05	<0.05
F3 (C16-C34)	mg/L	<0.05	<0.05	N/A	<0.05	<0.05	<0.05	<0.05
F4 (C34-C50)	mg/L	<0.05	<0.05	N/A	<0.05	<0.05	<0.05	<0.05
Plant Pigments								
Chlorophyll a	µg/L	5	17	109%	1	<1	<1	15

Notes: Non-detect values were assumed to be equal to the detection limit when calculating RPD.

RPD = relative percent difference; °C = degrees Celsius; µS/cm = microSiemens per centimetre; % = percent; mg/L = milligrams per litre; µg/L = micrograms per litre;

< = less than; - = no data available, N/A = not applicable.

APPENDIX III

SEDIMENT QUALITY DATA FOR LAKES IN THE MELIADINE WEST GOLD PROJECT AREA

Table III-1
Sediment Quality Data for Lakes in the Meliadine West Gold Project, July 2008

Sample ID	Units	Guidelines		B6-A1	B6-A2	B6-B1	B6-B2	B7-A1	B7-B1	B5-1A	B5-2A	B5-1B	B5-2B	A8-1A	A8-2A	A8-1B	A8-2B
Date Sampled				13-JUL-08	13-JUL-08	13-JUL-08	13-JUL-08	13-JUL-08	13-JUL-08	14-JUL-08	14-JUL-08	14-JUL-08	14-JUL-08	15-JUL-08	15-JUL-08	15-JUL-08	15-JUL-08
Time Sampled				08:00	09:15	08:00	09:15	15:00	15:00	10:25	11:30	10:25	11:30	09:00	10:00	09:00	10:00
ALS Sample ID				L656419-1	L656419-2	L656419-3	L656419-4	L656419-5	L656419-6	L656997-9	L656997-11	L656997-10	L656997-12	L656997-13	L656997-15	L656997-14	L656997-16
Sediment Profile				0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm	0-2 cm	top 5-10 cm	0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm	0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm
		ISQG ^(a)	PEL ^(b)														
Physical Tests																	
% Moisture	%			89	94	90	90	77	79	85	83	82	78	89	95	86	88
XNo class																	
% Clay (<2 µm)	%			12	14	11	4	7	7	11	7	8	3	7	11	5	6
% Silt (0.05 mm - 2 µm)	%			42	51	56	22	56	33	62	44	67	28	22	56	34	52
% Sand (2.0 mm - 0.05 mm)	%			46	35	33	74	37	60	27	49	24	69	70	33	61	42
Particle Size																	
Texture	-			Loam	Silt loam	Silt loam	Sandy loam	Silt loam	Sandy loam	Silt loam	Loam / Sandy loam	Silt loam	Sandy loam	Sandy loam	Silt loam	Sandy loam	Silt loam
Leachable Anions & Nutrients																	
Total Nitrogen by LECO	%			1.31	1.44	1.37	1.37	0.58	0.40	0.90	0.65	0.58	0.43	0.82	1.23	0.72	0.78
Cyanides																	
Cyanide, Total	mg/kg			4	7.7	3.6	3.7	<0.5	1.2	3.3	2.1	2.4	2.2	4	3.4	1.5	2.3
Organic / Inorganic Carbon																	
Total Inorganic Carbon	%			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Carbon by Combustion	%			15.2	16.9	16.1	16.3	6	4.3	9	6.9	6.5	4.9	7.7	12.5	8	7.9
Total Organic Carbon	%			15.2	16.9	16.1	16.3	6	4.3	9	6.9	6.5	4.9	7.7	12.5	8	7.9
Metals (Dry Weight)																	
Antimony (Sb)	mg/kg			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic (As)	mg/kg	5.9	17.0	51.4	76.8	50.4	111	35.6	55.4	66.5	23.8	92.2	22	151	117	173	149
Barium (Ba)	mg/kg			76	105	72	93	52	57	62	37	58	36	60	70	55	52
Beryllium (Be)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium (Cd)	mg/kg	0.6	3.5	<0.5	0.6	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (Cr)	mg/kg	37.3	90.0	28.1	33.6	28.3	36.2	28.7	31.6	39.2	18.9	39.4	21.6	39.9	40.2	41.1	37
Cobalt (Co)	mg/kg			14	27	12	32	11	14	14	5	18	6	20	18	19	18
Copper (Cu)	mg/kg	35.7	197	103	154	104	155	43	48	56	28	58	32	77	75	78	68
Lead (Pb)	mg/kg	35.0	91.3	10	14	10	14	6	7	10	6	9	5	11	13	10	10
Mercury (Hg)	mg/kg	0.17	0.486	0.07	0.08	0.06	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	0.08	0.08	0.06
Molybdenum (Mo)	mg/kg			4	6	5	7	5	6	4	2	5	2	5	5	5	5
Nickel (Ni)	mg/kg			53	74	50	81	37	46	44	19	48	20	49	51	46	44
Selenium (Se)	mg/kg			1.3	1.8	1.4	1.9	0.8	0.9	0.9	0.4	0.9	0.5	1	0.9	0.9	0.9
Silver (Ag)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium (Tl)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tin (Sn)	mg/kg			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Uranium (U)	mg/kg			<2	3	2	3	<2	2	<2	<2	<2	<2	<2	<2	<2	<2
Vanadium (V)	mg/kg			29	34	29	37	28	31	35	18	38	21	34	34	35	32
Zinc (Zn)	mg/kg	123	315	70	100	70	100	40	50	60	30	60	30	70	70	70	60

Table III-1
Sediment Quality Data for Lakes in the Meliadine West Gold Project, July 2008 (continued)

Sample ID	Units	Guidelines		BOOT-1-1A	BOOT-1-2A	BOOT-1-1B	BOOT-1-2B	BOOT-2-1A	BOOT-2-2A	BOOT-2-1B	BOOT-2-2B	ML-A-1A	ML-A-2A	ML-A-1B	ML-A-2B	ML-E-1A	ML-E-2A	ML-E-1B	ML-E-2B
Date Sampled				16-JUL-08	16-JUL-08	16-JUL-08	16-JUL-08	16-JUL-08	16-JUL-08	16-JUL-08	16-JUL-08	17-JUL-08	17-JUL-08	17-JUL-08	17-JUL-08	17-JUL-08	17-JUL-08	17-JUL-08	17-JUL-08
Time Sampled				08:00	13:00	08:00	13:00	14:40	15:30	14:40	15:30	16:50	17:10	16:50	17:10	15:45	16:10	15:45	16:10
ALS Sample ID				L658105-4	L658105-6	L658105-5	L658105-7	L658105-8	L658105-10	L658105-9	L658105-11	L658105-12	L658105-14	L658105-13	L658105-15	L658105-16	L658105-18	L658105-17	L658105-19
Sediment Profile				0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm	0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm	0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm	0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm
		ISQG ^(a)	PEL ^(b)																
Physical Tests																			
% Moisture	%			55	41	48	37	84	85	83	83	75	73	75	75	50	54	54	63
XNo class																			
% Clay (<2um)	%			2	2	2	2	5	7	6	5	3	3	3	6	3	4	3	9
% Silt (0.05mm - 2um)	%			19	18	20	17	39	37	42	37	43	44	50	50	27	23	30	17
% Sand (2.0mm - 0.05mm)	%			79	80	78	82	56	56	52	58	54	53	47	45	70	74	67	74
Particle Size																			
Texture	-			Loamy sand	Loamy sand	Loamy sand	Loamy sand	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Silt loam / Sandy loam	Silt loam	Sandy loam	Sandy loam / Loamy sand	Sandy loam	Sandy loam
Leachable Anions & Nutrients																			
Total Nitrogen by LECO	%			0.15	0.08	0.13	0.07	0.64	0.61	0.53	0.55	0.40	0.40	0.38	0.36	0.10	0.16	0.10	0.21
Cyanides																			
Cyanide, Total	mg/kg			0.6	<0.5	0.8	<0.5	3.3	3.3	2.5	1.3	1.7	1.5	2.3	2	0.9	<0.5	<0.5	<0.5
Organic / Inorganic Carbon																			
Total Inorganic Carbon	%			<0.09	<0.09	<0.09	<0.09	<0.09	0.1	<0.09	<0.09	0.09	0.1	<0.09	<0.09	<0.09	0.1	<0.09	<0.09
Total Carbon by Combustion	%			1.6	0.8	1.6	0.8	6.4	6.2	5.8	5.4	3.8	3.7	3.7	3.7	1.1	1.5	1.1	1.9
Total Organic Carbon	%			1.6	0.8	1.6	0.8	6.4	6.1	5.8	5.4	3.8	3.5	3.7	3.7	1.1	1.5	1.1	1.9
Metals (Dry Weight)																			
Antimony (Sb)	mg/kg			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic (As)	mg/kg	5.9	17.0	5.3	2.6	4.6	2.8	65.1	52.6	40.5	28.7	38	55.1	21.4	26.8	5.2	7.8	4.5	6.5
Barium (Ba)	mg/kg			34	24	32	28	124	112	118	111	87	81	87	81	27	49	35	52
Beryllium (Be)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium (Cd)	mg/kg	0.6	3.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (Cr)	mg/kg	37.3	90.0	20.3	15.4	19.3	17.2	51.1	46	53.4	48.9	34.1	31.6	36	34.2	13.8	18.5	18	21.6
Cobalt (Co)	mg/kg			4	3	4	3	18	14	19	17	8	8	8	8	3	4	3	4
Copper (Cu)	mg/kg	35.7	197	9	6	9	7	72	63	76	67	39	36	44	42	11	18	16	23
Lead (Pb)	mg/kg	35.0	91.3	<5	<5	<5	<5	14	14	13	12	9	9	8	7	<5	<5	<5	<5
Mercury (Hg)	mg/kg	0.17	0.486	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum (Mo)	mg/kg			2	<1	2	<1	5	4	5	4	3	3	3	3	<1	1	<1	1
Nickel (Ni)	mg/kg			13	9	13	10	66	57	70	63	35	33	36	33	10	16	14	18
Selenium (Se)	mg/kg			0.2	<0.2	0.2	<0.2	1.3	1.1	1.2	1.1	0.7	0.6	0.7	0.7	0.3	0.3	0.2	0.4
Silver (Ag)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium (Tl)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tin (Sn)	mg/kg			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Uranium (U)	mg/kg			<2	<2	<2	<2	4	3	4	3	<2	<2	2	2	<2	<2	<2	<2
Vanadium (V)	mg/kg			19	14	17	16	56	50	58	53	36	34	39	37	14	19	19	22
Zinc (Zn)	mg/kg	123	315	30	20	30	20	100	90	100	90	50	50	60	50	20	30	30	30

Table III-1
Sediment Quality Data for Lakes in the Meliadine West Gold Project, July 2008 (continued)

Sample ID	Units	Guidelines		CONTROL-A	CONTROL-2A	CONTROL-1B	CONTROL-2B	ML-SE-1A	ML-SE-2A	ML-SE-1B	ML-SE-2B	ML-B-1A	ML-B-2A	ML-B-1B	ML-B-2B	ML-S-1A	ML-S-2A	ML-S-1B	ML-S-2B
Date Sampled				18-JUL-08	18-JUL-08	18-JUL-08	18-JUL-08	18-JUL-08	18-JUL-08	18-JUL-08	18-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08
Time Sampled				10:02	10:55	10:02	10:55	15:20	16:10	15:20	16:10	08:30	09:30	08:30	09:30	11:05	12:20	11:05	12:20
ALS Sample ID				L658705-9	L658705-11	L658705-10	L658705-12	L658705-13	L658705-15	L658705-14	L658705-16	L658705-17	L658705-19	L658705-18	L658705-20	L658705-21	L658705-23	L658705-22	L658705-24
Sediment Profile				0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm	0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm	0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm	0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm
		ISQG ^(a)	PEL ^(b)																
Physical Tests																			
% Moisture	%			80	82	76	77	75	78	72	75	42	40	43	43	77	83	75	80
XNo class																			
% Clay (<2um)	%			4	7	5	6	9	6	5	4	2	3	2	4	5	6	6	7
% Silt (0.05mm - 2um)	%			17	19	19	24	36	39	37	31	16	17	22	21	16	14	18	17
% Sand (2.0mm - 0.05mm)	%			79	74	76	70	56	56	58	66	82	80	76	75	79	80	76	76
Particle Size																			
Texture	-			Loamy sand	Sandy loam	Sandy loam / Loamy sand	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Sandy loam	Loamy sand	Loamy sand	Loamy sand	Loamy sand	Loamy sand	Loamy sand	Loamy sand	Sandy loam
Leachable Anions & Nutrients																			
Total Nitrogen by LECO	%			0.34	0.39	0.29	0.30	0.39	0.51	0.29	0.30	0.08	0.08	0.19	0.08	0.31	0.41	0.29	0.29
Cyanides																			
Cyanide, Total	mg/kg			1.6	3.6	2.2	2.6	1.7	2.9	1.7	2.1	0.6	<0.5	0.6	0.6	2.4	2.1	2.3	1.8
Organic / Inorganic Carbon																			
Total Inorganic Carbon	%			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Carbon by Combustion	%			4.5	5.4	3.6	3.8	3.8	4.9	2.9	3.1	0.8	0.7	0.9	0.8	4	5	3.3	4
Total Organic Carbon	%			4.5	5.4	3.6	3.8	3.8	4.9	2.9	3.1	0.8	0.7	0.9	0.8	4	5	3.3	4
Metals (Dry Weight)																			
Antimony (Sb)	mg/kg			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic (As)	mg/kg	5.9	17.0	6.3	7.2	7.3	6.8	7.5	8.2	7.6	7.6	2	1.8	2.2	2	5.8	4.9	4.8	4.9
Barium (Ba)	mg/kg			37	41	39	38	45	51	50	49	21	19	27	26	59	50	52	50
Beryllium (Be)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium (Cd)	mg/kg	0.6	3.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (Cr)	mg/kg	37.3	90.0	23.6	25.4	26.6	25.6	26.6	29.2	28.1	29.4	14.6	13.2	16	16.3	28.6	24.4	26	25.6
Cobalt (Co)	mg/kg			6	6	7	6	5	5	6	6	3	2	3	3	6	5	6	6
Copper (Cu)	mg/kg	35.7	197	26	30	35	35	20	24	23	25	10	7	12	12	34	29	32	34
Lead (Pb)	mg/kg	35.0	91.3	<5	<5	<5	<5	<5	5	<5	5	<5	<5	<5	<5	<5	5	<5	<5
Mercury (Hg)	mg/kg	0.17	0.486	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum (Mo)	mg/kg			1	1	1	2	1	1	2	2	<1	<1	<1	<1	4	1	1	1
Nickel (Ni)	mg/kg			18	21	21	20	17	19	18	20	8	7	9	10	23	20	20	21
Selenium (Se)	mg/kg			0.3	0.3	0.4	0.3	0.3	0.4	0.4	0.4	<0.2	<0.2	0.2	<0.2	0.4	0.3	0.4	0.4
Silver (Ag)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium (Tl)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tin (Sn)	mg/kg			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Uranium (U)	mg/kg			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Vanadium (V)	mg/kg			21	24	26	24	26	27	29	29	13	12	15	15	28	24	27	26
Zinc (Zn)	mg/kg	123	315	30	30	30	30	30	40	40	40	20	20	20	20	40	30	40	40

Table III-1
Sediment Quality Data for Lakes in the Meliadine West Gold Project, July 2008 (continued)

Sample ID	Units	Guidelines		ML-W-1A	ML-W-2A	ML-W-1B	ML-W-2B	DI-1-1A	DI-1-2A	DI-1-1B	DI-1-2B	DI-4-1A	DI-4-2A	DI-4-1B	DI-4-2B
Date Sampled				19-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08	20-JUL-08	20-JUL-08	20-JUL-08	20-JUL-08	20-JUL-08	20-JUL-08	20-JUL-08	20-JUL-08
Time Sampled				15:15	16:00	15:15	16:00	16:00	16:20	16:00	16:20	12:00	13:35	12:00	13:35
ALS Sample ID				L658705-25	L658705-27	L658705-26	L658705-28	L658705-29	L658705-31	L658705-30	L658705-32	L658705-33	L658705-35	L658705-34	L658705-36
Sediment Profile				0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm	0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm	0-2 cm	0-2 cm	top 5-10 cm	top 5-10 cm
		ISQG ^(a)	PEL ^(b)												
Physical Tests															
% Moisture	%			70	69	75	72	58	59	56	59	76	79	66	74
XNo class															
% Clay (<2um)	%			2	4	5	3	4	2	3	3	6	5	8	6
% Silt (0.05mm - 2um)	%			14	15	16	14	20	21	19	21	54	46	55	47
% Sand (2.0mm - 0.05mm)	%			83	81	79	82	76	78	77	76	40	49	38	48
Particle Size															
Texture	-			Loamy sand	Loamy sand	Loamy sand	Loamy sand	Loamy sand	Loamy sand	Loamy sand	Loamy sand	Silt loam	Sandy loam	Silt loam	Sandy loam
Leachable Anions & Nutrients															
Total Nitrogen by LECO	%			0.23	0.20	0.24	0.22	0.14	0.15	0.10	0.14	0.40	0.49	0.28	0.37
Cyanides															
Cyanide, Total	mg/kg			1.9	1.8	1.6	1.7	1	1.8	1.2	1.5	3	4.2	2.3	3.3
Organic / Inorganic Carbon															
Total Inorganic Carbon	%			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Carbon by Combustion	%			2.6	2.4	2.9	2.4	1.5	1.6	1.2	1.6	4.1	4.8	2.9	3.9
Total Organic Carbon	%			2.6	2.4	2.9	2.4	1.5	1.6	1.2	1.6	4.1	4.8	2.9	3.9
Metals (Dry Weight)															
Antimony (Sb)	mg/kg			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic (As)	mg/kg	5.9	<u>17.0</u>	4.5	3.6	4.3	3.2	6.6	7.2	6.9	7.5	33	<u>43.5</u>	<u>42.5</u>	<u>67.8</u>
Barium (Ba)	mg/kg			62	57	67	53	45	46	43	49	78	88	70	85
Beryllium (Be)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium (Cd)	mg/kg	0.6	<u>3.5</u>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (Cr)	mg/kg	37.3	<u>90.0</u>	19.9	18.9	22.2	18.3	22.6	22.4	21.9	24	42.9	46.4	40.9	48.5
Cobalt (Co)	mg/kg			5	4	5	4	5	5	4	5	13	16	14	21
Copper (Cu)	mg/kg	35.7	<u>197</u>	30	27	38	30	22	22	20	22	44	51	42	59
Lead (Pb)	mg/kg	35.0	<u>91.3</u>	<5	<5	<5	<5	<5	<5	<5	<5	7	8	6	8
Mercury (Hg)	mg/kg	0.17	<u>0.486</u>	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06
Molybdenum (Mo)	mg/kg			1	1	2	1	1	<1	<1	<1	2	2	2	3
Nickel (Ni)	mg/kg			19	18	22	17	21	21	19	23	42	52	47	66
Selenium (Se)	mg/kg			0.4	0.4	0.5	0.4	0.2	0.3	0.2	0.2	0.6	0.7	0.6	0.7
Silver (Ag)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium (Tl)	mg/kg			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tin (Sn)	mg/kg			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Uranium (U)	mg/kg			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Vanadium (V)	mg/kg			21	21	25	21	20	20	20	22	39	42	38	43
Zinc (Zn)	mg/kg	123	<u>315</u>	30	30	40	30	30	30	30	30	60	60	50	70

Notes: Values greater than or equal to the ISQG guidelines are bolded.

Values greater than or equal to PEL guidelines are bolded and underlined.

Non-detect values that have detection limits that are greater than or equal to guidelines are bolded and italicized.

(a) = ISQG = Interim freshwater sediment quality guidelines (as mg/kg dry weight) from the Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (CCME 2002).

(b) = PEL = probable effect levels (as mg/kg dry weight) from the Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (CCME 2002).

mg/kg = milligrams per kilogram; cm = centimetre; % = percent; < = less than; µm = micrometre; mm = millimetre.

APPENDIX IV
ANALYTICAL CHEMISTRY REPORTS



Environmental Division

Certificate of Analysis

GOLDER ASSOCIATES LTD

ATTN: KERRIE SERBEN

195 PEMBERTON AVE

NORTH VANCOUVER BC V7P 2R4

Reported On: 19-NOV-08 09:21 AM

Revision: 7

Lab Work Order #: **L656419**

Date Received: **16-JUL-08**

Project P.O. #: NOT SUBMITTED

Job Reference: 07-1373-0055 PHASE 6030

Legal Site Desc: MULTIPLE SITES

CofC Numbers: C093563, C093564, C093582

Other Information:

Comments: ADDITIONAL 19-SEP-08 09:58
ADDITIONAL 10-SEP-08 17:28


NHAN H NGUYEN
Senior Account Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

ALS Canada Ltd. (formerly ETL Chemspec Analytical Ltd.)

Part of the **ALS Laboratory Group**

9936-67 Avenue, Edmonton, AB T6E 0P5

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A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656419-1 SEDIMENT 13-JUL-08 08:00 B6-A1	L656419-2 SEDIMENT 13-JUL-08 09:15 B6-A2	L656419-3 SEDIMENT 13-JUL-08 08:00 B6-B1	L656419-4 SEDIMENT 13-JUL-08 09:15 B6-B2	L656419-5 SEDIMENT 13-JUL-08 15:00 B7-A1
Grouping	Analyte						
SOIL							
Physical Tests	% Moisture (%)		89	94	90	90	77
Particle Size	Texture		Loam	Silt loam	Silt loam	Sandy loam	Silt loam
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)		1.31	1.44	1.37	1.37	0.58
Cyanides	Cyanide, Total (mg/kg)		4.0	7.7	3.6	3.7	<0.5
Organic / Inorganic Carbon	CaCO3 Equivalent (%)		0.9	<0.7	<0.7	<0.7	<0.7
	Inorganic Carbon (%)		<0.1	<0.1	<0.1	<0.1	<0.1
	Total Carbon by Combustion (%)		15.2	16.9	16.1	16.3	6.0
	Total Organic Carbon (%)		15.2	16.9	16.1	16.3	6.0
Metals	Antimony (Sb) (mg/kg)		<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As) (mg/kg)		51.4	76.8	50.4	111	35.6
	Barium (Ba) (mg/kg)		76	105	72	93	52
	Beryllium (Be) (mg/kg)		<1	<1	<1	<1	<1
	Cadmium (Cd) (mg/kg)		<0.5	0.6	<0.5	0.5	<0.5
	Chromium (Cr) (mg/kg)		28.1	33.6	28.3	36.2	28.7
	Cobalt (Co) (mg/kg)		14	27	12	32	11
	Copper (Cu) (mg/kg)		103	154	104	155	43
	Lead (Pb) (mg/kg)		10	14	10	14	6
	Mercury (Hg) (mg/kg)		0.07	0.08	0.06	0.07	<0.05
	Molybdenum (Mo) (mg/kg)		4	6	5	7	5
	Nickel (Ni) (mg/kg)		53	74	50	81	37
	Selenium (Se) (mg/kg)		1.3	1.8	1.4	1.9	0.8
	Silver (Ag) (mg/kg)		<1	<1	<1	<1	<1
	Thallium (Tl) (mg/kg)		<1	<1	<1	<1	<1
	Tin (Sn) (mg/kg)		<5	<5	<5	<5	<5
	Uranium (U) (mg/kg)		<2	3	2	3	<2
	Vanadium (V) (mg/kg)		29	34	29	37	28
	Zinc (Zn) (mg/kg)		70	100	70	100	40
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)						<0.005
	Acenaphthylene (mg/kg)						<0.005
	Acridine (mg/kg)						<0.005
	Anthracene (mg/kg)						<0.005
	Benzo(a)anthracene (mg/kg)						<0.005
	Benzo(a)pyrene (mg/kg)						<0.005
	Benzo(b&j)fluoranthene (mg/kg)						<0.005
	Benzo(ghi)perylene (mg/kg)						<0.005
	Benzo(k)fluoranthene (mg/kg)						<0.005
	Biphenyl (mg/kg)						<0.005

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID				
		Description				
		Sampled Date				
		Sampled Time				
		Client ID				
Grouping	Analyte					
SOIL						
Physical Tests	% Moisture (%)	79				
Particle Size	Texture	Sandy loam				
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)	0.40				
Cyanides	Cyanide, Total (mg/kg)	1.2				
Organic / Inorganic Carbon	CaCO3 Equivalent (%)	0.9				
	Inorganic Carbon (%)	<0.1				
	Total Carbon by Combustion (%)	4.3				
	Total Organic Carbon (%)	4.3				
Metals	Antimony (Sb) (mg/kg)	<0.2				
	Arsenic (As) (mg/kg)	55.4				
	Barium (Ba) (mg/kg)	57				
	Beryllium (Be) (mg/kg)	<1				
	Cadmium (Cd) (mg/kg)	<0.5				
	Chromium (Cr) (mg/kg)	31.6				
	Cobalt (Co) (mg/kg)	14				
	Copper (Cu) (mg/kg)	48				
	Lead (Pb) (mg/kg)	7				
	Mercury (Hg) (mg/kg)	<0.05				
	Molybdenum (Mo) (mg/kg)	6				
	Nickel (Ni) (mg/kg)	46				
	Selenium (Se) (mg/kg)	0.9				
	Silver (Ag) (mg/kg)	<1				
	Thallium (Tl) (mg/kg)	<1				
	Tin (Sn) (mg/kg)	<5				
	Uranium (U) (mg/kg)	2				
	Vanadium (V) (mg/kg)	31				
	Zinc (Zn) (mg/kg)	50				
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.005				
	Acenaphthylene (mg/kg)	<0.005				
	Acridine (mg/kg)	<0.005				
	Anthracene (mg/kg)	<0.005				
	Benzo(a)anthracene (mg/kg)	<0.005				
	Benzo(a)pyrene (mg/kg)	<0.005				
	Benzo(b&j)fluoranthene (mg/kg)	<0.005				
	Benzo(ghi)perylene (mg/kg)	<0.005				
	Benzo(k)fluoranthene (mg/kg)	<0.005				
	Biphenyl (mg/kg)	<0.005				

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656419-1 SEDIMENT 13-JUL-08 08:00 B6-A1	L656419-2 SEDIMENT 13-JUL-08 09:15 B6-A2	L656419-3 SEDIMENT 13-JUL-08 08:00 B6-B1	L656419-4 SEDIMENT 13-JUL-08 09:15 B6-B2	L656419-5 SEDIMENT 13-JUL-08 15:00 B7-A1
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	C2 sub'd B(a)A/chrysene (mg/kg)						<0.02
	C2 sub'd B(b&k)F/B(a)P (mg/kg)						<0.02
	C2 sub'd biphenyl (mg/kg)						<0.02
	C2 sub'd dibenzothiophene (mg/kg)						<0.02
	C2 sub'd fluoranthene/pyrene (mg/kg)						<0.02
	C2 sub'd fluorene (mg/kg)						<0.02
	C2 sub'd naphthalene (mg/kg)						<0.02
	C2 sub'd phenanthrene/anth. (mg/kg)						<0.02
	C3 sub'd dibenzothiophene (mg/kg)						<0.02
	C3 sub'd fluoranthene/pyrene (mg/kg)						<0.02
	C3 sub'd fluorene (mg/kg)						<0.02
	C3 sub'd naphthalene (mg/kg)						<0.02
	C3 sub'd phenanthrene/anth. (mg/kg)						<0.02
	C4 sub'd dibenzothiophene (mg/kg)						<0.02
	C4 sub'd naphthalene (mg/kg)						<0.02
	C4 sub'd phenanthrene/anth. (mg/kg)						<0.02
	Chrysene (mg/kg)						<0.005
	Dibenzo(a,h)anthracene (mg/kg)						<0.005
	Dibenzothiophene (mg/kg)						<0.005
	Fluoranthene (mg/kg)						<0.005
	Fluorene (mg/kg)						<0.005
	Indeno(c,d-123)pyrene (mg/kg)						<0.005
	Methyl acenaphthene (mg/kg)						<0.02
	Methyl B(a)A/chrysene (mg/kg)						<0.02
	Methyl B(b&k)F/B(a)P (mg/kg)						<0.02
	Methyl biphenyl (mg/kg)						<0.02
	Methyl dibenzothiophene (mg/kg)						<0.02
	Methyl fluoranthene/pyrene (mg/kg)						<0.02
	Methyl fluorene (mg/kg)						<0.02
	Methyl phenanthrene/anthracene (mg/kg)						<0.02
	Retene (mg/kg)						<0.005
	1-Methylnaphthalene (mg/kg)						0.007
	Naphthalene (mg/kg)						0.01
	Phenanthrene (mg/kg)						<0.005
	Pyrene (mg/kg)						<0.005
	Quinoline (mg/kg)						<0.005
	Surrogate: 2-Fluorobiphenyl (%)						85
	Surrogate: Nitrobenzene d5 (%)						60

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID				
		Description				
		Sampled Date				
		Sampled Time				
		Client ID				
Grouping	Analyte					
SOIL						
Polycyclic Aromatic Hydrocarbons	C2 sub'd B(a)A/chrysene (mg/kg)	<0.02				
	C2 sub'd B(b&k)F/B(a)P (mg/kg)	<0.02				
	C2 sub'd biphenyl (mg/kg)	<0.02				
	C2 sub'd dibenzothiophene (mg/kg)	<0.02				
	C2 sub'd fluoranthene/pyrene (mg/kg)	<0.02				
	C2 sub'd fluorene (mg/kg)	<0.02				
	C2 sub'd naphthalene (mg/kg)	<0.02				
	C2 sub'd phenanthrene/anth. (mg/kg)	<0.02				
	C3 sub'd dibenzothiophene (mg/kg)	<0.02				
	C3 sub'd fluoranthene/pyrene (mg/kg)	<0.02				
	C3 sub'd fluorene (mg/kg)	<0.02				
	C3 sub'd naphthalene (mg/kg)	<0.02				
	C3 sub'd phenanthrene/anth. (mg/kg)	<0.02				
	C4 sub'd dibenzothiophene (mg/kg)	<0.02				
	C4 sub'd naphthalene (mg/kg)	<0.02				
	C4 sub'd phenanthrene/anth. (mg/kg)	<0.02				
	Chrysene (mg/kg)	<0.005				
	Dibenzo(a,h)anthracene (mg/kg)	<0.005				
	Dibenzothiophene (mg/kg)	<0.005				
	Fluoranthene (mg/kg)	<0.005				
	Fluorene (mg/kg)	<0.005				
	Indeno(c,d-123)pyrene (mg/kg)	<0.005				
	Methyl acenaphthene (mg/kg)	<0.02				
	Methyl B(a)A/chrysene (mg/kg)	<0.02				
	Methyl B(b&k)F/B(a)P (mg/kg)	<0.02				
	Methyl biphenyl (mg/kg)	<0.02				
	Methyl dibenzothiophene (mg/kg)	<0.02				
	Methyl fluoranthene/pyrene (mg/kg)	<0.02				
	Methyl fluorene (mg/kg)	<0.02				
	Methyl phenanthrene/anthracene (mg/kg)	<0.02				
	Retene (mg/kg)	<0.005				
	1-Methylnaphthalene (mg/kg)	<0.005				
	Naphthalene (mg/kg)	0.008				
	Phenanthrene (mg/kg)	<0.005				
	Pyrene (mg/kg)	<0.005				
	Quinoline (mg/kg)	<0.005				
	Surrogate: 2-Fluorobiphenyl (%)	56				
	Surrogate: Nitrobenzene d5 (%)	40				

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L656419-1	L656419-2	L656419-3	L656419-4	L656419-5
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	13-JUL-08	13-JUL-08	13-JUL-08	13-JUL-08	13-JUL-08
		Sampled Time	08:00	09:15	08:00	09:15	15:00
		Client ID	B6-A1	B6-A2	B6-B1	B6-B2	B7-A1
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Surrogate: p-Terphenyl d14 (%)						101
Particle Size	% Sand (2.0mm - 0.05mm) (%)	46	35	33	74	37	
	% Silt (0.05mm - 2um) (%)	42	51	56	22	56	
	% Clay (<2um) (%)	12	14	11	4	7	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656419-6 SEDIMENT 13-JUL-08 15:00 B7-B1				
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Surrogate: p-Terphenyl d14 (%)		71				
Particle Size	% Sand (2.0mm - 0.05mm) (%)		60				
	% Silt (0.05mm - 2um) (%)		33				
	% Clay (<2um) (%)		7				

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L656419-7	L656419-8	L656419-9	L656419-10	L656419-11
		Description	FRESHWATER	FRESHWATER	FRESHWATER	FRESHWATER	FRESHWATER
		Sampled Date	12-JUL-08	12-JUL-08	12-JUL-08	12-JUL-08	13-JUL-08
		Sampled Time	08:45	14:00	10:00	11:00	08:00
		Client ID	B7	B6	Z2-1	Z4-3	B7-6
Grouping	Analyte						
WATER							
Physical Tests	Total Suspended Solids (mg/L)	3	<3	<3	<3	<3	
	Total Dissolved Solids (mg/L)	75	69	66	<5	78	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	26	27	26	<5	26	
	Ammonia-N (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05	
	Bicarbonate (HCO3) (mg/L)	32	33	31	<5	31	
	Carbonate (CO3) (mg/L)	<5	<5	<5	<5	<5	
	Chloride (Cl) (mg/L)	13	12	13	<1	14	
	Conductivity (EC) (uS/cm)	103	105	103	2.7	106	
	Hardness (as CaCO3) (mg/L)	43	42	41	<1	42	
	Hydroxide (OH) (mg/L)	<5	<5	<5	<5	<5	
	Ion Balance (%)	104	106	99.7	Low TDS	99.0	
	Nitrate+Nitrite-N (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1	
	Nitrate-N (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1	
	Nitrite-N (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05	
	Total Kjeldahl Nitrogen (mg/L)	0.3	0.4	0.4	<0.2	0.4	
	pH (pH)	7.6	7.6	7.6	5.6	7.6	
	Orthophosphate (PO4-P) (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	
	Phosphorus, Total (mg/L)	0.013	0.008	0.008	<0.001	0.009	
	Phosphorus, Total Dissolved (mg/L)	0.004	0.004	0.004	<0.001	0.004	
	TDS (Calculated) (mg/L)	53	51	50	<1	51	
	Cyanides	Cyanide, Total (mg/L)	<0.002	<0.002	<0.002	<0.002	<0.002
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	4.5	4.9	4.5	<0.5	5.0	
	Total Carbon (mg/L)	11	11	10	<1	11	
	Total Organic Carbon (mg/L)	6	5	5	<1	5	
Metals	Calcium (Ca) (mg/L)	14.4	14.1	13.9	<0.5	14.1	
	Magnesium (Mg) (mg/L)	1.7	1.7	1.6	<0.1	1.7	
	Potassium (K) (mg/L)	0.9	0.9	0.8	<0.5	0.9	
	Sodium (Na) (mg/L)	3	3	2	<1	2	
	Sulfate (SO4) (mg/L)	4.1	3.0	2.9	<0.5	2.9	
Total Metals	Aluminum (Al) (mg/L)	0.0015	0.0029	0.0019	<0.0003	0.0037	
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
	Arsenic (As) (mg/L)	0.00120	0.00115	0.00120	<0.00003	0.00162	
	Barium (Ba) (mg/L)	0.0116	0.0132	0.0126	<0.00005	0.0130	
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
	Boron (B) (mg/L)	0.002	0.002	0.002	<0.001	0.002	
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	Calcium (Ca) (mg/L)	12.8	13.9	13.9	<0.02	14.0	
	Chromium (Cr) (mg/L)	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656419-12 FRESHWATER 13-JUL-08 08:00 E2-1	L656419-13 FRESHWATER 13-JUL-08 08:00 E4-3			
Grouping	Analyte						
WATER							
Physical Tests	Total Suspended Solids (mg/L)		<3	<3			
	Total Dissolved Solids (mg/L)		74	<5			
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)		26	<5			
	Ammonia-N (mg/L)		<0.05	<0.05			
	Bicarbonate (HCO3) (mg/L)		31	<5			
	Carbonate (CO3) (mg/L)		<5	<5			
	Chloride (Cl) (mg/L)		14	<1			
	Conductivity (EC) (uS/cm)		106	3.1			
	Hardness (as CaCO3) (mg/L)		43	<1			
	Hydroxide (OH) (mg/L)		<5	<5			
	Ion Balance (%)		104	Low TDS			
	Nitrate+Nitrite-N (mg/L)		<0.1	<0.1			
	Nitrate-N (mg/L)		<0.1	<0.1			
	Nitrite-N (mg/L)		<0.05	<0.05			
	Total Kjeldahl Nitrogen (mg/L)		0.4	<0.2			
	pH (pH)		7.6	5.7			
	Orthophosphate (PO4-P) (mg/L)		<0.001	<0.001			
	Phosphorus, Total (mg/L)		0.009	<0.001 *			
	Phosphorus, Total Dissolved (mg/L)		0.008	0.027 *			
	TDS (Calculated) (mg/L)		53	<1			
Cyanides	Cyanide, Total (mg/L)		<0.002	<0.002			
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)		5.1	<0.5			
	Total Carbon (mg/L)		11	<1			
	Total Organic Carbon (mg/L)		5	<1			
Metals	Calcium (Ca) (mg/L)		14.3	<0.5			
	Magnesium (Mg) (mg/L)		1.7	<0.1			
	Potassium (K) (mg/L)		0.9	<0.5			
	Sodium (Na) (mg/L)		3	<1			
	Sulfate (SO4) (mg/L)		3.0	<0.5			
Total Metals	Aluminum (Al) (mg/L)		0.0038	<0.0003			
	Antimony (Sb) (mg/L)		<0.00003	<0.00003			
	Arsenic (As) (mg/L)		0.00166	<0.00003			
	Barium (Ba) (mg/L)		0.0129	<0.00005			
	Beryllium (Be) (mg/L)		<0.0002	<0.0002			
	Boron (B) (mg/L)		0.002	<0.001			
	Cadmium (Cd) (mg/L)		<0.00005	<0.00005			
	Calcium (Ca) (mg/L)		14.1	<0.02			
	Chromium (Cr) (mg/L)		<0.00006	<0.00006			

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656419-7 FRESHWATER 12-JUL-08 08:45 B7	L656419-8 FRESHWATER 12-JUL-08 14:00 B6	L656419-9 FRESHWATER 12-JUL-08 10:00 Z2-1	L656419-10 FRESHWATER 12-JUL-08 11:00 Z4-3	L656419-11 FRESHWATER 13-JUL-08 08:00 B7-6
Grouping	Analyte						
WATER							
Total Metals	Cobalt (Co) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
	Copper (Cu) (mg/L)	0.0027	0.0012	0.0038	<0.0006	0.0008	
	Iron (Fe) (mg/L)	0.064	0.083	0.064	<0.005	0.122	
	Lead (Pb) (mg/L)	<0.00005	0.00010	<0.00005	<0.00005	<0.00005	
	Magnesium (Mg) (mg/L)	1.29	1.46	1.41	<0.004	1.39	
	Manganese (Mn) (mg/L)	0.0040	0.0072	0.0045	<0.0001	0.0072	
	Mercury (Hg)-Total (mg/L)	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	
	Molybdenum (Mo) (mg/L)	0.00012	0.00011	0.00012	<0.00006	0.00013	
	Nickel (Ni) (mg/L)	0.00056	0.00061	0.00058	<0.00006	0.00066	
	Potassium (K) (mg/L)	0.85	0.90	0.90	<0.02	0.89	
	Selenium (Se) (mg/L)	0.0002	0.0002	0.0002	<0.0001	0.0002	
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
	Sodium (Na) (mg/L)	1.99	2.46	2.15	<0.005	2.14	
	Strontium (Sr) (mg/L)	0.0752	0.0749	0.0816	<0.0001	0.0818	
	Thallium (Tl)-Total (mg/L)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
	Uranium (U) (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	Vanadium (V) (mg/L)	0.00016	0.00013	0.00017	<0.00005	0.00017	
	Zinc (Zn) (mg/L)	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	
Dissolved Metals	Aluminum (Al) (mg/L)	0.0019	0.0020	0.0016	<0.0003	0.0023	
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
	Arsenic (As) (mg/L)	0.00107	0.00101	0.00109	<0.00003	0.00144	
	Barium (Ba) (mg/L)	0.0123	0.0127	0.0116	<0.00005	0.0126	
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
	Boron (B) (mg/L)	0.002	0.002	0.002	<0.001	0.002	
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	Calcium (Ca) (mg/L)	13.9	13.8	12.7	<0.02	14.1	
	Chromium (Cr) (mg/L)	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	
	Cobalt (Co) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
	Copper (Cu) (mg/L)	0.0008	0.0022	0.0008	<0.0006	0.0008	
	Iron (Fe) (mg/L)	0.025	0.034	0.023	<0.005	0.059	
	Lead (Pb) (mg/L)	0.00012 *	0.00019	<0.00005	<0.00005	0.00005	
	Magnesium (Mg) (mg/L)	1.38	1.43	1.29	<0.004	1.42	
	Manganese (Mn) (mg/L)	0.0019	0.0026	0.0020	<0.0001	0.0046	
	Mercury (Hg)-Dissolved (mg/L)	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	
	Molybdenum (Mo) (mg/L)	0.00012	0.00011	0.00012	<0.00006	0.00013	
	Nickel (Ni) (mg/L)	0.00052	0.00061	0.00060	<0.00006	0.00068	
	Potassium (K) (mg/L)	0.90	0.90	0.83	<0.02	0.91	
	Selenium (Se) (mg/L)	0.0002	0.0001	0.0001	<0.0001	0.0002	
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656419-12 FRESHWATER 13-JUL-08 08:00 E2-1	L656419-13 FRESHWATER 13-JUL-08 08:00 E4-3			
Grouping	Analyte						
WATER							
Total Metals	Cobalt (Co) (mg/L)	<0.0001	<0.0001				
	Copper (Cu) (mg/L)	0.0008	<0.0006				
	Iron (Fe) (mg/L)	0.124	<0.005				
	Lead (Pb) (mg/L)	<0.00005	<0.00005				
	Magnesium (Mg) (mg/L)	1.41	<0.004				
	Manganese (Mn) (mg/L)	0.0076	<0.0001				
	Mercury (Hg)-Total (mg/L)	<0.00002	<0.00002				
	Molybdenum (Mo) (mg/L)	0.00012	<0.00006				
	Nickel (Ni) (mg/L)	0.00063	<0.00006				
	Potassium (K) (mg/L)	0.91	<0.02				
	Selenium (Se) (mg/L)	0.0002	<0.0001				
	Silver (Ag) (mg/L)	<0.0001	<0.0001				
	Sodium (Na) (mg/L)	2.19	<0.005				
	Strontium (Sr) (mg/L)	0.0824	<0.0001				
	Thallium (Tl)-Total (mg/L)	<0.00003	<0.00003				
	Uranium (U) (mg/L)	<0.00005	<0.00005				
	Vanadium (V) (mg/L)	0.00017	<0.00005				
	Zinc (Zn) (mg/L)	<0.0008	<0.0008				
Dissolved Metals	Aluminum (Al) (mg/L)	0.0021	<0.0003				
	Antimony (Sb) (mg/L)	<0.00003	<0.00003				
	Arsenic (As) (mg/L)	0.00142	<0.00003				
	Barium (Ba) (mg/L)	0.0128	<0.00005				
	Beryllium (Be) (mg/L)	<0.0002	<0.0002				
	Boron (B) (mg/L)	0.002	<0.001				
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005				
	Calcium (Ca) (mg/L)	14.1	<0.02				
	Chromium (Cr) (mg/L)	<0.00006	<0.00006				
	Cobalt (Co) (mg/L)	<0.0001	<0.0001				
	Copper (Cu) (mg/L)	0.0008	<0.0006				
	Iron (Fe) (mg/L)	0.061	<0.005				
	Lead (Pb) (mg/L)	<0.00005	<0.00005				
	Magnesium (Mg) (mg/L)	1.41	<0.004				
	Manganese (Mn) (mg/L)	0.0046	<0.0001				
	Mercury (Hg)-Dissolved (mg/L)	<0.00002	<0.00002				
	Molybdenum (Mo) (mg/L)	0.00011	<0.00006				
	Nickel (Ni) (mg/L)	0.00063	<0.00006				
	Potassium (K) (mg/L)	0.90	<0.02				
	Selenium (Se) (mg/L)	0.0002	<0.0001				
	Silver (Ag) (mg/L)	<0.0001	<0.0001				

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L656419-7	L656419-8	L656419-9	L656419-10	L656419-11
		Description	FRESHWATER	FRESHWATER	FRESHWATER	FRESHWATER	FRESHWATER
		Sampled Date	12-JUL-08	12-JUL-08	12-JUL-08	12-JUL-08	13-JUL-08
		Sampled Time	08:45	14:00	10:00	11:00	08:00
		Client ID	B7	B6	Z2-1	Z4-3	B7-6
Grouping	Analyte						
WATER							
Dissolved Metals	Sodium (Na) (mg/L)	2.11	2.43	2.01	<0.005	2.21	
	Strontium (Sr) (mg/L)	0.0818	0.0745	0.0767	<0.0001	0.0829	
	Thallium (Tl)-Dissolved (mg/L)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
	Uranium (U) (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	Vanadium (V) (mg/L)	0.00014	<0.00005	0.00016	<0.00005	0.00014	
	Zinc (Zn) (mg/L)	0.0016	0.0015	0.0009	<0.0008	0.0012	
Aggregate Organics	Oil & Grease-(IR) (mg/L)	<0.5		<0.5	<0.5		
	Phenols (4AAP) (mg/L)	0.003		0.002	<0.001		
Volatile Organic Compounds	Benzene (mg/L)	<0.00050		<0.00050	<0.00050		
	EthylBenzene (mg/L)	<0.00050		<0.00050	<0.00050		
	Toluene (mg/L)	<0.00050		<0.00050	<0.00050		
	Xylenes (mg/L)	<0.00050		<0.00050	<0.00050		
	F1(C6-C10) (mg/L)	<0.1		<0.1	<0.1		
	F1-BTEX (mg/L)	<0.1		<0.1	<0.1		
Hydrocarbons	F2 (>C10-C16) (mg/L)	<0.05		<0.05	<0.05		
	F3 (C16-C34) (mg/L)	<0.05		<0.05	<0.05		
	F4 (C34-C50) (mg/L)	<0.05		<0.05	<0.05		
Plant Pigments	Chlorophyll a (ug/L)	5	5	17	<1	9	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID				
		Description				
		Sampled Date				
		Sampled Time				
		Client ID				
Grouping	Analyte					
WATER						
Dissolved Metals	Sodium (Na) (mg/L)	2.19	<0.005			
	Strontium (Sr) (mg/L)	0.0810	<0.0001			
	Thallium (Tl)-Dissolved (mg/L)	<0.00003	<0.00003			
	Uranium (U) (mg/L)	<0.00005	<0.00005			
	Vanadium (V) (mg/L)	0.00012	<0.00005			
	Zinc (Zn) (mg/L)	<0.0008	<0.0008			
Aggregate Organics	Oil & Grease-(IR) (mg/L)					
	Phenols (4AAP) (mg/L)					
Volatile Organic Compounds	Benzene (mg/L)					
	EthylBenzene (mg/L)					
	Toluene (mg/L)					
	Xylenes (mg/L)					
	F1(C6-C10) (mg/L)					
	F1-BTEX (mg/L)					
Hydrocarbons	F2 (>C10-C16) (mg/L)					
	F3 (C16-C34) (mg/L)					
	F4 (C34-C50) (mg/L)					
Plant Pigments	Chlorophyll a (ug/L)	4	12			

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

Reference Information

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comment:
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Qualifiers for Individual Parameters Listed:

Qualifier	Description
RRV	Reported Result Verified By Repeat Analysis
RRVAP	Reported Result Verified by Alternate Process

Samples with Qualifiers for Individual Parameters as listed above:

Sample Number	Client Sample ID	Parameters	Qualifier
L656419-13	E4-3	Phosphorus, Total	RRV
L656419-7	B7	Phosphorus, Total Dissolved Lead (Pb)	RRVAP

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
BTX,F1-CL	Water	BTEX and F1 (C6-C10)	EPA 5030/8015& 8260-P&T GC-MS/FID
C-DIS-ORG-LOW-ED	Water	Dissolved Organic Carbon	APHA 5310 B-Instrumental
C-INORG-ORG-SK	Soil	Inorganic and Organic Carbon	SSSA (1996) P455-456

When carbonates are decomposed with acid in an open system, carbon dioxide is released to the atmosphere. The decrease in sample weight resulting from CO₂ loss is proportional to the carbonate content of the soil.

Reference:

Loeppert, R.H. and Suarez, D.L. 1996. Gravimetric Method for Loss of Carbon Dioxide. P. 455-456 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

C-TOT-ED	Water	Total Carbon	APHA 5310 B-Instrumental
C-TOT-LECO-SK	Soil	Total Carbon by combustion method	SSSA (1996) - Combustion Instrument

The sample is introduced into a quartz tube where it undergoes combustion at 900 °C in the presence of oxygen.

Combustion gases are first carried through a catalyst bed in the bottom of the combustion tube, where oxidation is completed and then carried through a reducing agent (copper), where the nitrogen oxides are reduced to elemental nitrogen.

This mixture of N₂, CO₂, and H₂O is then passed through an absorber column containing magnesium perchlorate to remove water. N₂ and CO₂ gases are then separated in a gas chromatographic column and detected by thermal conductivity.

Reference:

Nelson, D.W. and Sommers, L.E. 1996. Total Carbon, organic carbon and organic matter. P. 961-1010 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

C-TOT-ORG-ED	Water	Total Organic Carbon	APHA 5310 B-Instrumental
C-TOT-ORG-LECO-SK	Soil	Organic Carbon by combustion method	SSSA (1996) p. 973

Total Organic Carbon (C-TOT-ORG-LECO-SK, C-TOT-ORG-SK)

Total C and inorganic C are determined on separate samples. The total C is determined by combustion and thermal conductivity detection, while inorganic C is determined by weight loss after addition of hydrochloric acid. Organic C is calculated by the difference between these two determinations.

Reference for Total C:

Nelson, D.W. and Sommers, L.E. 1996. Total Carbon, organic carbon and organic matter. P. 961-1010 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

Reference for Inorganic C:

Loeppert, R.H. and Suarez, D.L. 1996. Gravimetric Method for Loss of Carbon Dioxide. P. 455-456 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
CHLOROPHYLL A-FM	Water	Chlorophyll-a	APHA 10200H, 1998
CL-ED	Water	Chloride (Cl)	APHA 4500 Cl E-Colorimetry
CN-TOT-WP	Water	Cyanide, Total	APHA 4500 CN-O
Total Cyanide in Water: Simple cyanides are converted to hydrogen cyanide (HCN) by distillation. Complex cyanides are not easily decomposed. Low power UV radiation is used to break down organic, metallic and alkali complexed compounds to free cyanide. The distillation step isolates HCN from simple cyanides under specific acidic conditions. The liberated HCN is converted to cyanogen chloride with chloramine-T. This further reacts with barbituric acid and isonicotinic acid to form a highly coloured complex.			
CN-TOT-WP	Soil	Cyanide, Total	EPA 9013A
Total Cyanides in Soil, Vegetation and Tissue: The sample is extracted with a strong base for 16 hours, then filtered. The filtrate is then analyzed for total cyanide as follows: Simple cyanides are converted to hydrogen cyanide (HCN) by distillation. Complex cyanides are not easily decomposed. Low power UV radiation is used to break down organic, metallic and alkali complexed compounds to free cyanide. The distillation step isolates HCN from simple cyanides under specific acidic conditions. The liberated HCN is converted to cyanogen chloride with chloramine-T. This further reacts with barbituric acid and isonicotinic acid to form a highly coloured complex.			
ETL-ROUTINE-ICP-ED	Water	ICP metals and SO4 for routine water	APHA 3120 B-ICP-OES
F2,F3,F4-CL	Water	F2, F3, F4	EPA 3510/8000-GC-FID
HG-ULT-CV-ED	Water	Mercury (Hg)	EPA 245.7 / EPA 245.1
HG-ULT-DIS-CV-ED	Water	Mercury (Hg) - Dissolved	EPA 245.7 / EPA 245.1
IONBALANCE-ED	Water	Ion Balance Calculation	APHA 1030E
MET1-ULTRA-DIS-ED	Water	Ultra-Low Metals - Dissolved	EPA 6020
MET1-ULTRA-ED	Water	Ultra-Low Metals	EPA 6020
MET2-ULTRA-DIS-ED	Water	Major Metals - Dissolved	EPA 200.7
MET2-ULTRA-ED	Water	Major Metals	EPA 200.7
METAL-CCME-ED	Soil	Metals in Soil - CCME List	EPA 6020
N-TOT-LECO-SK	Soil	Total Nitrogen by combustion method	SSSA (1996) p. 973-974
The sample is introduced into a quartz tube where it undergoes combustion at 900 °C in the presence of oxygen. Combustion gases are first carried through a catalyst bed in the bottom of the combustion tube, where oxidation is completed and then carried through a reducing agent (copper), where the nitrogen oxides are reduced to elemental nitrogen. This mixture of N2, CO2, and H2O is then passed through an absorber column containing magnesium perchlorate to remove water. N2 and CO2 gases are then separated in a gas chromatographic column and detected by thermal conductivity.			
Reference: Bremner, J.M. 1996. Nitrogen - Total (Dumas Methods). P. 1088 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5			
N-TOTKJ-ED	Water	Total Kjeldahl Nitrogen	APHA 4500N-C -Dig.-Auto-Colorimetry
N2N3-ED	Water	Nitrate+Nitrite-N	APHA 4500 NO3-H - COLORIMETRY
NH4-ED	Water	Ammonia-N	APHA4500NH3F Colorimetry
NO2-ED	Water	Nitrite-N	APHA 4500 NO2B-Colorimetry
NO3-ED	Water	Nitrate-N	APHA 4500 NO3H-Colorimetry
OGG-IR-ED	Water	Oil & Grease-(IR)	APHA 5520 C-Liq-Liq Extraction Infrared
P-TOTAL-LOW-ED	Water	Phosphorus, Total	APHA 4500 P B,E-Auto-Colorimetry

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
P-TOTALDIS-LOW-ED	Water	Phosphorus, Dissolved	APHA 4500 P B,E - AUTO-COLORIMETRY

PAH-ALK-ED Soil PAHs & Alkylated PAHs EPA 3540/8270-GC/MS

NOTE: The following PAH parameter results are determined via a semi-quantitative method. To be used for research purposes only.

C1 B(a)A/chrysene
 C1B(b&kF/B(a)P
 C1 acenaphthene
 C1 biphenyl
 C1dibenzothiophene
 C1 fluoranthene/pyrene
 C1 fluorene
 C1 naphthalene
 C1 phenanthrene/anthracene
 C2 B(a)A/chrysene
 C2 b(b&k)F/b(a)P
 C2 biphenyl
 C2 dibenzothiophene
 C2 fluoranthene/pyrene
 C2 fluorene
 C2 naphthalene
 C2 phenanthrene/anth.
 C3 dibenzothiophene
 C3 fluorene
 C3 naphthalene
 C3 phenanthrene/anth.
 C4 dibenzothiophene
 C4 naphthalene
 C4 phenanthrene/anth.

Note: Results based on dry weight.

PH/EC/ALK-ED	Water	pH, Conductivity and Total Alkalinity	APHA 4500-H, 2510, 2320
PHENOLS-4AAP-ED	Water	Phenols (4AAP)	AB ENV.06537-COLORIMETRIC

PO4-LOW-ED	Water	Orthophosphate (PO4-P)	APHA 4500 P B,E-Auto-Colorimetry
PREP-MOISTURE-ED	Soil	% Moisture	Oven dry 105C-Gravimetric
PSA-1-SK	Soil	Particle Size Analysis: Hydrometer	CSSS (1993) P.508-509

The hydrometer method is based on Stokes' Law which relates the radius of soil particles to the velocity of their sedimentation.

Air-dried soil is wetted with a dispersing agent and then mixed with water in a sedimentation cylinder. The soil is allowed to settle and particle density readings(g/L) are taken after 40 seconds and 6 hours. These readings correspond to silt + clay and clay content respectively. Sand content is calculated by difference.

Reference:

Carter, M.R., 1993. Soil sampling and methods of analysis. Can. Soc. Soil Sci. Ottawa Ont. 508-509

Kalra, Y.P., Maynard, D.G. 1991. Methods manual for forest soil and plant analysis. Forestry Canada. p. 42-45.

SOLIDS-TDS-ED	Water	Total Dissolved Solids	APHA 2540 C
SOLIDS-TOTSUS-ED	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
TL-ULTRA-DIS-ED	Water	Thallium (Tl)-Dissolved	EPA 6020

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
TL-ULTRA-ED	Water	Thallium (Tl)	EPA 6020

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.
The last two letters of the above ALS Test Code column indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
CL	ALS LABORATORY GROUP - CALGARY, ALBERTA, CANADA	ED	ALS LABORATORY GROUP - EDMONTON, ALBERTA, CANADA

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)	
FM		ALS LABORATORY GROUP - FORT MCMURRAY, ALBERTA, CANADA	SK	ALS LABORATORY GROUP - SASKATOON, SASKATCHEWAN, CANADA

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
WP		ALS LABORATORY GROUP - WINNIPEG, MANITOBA, CANADA	

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

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.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.



Environmental Division

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 1 of 23

Client: GOLDER ASSOCIATES LTD
195 PEMBERTON AVE
NORTH VANCOUVER BC V7P 2R4
Contact: KERRIE SERBEN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX,F1-CL Water								
Batch	R696723							
WG803781-2	LCS							
Benzene			108		%		81-120	20-JUL-08
Toluene			107		%		82-119	20-JUL-08
EthylBenzene			92		%		82-120	20-JUL-08
Xylenes			98		%		81-124	20-JUL-08
F1(C6-C10)			94		%		80-119	20-JUL-08
WG803781-1	MB							
Benzene			<0.00050		mg/L		0.0005	20-JUL-08
Toluene			<0.00050		mg/L		0.0005	20-JUL-08
EthylBenzene			<0.00050		mg/L		0.0005	20-JUL-08
Xylenes			<0.00050		mg/L		0.0005	20-JUL-08
F1(C6-C10)			<0.1		mg/L		0.1	20-JUL-08
WG803781-3	MS	WG803781-1						
Benzene			107		%		74-127	19-JUL-08
Toluene			107		%		68-131	19-JUL-08
EthylBenzene			94		%		67-132	19-JUL-08
Xylenes			100		%		68-136	19-JUL-08
F1(C6-C10)			92		%		66-127	19-JUL-08
C-DIS-ORG-LOW-ED Water								
Batch	R693810							
WG800255-37	DUP	L656419-13						
Dissolved Organic Carbon		<0.5	<0.5	RPD-NA	mg/L	N/A	10	19-JUL-08
WG800255-1	LCS							
Dissolved Organic Carbon			103		%		88-108	14-JUL-08
WG800255-4	LCS							
Dissolved Organic Carbon			117		%		63-138	14-JUL-08
WG800255-2	MB							
Dissolved Organic Carbon			<0.5		mg/L		0.5	17-JUL-08
C-TOT-ED Water								
Batch	R697242							
WG803372-3	DUP	L656419-7						
Total Carbon		11	10		mg/L	1.1	16	18-JUL-08
WG803372-2	LCS							
Total Carbon			103		%		90-109	18-JUL-08
WG803372-1	MB							
Total Carbon			<1		mg/L		1	18-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 2 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-TOT-ED								
Water								
Batch	R697242							
WG803372-4	MS	L656419-7						
Total Carbon			108		%		71-123	18-JUL-08
C-TOT-ORG-ED								
Water								
Batch	R693810							
WG800255-1	LCS							
Total Organic Carbon			103		%		88-108	14-JUL-08
WG800255-4	LCS							
Total Organic Carbon			117		%		94-135	14-JUL-08
WG800255-2	MB							
Total Organic Carbon			<1		mg/L		1	14-JUL-08
WG800255-3	MB							
Total Organic Carbon			<1		mg/L		1	14-JUL-08
WG800255-10	MS	L653960-20						
Total Organic Carbon			103		%		77-116	15-JUL-08
WG800255-12	MS	L653960-31						
Total Organic Carbon			99		%		77-116	15-JUL-08
WG800255-16	MS	L654015-10						
Total Organic Carbon			108		%		77-116	15-JUL-08
WG800255-20	MS	L654888-1						
Total Organic Carbon			103		%		77-116	16-JUL-08
WG800255-22	MS	L652131-1						
Total Organic Carbon			108		%		77-116	17-JUL-08
WG800255-24	MS	L655451-1						
Total Organic Carbon			N/A	MS-B	%		-	17-JUL-08
WG800255-26	MS	L656487-2						
Total Organic Carbon			104		%		77-116	17-JUL-08
WG800255-28	MS	L655754-1						
Total Organic Carbon			95		%		77-116	18-JUL-08
WG800255-30	MS	L656087-1						
Total Organic Carbon			92		%		77-116	18-JUL-08
WG800255-32	MS	L655962-5						
Total Organic Carbon			104		%		77-116	19-JUL-08
WG800255-34	MS	L655962-15						
Total Organic Carbon			103		%		77-116	19-JUL-08
WG800255-6	MS	L653960-1						
Total Organic Carbon			97		%		77-116	14-JUL-08
WG800255-8	MS	L653960-10						

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 3 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-TOT-ORG-ED	Water							
Batch R693810								
WG800255-8 MS		L653960-10						
Total Organic Carbon			108		%		77-116	14-JUL-08
CHLOROPHYLL A-FM	Water							
Batch R698067								
WG804950-2 LCS								
Chlorophyll a			127		%		63-138	23-JUL-08
WG804950-1 MB								
Chlorophyll a			<1		ug/L		1	23-JUL-08
CL-ED	Water							
Batch R696258								
WG802916-2 LCS								
Chloride (Cl)			104		%		94-109	18-JUL-08
WG802916-3 LCS								
Chloride (Cl)			99		%		93-113	18-JUL-08
WG802916-1 MB								
Chloride (Cl)			<1		mg/L		1	18-JUL-08
WG802916-11 MS		L657441-4						
Chloride (Cl)			97		%		87-117	18-JUL-08
WG802916-13 MS		L657747-2						
Chloride (Cl)			95		%		87-117	18-JUL-08
WG802916-5 MS		L656988-13						
Chloride (Cl)			106		%		87-117	18-JUL-08
WG802916-7 MS		L656997-3						
Chloride (Cl)			N/A	MS-B	%		-	18-JUL-08
WG802916-9 MS		L657053-4						
Chloride (Cl)			99		%		87-117	18-JUL-08
CN-TOT-WP	Water							
Batch R698425								
WG805918-3 CCV								
Cyanide, Total			90		%		63-138	23-JUL-08
WG805918-2 CVS								
Cyanide, Total			94		%		80-120	23-JUL-08
WG805918-5 IRM		61-CN						
Cyanide, Total			88.92		%		75-125	23-JUL-08
WG805918-1 MB								
Cyanide, Total			<0.002		mg/L		0.002	23-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 4 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ETL-ROUTINE-ICP-ED		Water						
Batch	R695511							
WG802337-3	CRM	ION-915_WATER						
Calcium (Ca)			104		%		96-116	17-JUL-08
Magnesium (Mg)			108		%		91-113	17-JUL-08
Sulfate (SO4)			105		%		87-118	17-JUL-08
WG802337-2	LCS							
Calcium (Ca)			98		%		86-106	17-JUL-08
Potassium (K)			94		%		86-106	17-JUL-08
Magnesium (Mg)			102		%		88-108	17-JUL-08
Sodium (Na)			95		%		86-106	17-JUL-08
WG802337-1	MB							
Calcium (Ca)			<0.5		mg/L		2.5	17-JUL-08
Potassium (K)			<0.5		mg/L		2.5	17-JUL-08
Magnesium (Mg)			<0.1		mg/L		0.5	17-JUL-08
Sodium (Na)			<1		mg/L		5	17-JUL-08
Sulfate (SO4)			<0.5		mg/L		2.5	17-JUL-08
WG802337-11	MS	L656487-2						
Calcium (Ca)			103		%		88-116	17-JUL-08
Potassium (K)			97		%		83-115	17-JUL-08
Magnesium (Mg)			105		%		91-117	17-JUL-08
Sodium (Na)			100		%		81-116	17-JUL-08
Sulfate (SO4)			97		%		82-111	17-JUL-08
WG802337-13	MS	L656606-2						
Calcium (Ca)			104		%		88-116	17-JUL-08
Potassium (K)			99		%		83-115	17-JUL-08
Magnesium (Mg)			106		%		91-117	17-JUL-08
Sodium (Na)			101		%		81-116	17-JUL-08
Sulfate (SO4)			95		%		82-111	17-JUL-08
WG802337-7	MS	L656684-6						
Calcium (Ca)			105		%		88-116	17-JUL-08
Potassium (K)			98		%		83-115	17-JUL-08
Magnesium (Mg)			108		%		91-117	17-JUL-08
Sodium (Na)			95		%		81-116	17-JUL-08
Sulfate (SO4)			97		%		82-111	17-JUL-08
WG802337-9	MS	L656145-1						
Calcium (Ca)			103		%		88-116	17-JUL-08
Potassium (K)			100		%		83-115	17-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 5 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ETL-ROUTINE-ICP-ED		Water						
Batch	R695511							
WG802337-9	MS	L656145-1						
Magnesium (Mg)			108		%		91-117	17-JUL-08
Sodium (Na)			102		%		81-116	17-JUL-08
Sulfate (SO4)			94		%		82-111	17-JUL-08
F2,F3,F4-CL		Water						
Batch	R696825							
WG803787-2	MB							
F2 (>C10-C16)			<0.05		mg/L		0.05	20-JUL-08
F3 (C16-C34)			<0.05		mg/L		0.05	20-JUL-08
F4 (C34-C50)			<0.05		mg/L		0.05	20-JUL-08
WG803787-3	MS	WG803787-2						
F2 (>C10-C16)			85		%		61-140	20-JUL-08
F3 (C16-C34)			85		%		51-125	20-JUL-08
F4 (C34-C50)			85		%		51-125	20-JUL-08
WG803787-5	MS	WG803787-2						
F2 (>C10-C16)			77		%		61-140	20-JUL-08
F3 (C16-C34)			77		%		51-125	20-JUL-08
F4 (C34-C50)			77		%		51-125	20-JUL-08
WG803787-4	MSD	WG803787-3						
F2 (>C10-C16)			85	88	%	3.9	33	20-JUL-08
F3 (C16-C34)			85	88	%	3.9	33	20-JUL-08
F4 (C34-C50)			85	88	%	3.9	33	20-JUL-08
WG803787-6	MSD	WG803787-5						
F2 (>C10-C16)			77	82	%	6.0	33	20-JUL-08
F3 (C16-C34)			77	82	%	6.0	33	20-JUL-08
F4 (C34-C50)			77	82	%	6.0	33	20-JUL-08
HG-ULT-CV-ED		Water						
Batch	R700990							
WG808832-2	LCS							
Mercury (Hg)-Total			97		%		63-135	29-JUL-08
WG808832-3	LCSD	WG808832-2						
Mercury (Hg)-Total			97	98	%	0.31	20	29-JUL-08
WG808832-1	MB							
Mercury (Hg)-Total			<0.00002		mg/L		0.00002	29-JUL-08
HG-ULT-DIS-CV-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 6 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-ULT-DIS-CV-ED								
Water								
Batch	R700990							
WG808832-2	LCS							
Mercury (Hg)-Dissolved			97		%		63-135	29-JUL-08
WG808832-3	LCSD	WG808832-2						
Mercury (Hg)-Dissolved		97	98		%	0.31	20	29-JUL-08
WG808832-1	MB							
Mercury (Hg)-Dissolved			<0.00002		mg/L		0.00002	29-JUL-08
WG808832-7	MS	L602825-52						
Mercury (Hg)-Dissolved			90		%		71-131	29-JUL-08
MET1-ULTRA-DIS-ED								
Water								
Batch	R700572							
WG806952-2	CRM	1643E_WATER						
Aluminum (Al)			99		%		85-125	28-JUL-08
Arsenic (As)			95		%		88-109	28-JUL-08
Boron (B)			96		%		80-116	28-JUL-08
Beryllium (Be)			98		%		74-116	28-JUL-08
Calcium (Ca)			95		%		82-106	28-JUL-08
Cadmium (Cd)			103		%		93-112	28-JUL-08
Cobalt (Co)			103		%		90-110	28-JUL-08
Chromium (Cr)			104		%		83-118	28-JUL-08
Copper (Cu)			96		%		89-112	28-JUL-08
Potassium (K)			92		%		88-120	28-JUL-08
Magnesium (Mg)			88		%		86-109	28-JUL-08
Manganese (Mn)			97		%		81-120	28-JUL-08
Molybdenum (Mo)			100		%		91-112	28-JUL-08
Sodium (Na)			97		%		86-105	28-JUL-08
Nickel (Ni)			98		%		88-110	28-JUL-08
Lead (Pb)			105		%		89-114	28-JUL-08
Antimony (Sb)			100		%		89-112	28-JUL-08
Selenium (Se)			98		%		76-112	28-JUL-08
Strontium (Sr)			103		%		87-109	28-JUL-08
Vanadium (V)			98		%		89-112	28-JUL-08
Zinc (Zn)			103		%		84-129	28-JUL-08
Barium (Ba)			93		%		88-109	29-JUL-08
WG806952-1	MB							
Silver (Ag)			<0.0001		mg/L		0.0005	28-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 7 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-DIS-ED		Water						
Batch R700572								
WG806952-1 MB								
Aluminum (Al)			<0.0003		mg/L		0.0015	28-JUL-08
Arsenic (As)			<0.00003		mg/L		0.00015	28-JUL-08
Boron (B)			<0.001		mg/L		0.005	28-JUL-08
Barium (Ba)			<0.00005		mg/L		0.00025	28-JUL-08
Beryllium (Be)			<0.0002		mg/L		0.0002	28-JUL-08
Calcium (Ca)			<0.02		mg/L		0.02	28-JUL-08
Cadmium (Cd)			<0.00005		mg/L		0.00025	28-JUL-08
Cobalt (Co)			<0.0001		mg/L		0.0005	28-JUL-08
Chromium (Cr)			<0.00006		mg/L		0.0003	28-JUL-08
Copper (Cu)			<0.0006		mg/L		0.003	28-JUL-08
Potassium (K)			<0.02		mg/L		0.1	28-JUL-08
Magnesium (Mg)			<0.004		mg/L		0.02	28-JUL-08
Manganese (Mn)			<0.0001		mg/L		0.0005	28-JUL-08
Molybdenum (Mo)			<0.00006		mg/L		0.0003	28-JUL-08
Sodium (Na)			<0.005		mg/L		0.025	28-JUL-08
Nickel (Ni)			<0.00006		mg/L		0.0003	28-JUL-08
Lead (Pb)			<0.00005		mg/L		0.00025	28-JUL-08
Antimony (Sb)			<0.00003		mg/L		0.00015	28-JUL-08
Selenium (Se)			<0.0001		mg/L		0.0005	28-JUL-08
Strontium (Sr)			<0.0001		mg/L		0.0005	28-JUL-08
Uranium (U)			<0.00005		mg/L		0.00025	28-JUL-08
Vanadium (V)			<0.00005		mg/L		0.00025	28-JUL-08
Zinc (Zn)			<0.0008		mg/L		0.004	28-JUL-08
MET1-ULTRA-ED		Water						
Batch R700572								
WG806952-2 CRM		1643E_WATER						
Silver (Ag)			91		%		80-108	28-JUL-08
Aluminum (Al)			99		%		90-122	28-JUL-08
Arsenic (As)			95		%		84-105	28-JUL-08
Boron (B)			96		%		80-116	28-JUL-08
Beryllium (Be)			98		%		77-110	28-JUL-08
Calcium (Ca)			95		%		82-106	28-JUL-08
Cadmium (Cd)			103		%		87-109	28-JUL-08
Cobalt (Co)			103		%		90-110	28-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 8 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-ED		Water						
Batch	R700572							
WG806952-2	CRM	1643E_WATER						
Cobalt (Co)			103		%		90-110	28-JUL-08
Chromium (Cr)			104		%		84-118	28-JUL-08
Copper (Cu)			96		%		89-112	28-JUL-08
Potassium (K)			92		%		88-119	28-JUL-08
Magnesium (Mg)			88		%		86-109	28-JUL-08
Manganese (Mn)			97		%		81-120	28-JUL-08
Molybdenum (Mo)			100		%		88-111	28-JUL-08
Sodium (Na)			97		%		86-105	28-JUL-08
Nickel (Ni)			98		%		88-110	28-JUL-08
Lead (Pb)			105		%		89-110	28-JUL-08
Antimony (Sb)			100		%		86-108	28-JUL-08
Selenium (Se)			98		%		76-112	28-JUL-08
Strontium (Sr)			103		%		87-109	28-JUL-08
Vanadium (V)			98		%		87-109	28-JUL-08
Zinc (Zn)			103		%		65-133	28-JUL-08
Barium (Ba)			93		%		88-109	29-JUL-08
WG806952-3	DUP	L656419-13						
Silver (Ag)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	33	28-JUL-08
Aluminum (Al)		<0.0003	<0.0003	RPD-NA	mg/L	N/A	20	28-JUL-08
Arsenic (As)		<0.00003	<0.00003	RPD-NA	mg/L	N/A	11	28-JUL-08
Boron (B)		<0.001	<0.001	RPD-NA	mg/L	N/A	10	28-JUL-08
Barium (Ba)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	10	28-JUL-08
Beryllium (Be)		<0.0002	<0.0002	RPD-NA	mg/L	N/A	26	28-JUL-08
Calcium (Ca)		<0.02	<0.02	RPD-NA	mg/L	N/A	9.8	28-JUL-08
Cadmium (Cd)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	31	28-JUL-08
Cobalt (Co)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	12	28-JUL-08
Chromium (Cr)		<0.00006	<0.00006	RPD-NA	mg/L	N/A	18	28-JUL-08
Copper (Cu)		<0.0006	<0.0006	RPD-NA	mg/L	N/A	17	28-JUL-08
Potassium (K)		<0.02	<0.02	RPD-NA	mg/L	N/A	9.8	28-JUL-08
Magnesium (Mg)		<0.004	<0.004	RPD-NA	mg/L	N/A	9.8	28-JUL-08
Manganese (Mn)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	10	28-JUL-08
Molybdenum (Mo)		<0.00006	<0.00006	RPD-NA	mg/L	N/A	10	28-JUL-08
Sodium (Na)		<0.005	<0.005	RPD-NA	mg/L	N/A	9.8	28-JUL-08
Nickel (Ni)		<0.00006	<0.00006	RPD-NA	mg/L	N/A	10	28-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 9 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-ED		Water						
Batch	R700572							
WG806952-3	DUP	L656419-13						
Lead (Pb)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	12	28-JUL-08
Antimony (Sb)		<0.00003	<0.00003	RPD-NA	mg/L	N/A	10	28-JUL-08
Selenium (Se)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	21	28-JUL-08
Strontium (Sr)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	20	28-JUL-08
Uranium (U)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	10	28-JUL-08
Vanadium (V)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	24	28-JUL-08
Zinc (Zn)		<0.0008	<0.0008	RPD-NA	mg/L	N/A	40	28-JUL-08
WG806952-6	DUP	L656419-8						
Silver (Ag)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	33	28-JUL-08
Aluminum (Al)		0.0029	0.0030	J	mg/L	0.0001	0.0012	28-JUL-08
Arsenic (As)		0.00115	0.00118		mg/L	2.1	11	28-JUL-08
Boron (B)		0.002	0.002	J	mg/L	0.000	0.004	28-JUL-08
Barium (Ba)		0.0132	0.0130		mg/L	1.4	10	28-JUL-08
Beryllium (Be)		<0.0002	<0.0002	RPD-NA	mg/L	N/A	26	28-JUL-08
Calcium (Ca)		13.9	13.8		mg/L	0.17	9.8	28-JUL-08
Cadmium (Cd)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	31	28-JUL-08
Cobalt (Co)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	12	28-JUL-08
Chromium (Cr)		<0.00006	<0.00006	RPD-NA	mg/L	N/A	18	28-JUL-08
Copper (Cu)		0.0012	0.0012	J	mg/L	0.0000	0.0024	28-JUL-08
Potassium (K)		0.90	0.91		mg/L	0.82	9.8	28-JUL-08
Magnesium (Mg)		1.46	1.44		mg/L	1.3	9.8	28-JUL-08
Manganese (Mn)		0.0072	0.0072		mg/L	0.065	10	28-JUL-08
Molybdenum (Mo)		0.00011	0.00011	J	mg/L	0.00000	0.00024	28-JUL-08
Sodium (Na)		2.46	2.45		mg/L	0.40	9.8	28-JUL-08
Nickel (Ni)		0.00061	0.00057	J	mg/L	0.00005	0.00024	28-JUL-08
Lead (Pb)		0.00010	0.00010	J	mg/L	0.00000	0.0002	28-JUL-08
Antimony (Sb)		<0.00003	<0.00003	RPD-NA	mg/L	N/A	10	28-JUL-08
Selenium (Se)		0.0002	0.0002	J	mg/L	0.0000	0.0004	28-JUL-08
Strontium (Sr)		0.0749	0.0753		mg/L	0.51	20	28-JUL-08
Uranium (U)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	10	28-JUL-08
Vanadium (V)		0.00013	0.00012	J	mg/L	0.00001	0.0002	28-JUL-08
Zinc (Zn)		<0.0008	<0.0008	RPD-NA	mg/L	N/A	40	28-JUL-08
WG806952-1	MB							
Silver (Ag)			<0.0001		mg/L		0.0005	28-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 10 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-ED		Water						
Batch	R700572							
WG806952-1	MB							
Aluminum (Al)			<0.0003		mg/L		0.0015	28-JUL-08
Arsenic (As)			<0.00003		mg/L		0.00015	28-JUL-08
Boron (B)			<0.001		mg/L		0.005	28-JUL-08
Barium (Ba)			<0.00005		mg/L		0.00025	28-JUL-08
Beryllium (Be)			<0.0002		mg/L		0.001	28-JUL-08
Calcium (Ca)			<0.02		mg/L		0.1	28-JUL-08
Cadmium (Cd)			<0.00005		mg/L		0.00025	28-JUL-08
Cobalt (Co)			<0.0001		mg/L		0.0005	28-JUL-08
Chromium (Cr)			<0.00006		mg/L		0.0003	28-JUL-08
Copper (Cu)			<0.0006		mg/L		0.003	28-JUL-08
Potassium (K)			<0.02		mg/L		0.1	28-JUL-08
Magnesium (Mg)			<0.004		mg/L		0.02	28-JUL-08
Manganese (Mn)			<0.0001		mg/L		0.0005	28-JUL-08
Molybdenum (Mo)			<0.00006		mg/L		0.0003	28-JUL-08
Sodium (Na)			<0.005		mg/L		0.025	28-JUL-08
Nickel (Ni)			<0.00006		mg/L		0.0003	28-JUL-08
Lead (Pb)			<0.00005		mg/L		0.00025	28-JUL-08
Antimony (Sb)			<0.00003		mg/L		0.00015	28-JUL-08
Selenium (Se)			<0.0001		mg/L		0.0005	28-JUL-08
Strontium (Sr)			<0.0001		mg/L		0.0005	28-JUL-08
Uranium (U)			<0.00005		mg/L		0.00025	28-JUL-08
Vanadium (V)			<0.00005		mg/L		0.00025	28-JUL-08
Zinc (Zn)			<0.0008		mg/L		0.004	28-JUL-08
MET2-ULTRA-DIS-ED		Water						
Batch	R700496							
WG807705-1	MB							
Iron (Fe)			<0.005		mg/L		0.025	26-JUL-08
Batch	R700626							
WG808187-1	MB							
Iron (Fe)			<0.005		mg/L		0.025	28-JUL-08
WG808187-3	MS	L656988-1						
Iron (Fe)			99		%		88-111	28-JUL-08
MET2-ULTRA-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 11 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET2-ULTRA-ED								
Water								
Batch	R700496							
WG807705-1	MB							
Iron (Fe)			<0.005		mg/L		0.025	26-JUL-08
WG807705-5	MS	L656997-2	100		%		78-117	26-JUL-08
Iron (Fe)								
Batch	R700626							
WG808187-1	MB							
Iron (Fe)			<0.005		mg/L		0.025	28-JUL-08
WG808187-5	MS	L656988-13	101		%		78-117	28-JUL-08
Iron (Fe)								
N-TOTKJ-ED								
Water								
Batch	R696185							
WG802964-6	DUP	L656419-7						
Total Kjeldahl Nitrogen		0.3	0.4	J	mg/L	0.1	0.8	18-JUL-08
WG802964-2	LCS		96		%		81-114	18-JUL-08
Total Kjeldahl Nitrogen								
WG802964-3	LCS		113		%		69-131	18-JUL-08
Total Kjeldahl Nitrogen								
WG802964-4	LCS		104		%		83-118	18-JUL-08
Total Kjeldahl Nitrogen								
WG802964-1	MB		<0.2		mg/L		0.2	18-JUL-08
Total Kjeldahl Nitrogen								
Batch	R697582							
WG804710-2	LCS		90		%		81-114	22-JUL-08
Total Kjeldahl Nitrogen								
WG804710-3	LCS		99		%		69-131	22-JUL-08
Total Kjeldahl Nitrogen								
WG804710-4	LCS		98		%		83-118	22-JUL-08
Total Kjeldahl Nitrogen								
WG804710-1	MB		<0.2		mg/L		0.2	22-JUL-08
Total Kjeldahl Nitrogen								
N2N3-ED								
Water								
Batch	R696400							
WG802927-3	LCS		97		%		87-113	18-JUL-08
Nitrate+Nitrite-N								
WG802927-2	MB		<0.1		mg/L		0.1	18-JUL-08
Nitrate+Nitrite-N								
WG802927-10	MS	L656677-7	92		%		84-118	18-JUL-08
Nitrate+Nitrite-N								

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 12 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
N2N3-ED		Water						
Batch	R696400							
WG802927-10	MS	L656677-7						
Nitrate+Nitrite-N			92		%		84-118	18-JUL-08
WG802927-4	MS	L656688-2						
Nitrate+Nitrite-N			92		%		84-118	18-JUL-08
WG802927-6	MS	L657338-1						
Nitrate+Nitrite-N			104		%		84-118	18-JUL-08
WG802927-8	MS	L657053-4						
Nitrate+Nitrite-N			98		%		84-118	18-JUL-08
NH4-ED		Water						
Batch	R696029							
WG802786-2	LCS							
Ammonia-N			102		%		91-112	18-JUL-08
WG802786-1	MB							
Ammonia-N			<0.05		mg/L		0.05	18-JUL-08
WG802786-5	MS	L656419-13						
Ammonia-N			96		%		75-122	18-JUL-08
WG802786-7	MS	L656997-8						
Ammonia-N			113		%		75-122	18-JUL-08
WG802786-9	MS	L657288-7						
Ammonia-N			101		%		75-122	18-JUL-08
NO2-ED		Water						
Batch	R696400							
WG802927-3	LCS							
Nitrite-N			96		%		94-114	18-JUL-08
WG802927-2	MB							
Nitrite-N			<0.05		mg/L		0.05	18-JUL-08
WG802927-10	MS	L656677-7						
Nitrite-N			100		%		88-113	18-JUL-08
WG802927-4	MS	L656688-2						
Nitrite-N			102		%		88-113	18-JUL-08
WG802927-6	MS	L657338-1						
Nitrite-N			110		%		88-113	18-JUL-08
WG802927-8	MS	L657053-4						
Nitrite-N			102		%		88-113	18-JUL-08
OGG-IR-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 13 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OGG-IR-ED								
Water								
Batch	R697626							
WG805028-2	LCS							
Oil & Grease-(IR)			121		%		91-146	22-JUL-08
WG805028-1	MB							
Oil & Grease-(IR)			<0.5		mg/L		0.5	22-JUL-08
P-TOTAL-LOW-ED								
Water								
Batch	R699790							
WG806660-3	LCS							
Phosphorus, Total			108		%		80-116	25-JUL-08
WG806660-2	MB							
Phosphorus, Total			<0.001		mg/L		0.001	25-JUL-08
WG806660-10	MS	L656988-3						
Phosphorus, Total			107		%		70-130	25-JUL-08
WG806660-11	MS	L656988-7						
Phosphorus, Total			95		%		70-130	25-JUL-08
WG806660-12	MS	L656995-4						
Phosphorus, Total			107		%		70-130	25-JUL-08
WG806660-13	MS	L656995-6						
Phosphorus, Total			104		%		70-130	25-JUL-08
WG806660-9	MS	L656988-1						
Phosphorus, Total			94		%		70-130	25-JUL-08
Batch	R701199							
WG808530-3	LCS							
Phosphorus, Total			102		%		80-116	29-JUL-08
WG808530-2	MB							
Phosphorus, Total			<0.001		mg/L		0.001	29-JUL-08
WG808530-10	MS	L658692-8						
Phosphorus, Total			111		%		70-130	29-JUL-08
WG808530-11	MS	L658692-19						
Phosphorus, Total			109		%		70-130	29-JUL-08
WG808530-8	MS	L658692-1						
Phosphorus, Total			107		%		70-130	29-JUL-08
WG808530-9	MS	L658692-3						
Phosphorus, Total			108		%		70-130	29-JUL-08
P-TOTALDIS-LOW-ED								
Water								
Batch	R699790							
WG806660-3	LCS							
Phosphorus, Total Dissolved			108		%		80-116	25-JUL-08
WG806660-2	MB							

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 14 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-TOTALDIS-LOW-ED								
Water								
Batch	R699790							
WG806660-2	MB							
Phosphorus, Total Dissolved			<0.001		mg/L		0.001	25-JUL-08
Batch	R701199							
WG808530-3	LCS							
Phosphorus, Total Dissolved			102		%		80-116	29-JUL-08
WG808530-2	MB							
Phosphorus, Total Dissolved			<0.001		mg/L		0.001	29-JUL-08
PH/EC/ALK-ED								
Water								
Batch	R696087							
WG802797-2	LCS							
Conductivity (EC)			104		%		94-106	18-JUL-08
WG802797-3	LCS							
pH			7.0		pH		6.9-7.1	18-JUL-08
WG802797-4	LCS							
Alkalinity, Total (as CaCO3)			104		%		90-110	18-JUL-08
WG802797-1	MB							
Bicarbonate (HCO3)			<5		mg/L		5	18-JUL-08
Carbonate (CO3)			<5		mg/L		5	18-JUL-08
Hydroxide (OH)			<5		mg/L		5	18-JUL-08
Alkalinity, Total (as CaCO3)			<5		mg/L		5	18-JUL-08
PHENOLS-4AAP-ED								
Water								
Batch	R697152							
WG804282-2	LCS							
Phenols (4AAP)			106		%		85-115	21-JUL-08
WG804282-1	MB							
Phenols (4AAP)			<0.001		mg/L		0.001	21-JUL-08
WG804282-4	MS	L655644-9						
Phenols (4AAP)			103		%		76-124	21-JUL-08
WG804282-5	MS	L655793-10						
Phenols (4AAP)			101		%		76-124	21-JUL-08
WG804282-7	MS	L654683-1						
Phenols (4AAP)			102		%		76-124	21-JUL-08
WG804282-9	MS	L655626-1						
Phenols (4AAP)			98		%		76-124	21-JUL-08
PO4-LOW-ED								
Water								

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 15 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PO4-LOW-ED		Water						
Batch	R696726							
WG803398-4	DUP	L656419-12						
Orthophosphate (PO4-P)		<0.001	<0.001	RPD-NA	mg/L	N/A	11	18-JUL-08
WG803398-3	LCS							
Orthophosphate (PO4-P)			101		%		91-108	18-JUL-08
WG803398-2	MB							
Orthophosphate (PO4-P)			<0.001		mg/L		0.001	18-JUL-08
WG803398-11	MS	L656997-4						
Orthophosphate (PO4-P)			103		%		82-116	18-JUL-08
WG803398-5	MS	L656419-13						
Orthophosphate (PO4-P)			102		%		82-116	18-JUL-08
WG803398-8	MS	L657438-1						
Orthophosphate (PO4-P)			103		%		82-116	18-JUL-08
SOLIDS-TDS-ED		Water						
Batch	R697064							
WG803114-2	LCS							
Total Dissolved Solids			98		%		87-112	21-JUL-08
WG803114-1	MB							
Total Dissolved Solids			<5		mg/L		5	21-JUL-08
SOLIDS-TOTSUS-ED		Water						
Batch	R696246							
WG802805-2	LCS							
Total Suspended Solids			92		%		82-111	18-JUL-08
WG802805-1	MB							
Total Suspended Solids			<3		mg/L		3	18-JUL-08
TL-ULTRA-DIS-ED		Water						
Batch	R700572							
WG806952-2	CRM	1643E_WATER						
Thallium (Tl)-Dissolved			101		%		79-126	28-JUL-08
WG806952-1	MB							
Thallium (Tl)-Dissolved			<0.00003		mg/L		0.00015	28-JUL-08
TL-ULTRA-ED		Water						
Batch	R700572							
WG806952-2	CRM	1643E_WATER						
Thallium (Tl)-Total			101		%		90-110	28-JUL-08
WG806952-3	DUP	L656419-13						
Thallium (Tl)-Total		<0.00003	<0.00003	RPD-NA	mg/L	N/A	26	25-JUL-08
WG806952-6	DUP	L656419-8						

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 16 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TL-ULTRA-ED		Water						
Batch	R700572							
WG806952-6	DUP	L656419-8						
Thallium (Tl)-Total		<0.00003	<0.00003	RPD-NA	mg/L	N/A	26	25-JUL-08
WG806952-1	MB							
Thallium (Tl)-Total			<0.00003		mg/L		0.00015	28-JUL-08
C-INORG-ORG-SK		Soil						
Batch	R697682							
WG804380-1	DUP	L656419-4						
Inorganic Carbon		<0.1	<0.1	RPD-NA	%	N/A	12	22-JUL-08
CaCO3 Equivalent		<0.7	<0.7	RPD-NA	%	N/A	26	22-JUL-08
WG804380-2	IRM	0.4%IC						
Inorganic Carbon			0.4		%		0.3-0.5	22-JUL-08
C-TOT-LECO-SK		Soil						
Batch	R697743							
WG804387-1	DUP	L656419-4						
Total Carbon by Combustion		16.3	16.6		%	1.6	6.4	22-JUL-08
WG804387-2	IRM	1.6%C						
Total Carbon by Combustion			1.5		%		1.3-1.7	22-JUL-08
CN-TOT-WP		Soil						
Batch	R700696							
WG808481-3	CCV							
Cyanide, Total			106		%		90-110	28-JUL-08
WG808481-2	CVS							
Cyanide, Total			107		%		80-120	28-JUL-08
METAL-CCME-ED		Soil						
Batch	R697469							
WG803647-2	CRM	2702_SOIL						
Silver (Ag)			139		%		47-158	21-JUL-08
Arsenic (As)			100		%		92-111	21-JUL-08
Barium (Ba)			109		%		90-123	21-JUL-08
Beryllium (Be)			108		%		80-126	21-JUL-08
Cadmium (Cd)			100		%		87-117	21-JUL-08
Cobalt (Co)			104		%		90-120	21-JUL-08
Chromium (Cr)			108		%		86-119	21-JUL-08
Copper (Cu)			102		%		91-118	21-JUL-08
Mercury (Hg)			122		%		37-185	21-JUL-08
Molybdenum (Mo)			112		%		87-124	21-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 17 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
METAL-CCME-ED		Soil						
Batch	R697469							
WG803647-2	CRM	2702_SOIL						
Nickel (Ni)			103		%		89-121	21-JUL-08
Lead (Pb)			110		%		90-126	21-JUL-08
Selenium (Se)			106		%		78-123	21-JUL-08
Tin (Sn)			103		%		73-139	21-JUL-08
Uranium (U)			100		%		89-128	21-JUL-08
Vanadium (V)			95		%		86-116	21-JUL-08
Zinc (Zn)			94		%		81-112	21-JUL-08
WG803647-1	MB							
Silver (Ag)			<1		mg/kg		5	21-JUL-08
Arsenic (As)			<0.2		mg/kg		1	21-JUL-08
Barium (Ba)			<5		mg/kg		25	21-JUL-08
Beryllium (Be)			<1		mg/kg		1	21-JUL-08
Cadmium (Cd)			<0.5		mg/kg		2.5	21-JUL-08
Cobalt (Co)			<1		mg/kg		5	21-JUL-08
Chromium (Cr)			<0.5		mg/kg		2.5	21-JUL-08
Copper (Cu)			<2		mg/kg		10	21-JUL-08
Mercury (Hg)			<0.05		mg/kg		0.25	21-JUL-08
Molybdenum (Mo)			<1		mg/kg		5	21-JUL-08
Nickel (Ni)			<2		mg/kg		10	21-JUL-08
Lead (Pb)			<5		mg/kg		25	21-JUL-08
Antimony (Sb)			<0.2		mg/kg		1	21-JUL-08
Selenium (Se)			<0.2		mg/kg		1	21-JUL-08
Tin (Sn)			<5		mg/kg		25	21-JUL-08
Thallium (Tl)			<1		mg/kg		5	21-JUL-08
Uranium (U)			<2		mg/kg		2	21-JUL-08
Vanadium (V)			<1		mg/kg		5	21-JUL-08
Zinc (Zn)			<10		mg/kg		50	21-JUL-08
WG803647-4	MS	L657122-1						
Silver (Ag)			56		%		18-114	21-JUL-08
Arsenic (As)			103		%		91-114	21-JUL-08
Barium (Ba)			105		%		56-151	21-JUL-08
Beryllium (Be)			104		%		82-121	21-JUL-08
Cadmium (Cd)			107		%		92-117	21-JUL-08
Cobalt (Co)			94		%		87-112	21-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 18 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
METAL-CCME-ED		Soil						
Batch	R697469							
WG803647-4	MS	L657122-1						
Chromium (Cr)			103		%		85-117	21-JUL-08
Copper (Cu)			97		%		80-116	21-JUL-08
Mercury (Hg)			100		%		48-138	21-JUL-08
Molybdenum (Mo)			115		%		91-122	21-JUL-08
Nickel (Ni)			94		%		83-112	21-JUL-08
Lead (Pb)			109		%		83-119	21-JUL-08
Antimony (Sb)			108		%		90-118	21-JUL-08
Selenium (Se)			106		%		90-120	21-JUL-08
Tin (Sn)			106		%		92-118	21-JUL-08
Thallium (Tl)			113		%		83-126	21-JUL-08
Uranium (U)			105		%		86-117	21-JUL-08
Vanadium (V)			105		%		84-117	21-JUL-08
Zinc (Zn)			102		%		85-118	21-JUL-08
N-TOT-LECO-SK		Soil						
Batch	R697458							
WG804392-1	DUP	L656419-4						
Total Nitrogen by LECO		1.37	1.37	J	%	0.00	0.068	22-JUL-08
WG804392-2	IRM	SO2_SOIL						
PAH-ALK-ED		Soil						
Batch	R699517							
WG804171-2	DUP	L656419-5						
Acenaphthene		<0.005	<0.05	RPD-NA	mg/kg	N/A	36	25-JUL-08
Acenaphthylene		<0.005	<0.005	RPD-NA	mg/kg	N/A	38	25-JUL-08
Acridine		<0.005	<0.005	RPD-NA	mg/kg	N/A	39	25-JUL-08
Anthracene		<0.005	<0.005	RPD-NA	mg/kg	N/A	23	25-JUL-08
Benzo(a)anthracene		<0.005	<0.005	RPD-NA	mg/kg	N/A	45	25-JUL-08
Benzo(a)pyrene		<0.005	<0.005	RPD-NA	mg/kg	N/A	28	25-JUL-08
Benzo(b&j)fluoranthene		<0.005	<0.005	RPD-NA	mg/kg	N/A	39	25-JUL-08
Benzo(k)fluoranthene		<0.005	<0.005	RPD-NA	mg/kg	N/A	26	25-JUL-08
Benzo(ghi)perylene		<0.005	<0.005	RPD-NA	mg/kg	N/A	37	25-JUL-08
Biphenyl		<0.005	<0.005	RPD-NA	mg/kg	N/A	47	25-JUL-08
C2 sub'd B(a)A/chrysene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
C2 sub'd B(b&k)F/B(a)P		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
C2 sub'd biphenyl		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 19 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ALK-ED		Soil						
Batch	R699517							
WG804171-2	DUP	L656419-5						
C2 sub'd dibenzothiophene		<0.02	<0.02	RPD-NA	mg/kg	N/A	27	25-JUL-08
C2 sub'd fluorene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
C2 sub'd naphthalene		<0.02	<0.02	RPD-NA	mg/kg	N/A	49	25-JUL-08
C2 sub'd phenanthrene/anth.		<0.02	<0.02	RPD-NA	mg/kg	N/A	28	25-JUL-08
C3 sub'd dibenzothiophene		<0.02	<0.02	RPD-NA	mg/kg	N/A	27	25-JUL-08
C3 sub'd naphthalene		<0.02	<0.02	RPD-NA	mg/kg	N/A	34	25-JUL-08
C3 sub'd phenanthrene/anth.		<0.02	<0.02	RPD-NA	mg/kg	N/A	28	25-JUL-08
C4 sub'd dibenzothiophene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
C4 sub'd naphthalene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
C4 sub'd phenanthrene/anth.		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
Chrysene		<0.005	<0.005	RPD-NA	mg/kg	N/A	36	25-JUL-08
Dibenzo(a,h)anthracene		<0.005	<0.005	RPD-NA	mg/kg	N/A	40	25-JUL-08
Dibenzothiophene		<0.005	<0.005	RPD-NA	mg/kg	N/A	39	25-JUL-08
Fluoranthene		<0.005	<0.005	RPD-NA	mg/kg	N/A	46	25-JUL-08
Fluorene		<0.005	<0.005	RPD-NA	mg/kg	N/A	31	25-JUL-08
Indeno(c,d-123)pyrene		<0.005	<0.005	RPD-NA	mg/kg	N/A	35	25-JUL-08
Methyl B(a)A/chrysene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
Methyl B(b&k)F/B(a)P		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
Methyl acenaphthene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
Methyl biphenyl		<0.02	<0.02	RPD-NA	mg/kg	N/A	36	25-JUL-08
Methyl dibenzothiophene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
Methyl fluoranthene/pyrene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
Methyl fluorene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
1-Methylnaphthalene		0.007	0.006	RPD-NA	mg/kg	N/A	46	25-JUL-08
Methyl phenanthrene/anthracene		<0.02	<0.02	RPD-NA	mg/kg	N/A	22	25-JUL-08
Naphthalene		0.01	0.01	J	mg/kg	0.00	0.04	25-JUL-08
Phenanthrene		<0.005	<0.005	RPD-NA	mg/kg	N/A	38	25-JUL-08
Pyrene		<0.005	<0.005	RPD-NA	mg/kg	N/A	45	25-JUL-08
Quinoline		<0.005	<0.005	RPD-NA	mg/kg	N/A	39	25-JUL-08
C2 sub'd fluoranthene/pyrene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
C3 sub'd fluoranthene/pyrene		<0.02	<0.02	RPD-NA	mg/kg	N/A	39	25-JUL-08
C3 sub'd fluorene		<0.02	<0.04	RPD-NA	mg/kg	N/A	39	25-JUL-08
Retene		<0.005	<0.005	RPD-NA	mg/kg	N/A	39	25-JUL-08
WG804171-3	LCS							

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 20 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ALK-ED		Soil						
Batch	R699517							
WG804171-3	LCS							
Acenaphthene			101		%		52-128	25-JUL-08
Acenaphthylene			98		%		49-125	25-JUL-08
Acridine			107		%		55-145	25-JUL-08
Anthracene			93		%		52-128	25-JUL-08
Benzo(a)anthracene			111		%		41-135	25-JUL-08
Benzo(a)pyrene			107		%		40-132	25-JUL-08
Benzo(b&j)fluoranthene			106		%		55-145	25-JUL-08
Benzo(k)fluoranthene			111		%		49-134	25-JUL-08
Benzo(ghi)perylene			89		%		37-133	25-JUL-08
Biphenyl			103		%		60-126	25-JUL-08
C2 sub'd naphthalene			103		%		54-121	25-JUL-08
C3 sub'd naphthalene			104		%		58-129	25-JUL-08
C4 sub'd phenanthrene/anth.			111		%		55-145	25-JUL-08
Chrysene			110		%		57-130	25-JUL-08
Dibenzo(a,h)anthracene			98		%		31-132	25-JUL-08
Dibenzothiophene			101		%		55-130	25-JUL-08
Fluoranthene			106		%		50-129	25-JUL-08
Fluorene			102		%		52-127	25-JUL-08
Indeno(c,d-123)pyrene			101		%		40-132	25-JUL-08
1-Methylnaphthalene			99		%		44-124	25-JUL-08
Methyl phenanthrene/anthracene			84		%		52-125	25-JUL-08
Naphthalene			92		%		36-132	25-JUL-08
Phenanthrene			110		%		46-132	25-JUL-08
Pyrene			105		%		49-134	25-JUL-08
Quinoline			101		%		44-118	25-JUL-08
Retene			110		%		55-145	25-JUL-08
WG804171-1	MB							
Acenaphthene			<0.005		mg/kg		0.01	25-JUL-08
Acenaphthylene			<0.005		mg/kg		0.01	25-JUL-08
Acridine			<0.005		mg/kg		0.01	25-JUL-08
Anthracene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(a)anthracene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(a)pyrene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(b&j)fluoranthene			<0.005		mg/kg		0.01	25-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 21 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ALK-ED		Soil						
Batch	R699517							
WG804171-1	MB							
Benzo(k)fluoranthene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(ghi)perylene			<0.005		mg/kg		0.01	25-JUL-08
Biphenyl			<0.005		mg/kg		0.01	25-JUL-08
C2 sub'd B(a)A/chrysene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd B(b&k)F/B(a)P			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd biphenyl			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd fluorene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd naphthalene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd phenanthrene/anth.			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd naphthalene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd phenanthrene/anth.			<0.02		mg/kg		0.04	25-JUL-08
C4 sub'd dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
C4 sub'd naphthalene			<0.02		mg/kg		0.04	25-JUL-08
C4 sub'd phenanthrene/anth.			<0.02		mg/kg		0.04	25-JUL-08
Chrysene			<0.005		mg/kg		0.01	25-JUL-08
Dibenzo(a,h)anthracene			<0.005		mg/kg		0.01	25-JUL-08
Dibenzothiophene			<0.005		mg/kg		0.01	25-JUL-08
Fluoranthene			<0.005		mg/kg		0.01	25-JUL-08
Fluorene			<0.005		mg/kg		0.01	25-JUL-08
Indeno(c,d-123)pyrene			<0.005		mg/kg		0.01	25-JUL-08
Methyl B(a)A/chrysene			<0.02		mg/kg		0.04	25-JUL-08
Methyl B(b&k)F/B(a)P			<0.02		mg/kg		0.04	25-JUL-08
Methyl acenaphthene			<0.02		mg/kg		0.04	25-JUL-08
Methyl biphenyl			<0.02		mg/kg		0.04	25-JUL-08
Methyl dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
Methyl fluoranthene/pyrene			<0.02		mg/kg		0.04	25-JUL-08
Methyl fluorene			<0.02		mg/kg		0.04	25-JUL-08
1-Methylnaphthalene			<0.005		mg/kg		0.01	25-JUL-08
Methyl phenanthrene/anthracene			<0.02		mg/kg		0.04	25-JUL-08
Naphthalene			0.009		mg/kg		0.01	25-JUL-08
Phenanthrene			<0.005		mg/kg		0.01	25-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 22 of 23

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ALK-ED		Soil						
Batch R699517								
WG804171-1 MB								
Pyrene			<0.005		mg/kg		0.01	25-JUL-08
Quinoline			<0.005		mg/kg		0.01	25-JUL-08
C2 sub'd fluoranthene/pyrene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd fluoranthene/pyrene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd fluorene			<0.02		mg/kg		0.04	25-JUL-08
Retene			<0.005		mg/kg		0.01	25-JUL-08
PSA-1-SK		Soil						
Batch R698364								
WG804398-1 DUP		L656419-6						
% Sand (2.0mm - 0.05mm)		60	60	J	%	0	3.1	23-JUL-08
% Silt (0.05mm - 2um)		33	34	J	%	1	3.1	23-JUL-08
% Clay (<2um)		7	6	J	%	1	4	23-JUL-08
WG804398-2 IRM		FARM98						
% Sand (2.0mm - 0.05mm)			48		%		40-51	23-JUL-08
% Silt (0.05mm - 2um)			29		%		26-33	23-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656419

Report Date: 19-NOV-08

Page 23 of 23

Legend:

Limit	99% Confidence Interval (Laboratory Control Limits)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.



Environmental Division

www.alsenviro.com

REPORT TO:		REPORT FORMAT / DISTRIBUTION		SERVICE REQUESTED					
COMPANY: <u>Golder Associates</u>		STANDARD ☒ OTHER ☐		REGULAR SERVICE (DEFAULT) ☒					
CONTACT: <u>Kerrie Serben</u>		PDF ☒ EXCEL ☒ CUSTOM ☐ FAX ☐		RUSH SERVICE (2-3 DAYS)					
ADDRESS: <u>195 Pemberton Ave</u>		EMAIL 1: <u>Kserben@golder.com</u>		PRIORITY SERVICE (1 DAY or ASAP)					
<u>North Vancouver, BC</u>		EMAIL 2: <u>Ade Bruyn @golder.com</u>		EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS					
PHONE: <u>604-986-4331</u> FAX: <u>604-662-8548</u>		ANALYSIS REQUEST							
INVOICE TO: SAME AS REPORT? YES/NO ☒		INDICATE BOTTLES: FILTERED / PRESERVED (F/P) ☐							
COMPANY: <u>Complex Minerals Corp</u>		CLIENT / PROJECT INFORMATION:							
CONTACT: <u>Sandy Barham</u>		JOB #: <u>07-1373-0055 Phase 6030</u>							
ADDRESS: <u>Suite 901, 1015-4th St. SW</u>		PO / AFE:							
<u>Calgary, AB T2R 1J4</u>		Legal Site Description: <u>multiple sites</u>							
PHONE: FAX:		QUOTE #:							
Lab Work Order # (lab use only) <u>L656419</u>		SAMPLER (Initials): <u>TAZ</u>							
Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	CN - TOT - WT METAL - CCME - ED PSA - 1 - SK C - TOT - ORG - LECO - SK N: nitrogen, total carbon tot. inorganic C tot. organic matter PAH - ALK - ED HAZARDOUS ? HIGHLY CONTAMINATED ? NUMBER OF CONTAINERS				
	B6 - a1	13-July-2008	08:00	sediment	X X X X				4
	B6 - a2		09:15		X X X X				4
	B6 - b1		08:00		X X X X				4
	B6 - b2		09:15		X X X X				4
	B7 - a1		15:00		X X X X		X		5
	B7 - b1		15:00		X X X X		X		5
GUIDELINES / REGULATIONS		SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS							
<u>CCME AWG for sediment</u>									
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 reverse page of the white report copy.									
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:	SAMPLE CONDITION (lab use only)					
<u>Thalia Zis</u>	<u>July 14, 07:00</u>	<u>[Signature]</u>	<u>16-Jul-07</u>	TEMPERATURE	SAMPLES RECEIVED IN GOOD CONDITION? YES/NO				
				<u>8.6°C</u>	<u>(If no provide details)</u>				
					<u>Exceeders</u>				



Environmental Division

REPORT TO:		REPORT FORMAT / DISTRIBUTION		SERVICE REQUESTED		
COMPANY: <u>Golder Associates</u>		STANDARD ☒ OTHER		REGULAR SERVICE (DEFAULT) ☒		
CONTACT: <u>Kerrie serben</u>		PDF ☒ EXCEL ☒ CUSTOM FAX		RUSH SERVICE (2-3 DAYS)		
ADDRESS: <u>195 Pemberton Ave</u>		EMAIL 1: <u>Kserben@golder.com</u>		PRIORITY SERVICE (1 DAY or ASAP)		
<u>North Vancouver, BC</u>		EMAIL 2: <u>AdeBruyn@golder.com</u>		EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS		
PHONE: <u>604 986 4331</u> FAX: <u>604 662 8548</u>		ANALYSIS REQUEST				
INVOICE TO: SAME AS REPORT? YES ☒ NO		INDICATE BOTTLES: FILTERED / PRESERVED (F/P)				
COMPANY: <u>Comaplex Minerals Corp</u>		CLIENT / PROJECT INFORMATION:				
CONTACT: <u>Sandy Barham</u>		JOB #: <u>07-1373-0055-Phase 6030</u>				
ADDRESS: <u>Suite 901, 1015-4th St. SW</u>		PO / AFE:				
<u>Calgary, AB T2R1J4</u>		Legal Site Description: <u>multiple sites</u>				
PHONE: FAX:		QUOTE #:				
Lab Work Order # (lab use only)		SAMPLER (Initials): <u>TAZ</u>				
Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	ANAL-ED, C-TOT-ORG-ED, SOLIDS-TOT-ED, SOLIDS-TOT-ED CYANIDE NH4-ED, N-TOT-ED P-TOTAL-LOW-ED, P-LOW-ED P-TOTAL-DIS-LOW-ED C-TOT-ORG-ED, C-TOT-ED C-DIS-ORG-LOW-ED MET-ULTRA-ED MET-ULTRA-DIS-ED CHLOROPHYLL A PHENOLS-4AAP-ED OGG-IR-ED 8TEX, FI F2, F3, F4-CL	NUMBER OF CONTAINERS
	B7	12-July-2008	08:45	freshwater	X X X X X X X X X X X X X X X X	17
	B6	↓	14:00	↓	X X X X X X X X X X X X X X X X	10
	Z2-1 Z2-1	↓	10:00	↓	X X X X X X X X X X X X X X X X	17
	Z4-3	↓	11:00	↓	X X X X X X X X X X X X X X X X	17
GUIDELINES / REGULATIONS		SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS				
CCME AWG and CCME DWG						
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 reverse page of the white report copy.						
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:	SAMPLE CONDITION (lab use only)		
<u>Thalia Zis</u>	<u>July 14 07:00</u>			TEMPERATURE	SAMPLES RECEIVED IN GOOD CONDITION? YES / NO (if no provide details)	
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:			

[illegible]

TOTAL OF 4 COOLERS THIS JOB#



Environmental Division

Certificate of Analysis

GOLDER ASSOCIATES LTD

ATTN: KERRIE SERBEN

195 PEMBERTON AVE

NORTH VANCOUVER BC V7P 2R4

Reported On: 19-NOV-08 09:25 AM

Revision: 8

Lab Work Order #: **L656997**

Date Received: **17-JUL-08**

Project P.O. #: NOT SUBMITTED
Job Reference: 07-1373-0055-6030
Legal Site Desc: MULTIPLE SITES
CofC Numbers: C093578

Other Information:

Comments: ADDITIONAL 19-SEP-08 10:01


NHAN H NGUYEN
Senior Account Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

ALS Canada Ltd. (formerly ETL Chemspec Analytical Ltd.)
Part of the **ALS Laboratory Group**

9936-67 Avenue, Edmonton, AB T6E 0P5
Phone: +1 780 413 5227 Fax: +1 780 437 2311 www.alsglobal.com
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ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L656997-9 SEDIMENT 14-JUL-08 10:25 B5-1A	L656997-10 Sediments 14-JUL-08 10:25 B5-1B	L656997-11 Sediments 14-JUL-08 11:30 B5-2A	L656997-12 Sediments 14-JUL-08 11:30 B5-2B	L656997-13 Sediments 15-JUL-08 09:00 A8-1A
Grouping	Analyte					
SOIL						
Physical Tests	% Moisture (%)	85	82	83	78	89
Particle Size	Texture	Silt loam	Silt loam	Loam / Sandy loam	Sandy loam	Sandy loam
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)	0.90	0.58	0.65	0.43	0.82
Cyanides	Cyanide, Total (mg/kg)	3.3	2.4	2.1	2.2	4.0
Organic / Inorganic Carbon	CaCO3 Equivalent (%)	<0.7	<0.7	<0.7	<0.7	<0.7
	Inorganic Carbon (%)	<0.1	<0.1	<0.1	<0.1	<0.1
	Total Carbon by Combustion (%)	9.0	6.5	6.9	4.9	7.7
	Total Organic Carbon (%)	9.0	6.5	6.9	4.9	7.7
Metals	Antimony (Sb) (mg/kg)	<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As) (mg/kg)	66.5	92.2	23.8	22.0	151
	Barium (Ba) (mg/kg)	62	58	37	36	60
	Beryllium (Be) (mg/kg)	<1	<1	<1	<1	<1
	Cadmium (Cd) (mg/kg)	<0.5	<0.5	<0.5	<0.5	<0.5
	Chromium (Cr) (mg/kg)	39.2	39.4	18.9	21.6	39.9
	Cobalt (Co) (mg/kg)	14	18	5	6	20
	Copper (Cu) (mg/kg)	56	58	28	32	77
	Lead (Pb) (mg/kg)	10	9	6	5	11
	Mercury (Hg) (mg/kg)	<0.05	<0.05	<0.05	<0.05	0.09
	Molybdenum (Mo) (mg/kg)	4	5	2	2	5
	Nickel (Ni) (mg/kg)	44	48	19	20	49
	Selenium (Se) (mg/kg)	0.9	0.9	0.4	0.5	1.0
	Silver (Ag) (mg/kg)	<1	<1	<1	<1	<1
	Thallium (Tl) (mg/kg)	<1	<1	<1	<1	<1
	Tin (Sn) (mg/kg)	<5	<5	<5	<5	<5
	Uranium (U) (mg/kg)	<2	<2	<2	<2	<2
	Vanadium (V) (mg/kg)	35	38	18	21	34
	Zinc (Zn) (mg/kg)	60	60	30	30	70
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01
	Acenaphthylene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01
	Acridine (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01
	Anthracene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01
	Benzo(a)anthracene (mg/kg)	0.005	<0.005	<0.005	<0.005	<0.01
	Benzo(a)pyrene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01
	Benzo(b&j)fluoranthene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01
	Benzo(ghi)perylene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01
	Benzo(k)fluoranthene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656997-14 Sediments 15-JUL-08 09:00 A8-1B	L656997-15 Sediments 15-JUL-08 10:00 A8-2A	L656997-16 Sediments 15-JUL-08 10:00 A8-2B		
Grouping	Analyte						
SOIL							
Physical Tests	% Moisture (%)		86	95	88		
Particle Size	Texture		Sandy loam	Silt loam	Silt loam		
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)		0.72	1.23	0.78		
Cyanides	Cyanide, Total (mg/kg)		1.5	3.4	2.3		
Organic / Inorganic Carbon	CaCO3 Equivalent (%)		<0.7	<0.7	<0.7		
	Inorganic Carbon (%)		<0.1	<0.1	<0.1		
	Total Carbon by Combustion (%)		8.0	12.5	7.9		
	Total Organic Carbon (%)		8.0	12.5	7.9		
Metals	Antimony (Sb) (mg/kg)		<0.2	<0.2	<0.2		
	Arsenic (As) (mg/kg)		173	117	149		
	Barium (Ba) (mg/kg)		55	70	52		
	Beryllium (Be) (mg/kg)		<1	<1	<1		
	Cadmium (Cd) (mg/kg)		<0.5	<0.5	<0.5		
	Chromium (Cr) (mg/kg)		41.1	40.2	37.0		
	Cobalt (Co) (mg/kg)		19	18	18		
	Copper (Cu) (mg/kg)		78	75	68		
	Lead (Pb) (mg/kg)		10	13	10		
	Mercury (Hg) (mg/kg)		0.08	0.08	0.06		
	Molybdenum (Mo) (mg/kg)		5	5	5		
	Nickel (Ni) (mg/kg)		46	51	44		
	Selenium (Se) (mg/kg)		0.9	0.9	0.9		
	Silver (Ag) (mg/kg)		<1	<1	<1		
	Thallium (Tl) (mg/kg)		<1	<1	<1		
	Tin (Sn) (mg/kg)		<5	<5	<5		
	Uranium (U) (mg/kg)		<2	<2	<2		
	Vanadium (V) (mg/kg)		35	34	32		
	Zinc (Zn) (mg/kg)		70	70	60		
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)		<0.005	<0.01	<0.01		
	Acenaphthylene (mg/kg)		<0.005	<0.01	<0.01		
	Acridine (mg/kg)		<0.005	<0.01	<0.01		
	Anthracene (mg/kg)		<0.005	<0.01	<0.01		
	Benzo(a)anthracene (mg/kg)		0.005	0.01	<0.01		
	Benzo(a)pyrene (mg/kg)		<0.005	<0.01	<0.01		
	Benzo(b&j)fluoranthene (mg/kg)		<0.005	<0.01	<0.01		
	Benzo(ghi)perylene (mg/kg)		<0.005	<0.01	<0.01		
	Benzo(k)fluoranthene (mg/kg)		<0.005	<0.01	<0.01		

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656997-9 SEDIMENT 14-JUL-08 10:25 B5-1A	L656997-10 Sediments 14-JUL-08 10:25 B5-1B	L656997-11 Sediments 14-JUL-08 11:30 B5-2A	L656997-12 Sediments 14-JUL-08 11:30 B5-2B	L656997-13 Sediments 15-JUL-08 09:00 A8-1A
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Biphenyl (mg/kg)	0.005	<0.005	0.005	<0.005	<0.01	
	C2 sub'd B(a)A/chrysene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C2 sub'd B(b&k)F/B(a)P (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C2 sub'd biphenyl (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C2 sub'd dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C2 sub'd fluoranthene/pyrene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C2 sub'd fluorene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C2 sub'd naphthalene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C2 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C3 sub'd dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C3 sub'd fluoranthene/pyrene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C3 sub'd fluorene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C3 sub'd naphthalene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C3 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C4 sub'd dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C4 sub'd naphthalene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	C4 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	Chrysene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01	
	Dibenzo(a,h)anthracene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01	
	Dibenzothiophene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01	
	Fluoranthene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01	
	Fluorene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01	
	Indeno(c,d-123)pyrene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01	
	Methyl acenaphthene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	Methyl B(a)A/chrysene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	Methyl B(b&k)F/B(a)P (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	Methyl biphenyl (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	Methyl dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	Methyl fluoranthene/pyrene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	Methyl fluorene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.04	
	Methyl phenanthrene/anthracene (mg/kg)	<0.04	<0.02	<0.02	<0.02	<0.04	
	Retene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01	
	1-Methylnaphthalene (mg/kg)	0.009	0.005	0.009	0.007	<0.01	
	Naphthalene (mg/kg)	0.021	0.005	0.02	0.01	0.03	
	Phenanthrene (mg/kg)	0.005	<0.005	<0.005	<0.005	<0.01	
	Pyrene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01	
	Quinoline (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.01	
	Surrogate: 2-Fluorobiphenyl (%)	71	85	87	83	74	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656997-14 Sediments 15-JUL-08 09:00 A8-1B	L656997-15 Sediments 15-JUL-08 10:00 A8-2A	L656997-16 Sediments 15-JUL-08 10:00 A8-2B		
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Biphenyl (mg/kg)	0.006	0.03	0.01			
	C2 sub'd B(a)A/chrysene (mg/kg)	<0.02	<0.04	<0.04			
	C2 sub'd B(b&k)F/B(a)P (mg/kg)	<0.02	<0.04	<0.04			
	C2 sub'd biphenyl (mg/kg)	<0.02	<0.04	<0.04			
	C2 sub'd dibenzothiophene (mg/kg)	<0.02	<0.04	<0.04			
	C2 sub'd fluoranthene/pyrene (mg/kg)	<0.02	<0.04	<0.04			
	C2 sub'd fluorene (mg/kg)	<0.02	<0.04	<0.04			
	C2 sub'd naphthalene (mg/kg)	<0.02	<0.04	<0.04			
	C2 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.04	<0.04			
	C3 sub'd dibenzothiophene (mg/kg)	<0.02	<0.04	<0.04			
	C3 sub'd fluoranthene/pyrene (mg/kg)	<0.02	<0.04	<0.04			
	C3 sub'd fluorene (mg/kg)	<0.02	<0.04	<0.04			
	C3 sub'd naphthalene (mg/kg)	<0.02	<0.04	<0.04			
	C3 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.04	<0.04			
	C4 sub'd dibenzothiophene (mg/kg)	<0.02	<0.04	<0.04			
	C4 sub'd naphthalene (mg/kg)	<0.02	<0.04	<0.04			
	C4 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.04	<0.04			
	Chrysene (mg/kg)	<0.005	<0.01	<0.01			
	Dibenzo(a,h)anthracene (mg/kg)	<0.005	<0.01	<0.01			
	Dibenzothiophene (mg/kg)	<0.005	<0.01	<0.01			
	Fluoranthene (mg/kg)	<0.005	<0.01	<0.01			
	Fluorene (mg/kg)	0.005	<0.01	<0.01			
	Indeno(c,d-123)pyrene (mg/kg)	<0.005	<0.01	<0.01			
	Methyl acenaphthene (mg/kg)	<0.02	<0.04	<0.04			
	Methyl B(a)A/chrysene (mg/kg)	<0.02	<0.04	<0.04			
	Methyl B(b&k)F/B(a)P (mg/kg)	<0.02	<0.04	<0.04			
	Methyl biphenyl (mg/kg)	<0.02	<0.04	<0.04			
	Methyl dibenzothiophene (mg/kg)	<0.02	<0.04	<0.04			
	Methyl fluoranthene/pyrene (mg/kg)	<0.02	<0.04	<0.04			
	Methyl fluorene (mg/kg)	<0.02	<0.04	<0.04			
	Methyl phenanthrene/anthracene (mg/kg)	<0.02	<0.04	<0.04			
	Retene (mg/kg)	<0.005	<0.01	<0.01			
	1-Methylnaphthalene (mg/kg)	0.007	0.02	<0.01			
	Naphthalene (mg/kg)	0.03	0.06	0.03			
	Phenanthrene (mg/kg)	0.005	0.01	<0.01			
	Pyrene (mg/kg)	<0.005	<0.01	<0.01			
	Quinoline (mg/kg)	<0.005	<0.01	<0.01			
	Surrogate: 2-Fluorobiphenyl (%)	74	63	61			

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L656997-9	L656997-10	L656997-11	L656997-12	L656997-13
		Description	SEDIMENT	Sediments	Sediments	Sediments	Sediments
		Sampled Date	14-JUL-08	14-JUL-08	14-JUL-08	14-JUL-08	15-JUL-08
		Sampled Time	10:25	10:25	11:30	11:30	09:00
		Client ID	B5-1A	B5-1B	B5-2A	B5-2B	A8-1A
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Surrogate: Nitrobenzene d5 (%)		48	62	61	53	47
	Surrogate: p-Terphenyl d14 (%)		96	108	104	107	104
Particle Size	% Sand (2.0mm - 0.05mm) (%)		27	24	49	69	70
	% Silt (0.05mm - 2um) (%)		62	67	44	28	22
	% Clay (<2um) (%)		11	8	7	3	7

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID				
		Description				
		Sampled Date				
		Sampled Time				
		Client ID				
Grouping	Analyte					
SOIL						
Polycyclic Aromatic Hydrocarbons	Surrogate: Nitrobenzene d5 (%)	56	40	40		
	Surrogate: p-Terphenyl d14 (%)	98	103	94		
Particle Size	% Sand (2.0mm - 0.05mm) (%)	61	33	42		
	% Silt (0.05mm - 2um) (%)	34	56	52		
	% Clay (<2um) (%)	5	11	6		

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L656997-1	L656997-2	L656997-3	L656997-4	L656997-5
		Description	FRESHWATER	FRESHWATER	FRESHWATER	FRESHWATER	FRESHWATER
		Sampled Date	14-JUL-08	14-JUL-08	15-JUL-08	15-JUL-08	15-JUL-08
		Sampled Time	08:00	16:00	13:00	13:30	14:45
		Client ID	B5	A8	A54	Z3-2	BOOT-1
Grouping	Analyte						
WATER							
Physical Tests	Total Suspended Solids (mg/L)	3	17	5	<3	<3	
	Total Dissolved Solids (mg/L)	49	83	696 *	<5	29	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	28	28	47	<5	12	
	Ammonia-N (mg/L)	<0.05	<0.05	1.11	<0.05	<0.05	
	Bicarbonate (HCO3) (mg/L)	34	34	57	<5	15	
	Carbonate (CO3) (mg/L)	<5	<5	<5	<5	<5	
	Chloride (Cl) (mg/L)	7	16	214	<1	7	
	Conductivity (EC) (uS/cm)	85.3	117	944	3.3	58.6	
	Hardness (as CaCO3) (mg/L)	36	49	337	<1	19	
	Hydroxide (OH) (mg/L)	<5	<5	<5	<5	<5	
	Ion Balance (%)	Low EC	107	103	Low TDS	Low EC	
	Nitrate+Nitrite-N (mg/L)	<0.1	<0.1	5.1	<0.1	<0.1	
	Nitrate-N (mg/L)	<0.1	<0.1	4.9	<0.1	<0.1	
	Nitrite-N (mg/L)	<0.05	<0.05	0.14	<0.05	<0.05	
	Total Kjeldahl Nitrogen (mg/L)	0.2	0.2	2.2	<0.2	<0.2	
	pH (pH)	7.6	7.7	8.0	5.5	7.4	
	Orthophosphate (PO4-P) (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	
	Phosphorus, Total (mg/L)	0.009	0.005	0.009	<0.001	0.003	
	Phosphorus, Total Dissolved (mg/L)	0.003	0.003	0.004	<0.001	0.003	
	TDS (Calculated) (mg/L)	43	57	469	<1	29	
Cyanides	Cyanide, Total (mg/L)	<0.002	<0.002	<0.002	<0.002	<0.002	
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	4.3	3.6	9.5	0.7	3.3	
	Total Carbon (mg/L)	10	9	20	<1	6	
	Total Organic Carbon (mg/L)	4	4	10	<1	3	
Metals	Calcium (Ca) (mg/L)	11.5	16.0	106	<0.5	5.8	
	Magnesium (Mg) (mg/L)	1.7	2.1	17.5	<0.1	1.1	
	Potassium (K) (mg/L)	0.8	0.8	8.0	<0.5	0.7	
	Sodium (Na) (mg/L)	3	3	33	<1	4	
	Sulfate (SO4) (mg/L)	2.6	2.1	39.9	<0.5	2.9	
Total Metals	Aluminum (Al) (mg/L)	0.0037	0.0018	0.0024	<0.0003	0.0030	
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	0.00020	<0.00003	<0.00003	
	Arsenic (As) (mg/L)	0.00153	0.00207	0.00090	<0.00003	0.00026	
	Barium (Ba) (mg/L)	0.0104	0.0128	0.0618	<0.00005	0.00590	
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
	Boron (B) (mg/L)	0.002	0.002	0.006	<0.001	0.003	
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	Calcium (Ca) (mg/L)	10.9	15.4	90.9	<0.02	5.18	
	Chromium (Cr) (mg/L)	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656997-6 FRESHWATER 15-JUL-08 17:00 Z9-8	L656997-7 FRESHWATER 14-JUL-08 13:51 A8-7	L656997-8 FRESHWATER 14-JUL-08 09:40 A5-4		
Grouping	Analyte						
WATER							
Physical Tests	Total Suspended Solids (mg/L)	<3	<3	3			
	Total Dissolved Solids (mg/L)	<5	82	62			
Anions and Nutrients	Alkalinity, Total (as CaCO ₃) (mg/L)	<5	27	28			
	Ammonia-N (mg/L)	<0.05	<0.05	<0.05			
	Bicarbonate (HCO ₃) (mg/L)	<5	33	34			
	Carbonate (CO ₃) (mg/L)	<5	<5	<5			
	Chloride (Cl) (mg/L)	<1	17	7			
	Conductivity (EC) (uS/cm)	2.9	118	86.2			
	Hardness (as CaCO ₃) (mg/L)	<1	49	35			
	Hydroxide (OH) (mg/L)	<5	<5	<5			
	Ion Balance (%)	Low TDS	106	Low EC			
	Nitrate+Nitrite-N (mg/L)	<0.1	<0.1	<0.1			
	Nitrate-N (mg/L)	<0.1	<0.1	<0.1			
	Nitrite-N (mg/L)	<0.05	<0.05	<0.05			
	Total Kjeldahl Nitrogen (mg/L)	<0.2	0.4	0.3			
	pH (pH)	5.5	7.6	7.6			
	Orthophosphate (PO ₄ -P) (mg/L)	<0.001	<0.001	<0.001			
	Phosphorus, Total (mg/L)	<0.001	0.007	0.008			
	Phosphorus, Total Dissolved (mg/L)	<0.001	0.004	0.003			
	TDS (Calculated) (mg/L)	<1	58	43			
Cyanides	Cyanide, Total (mg/L)	<0.002	<0.002	<0.002			
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	0.9	4.0	4.1			
	Total Carbon (mg/L)	<1	10	10			
	Total Organic Carbon (mg/L)	<1	4	4			
Metals	Calcium (Ca) (mg/L)	<0.5	16.1	11.3			
	Magnesium (Mg) (mg/L)	<0.1	2.1	1.6			
	Potassium (K) (mg/L)	<0.5	1.0	1.1			
	Sodium (Na) (mg/L)	<1	3	3			
	Sulfate (SO ₄) (mg/L)	<0.5	2.1	2.6			
Total Metals	Aluminum (Al) (mg/L)	<0.0003	0.0023	0.0039			
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	<0.00003			
	Arsenic (As) (mg/L)	<0.00003	0.00300	0.00164			
	Barium (Ba) (mg/L)	<0.00005	0.0143	0.0105			
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002			
	Boron (B) (mg/L)	<0.001	0.002	0.002			
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005			
	Calcium (Ca) (mg/L)	<0.02	15.3	10.9			
	Chromium (Cr) (mg/L)	<0.00006	0.00026	<0.00006			

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656997-1 FRESHWATER 14-JUL-08 08:00 B5	L656997-2 FRESHWATER 14-JUL-08 16:00 A8	L656997-3 FRESHWATER 15-JUL-08 13:00 A54	L656997-4 FRESHWATER 15-JUL-08 13:30 Z3-2	L656997-5 FRESHWATER 15-JUL-08 14:45 BOOT-1
Grouping	Analyte						
WATER							
Total Metals	Cobalt (Co) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
	Copper (Cu) (mg/L)	0.0012	0.0017	0.0010	<0.0006	0.0015	
	Iron (Fe) (mg/L)	0.118	0.072	0.022	<0.005	0.023	
	Lead (Pb) (mg/L)	<0.00005	0.00006	0.00006	<0.00005	<0.00005	
	Magnesium (Mg) (mg/L)	1.32	1.82	13.9	<0.004	0.814	
	Manganese (Mn) (mg/L)	0.0112	0.0069	0.0017	<0.0001	0.0029	
	Mercury (Hg)-Total (mg/L)	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	
	Molybdenum (Mo) (mg/L)	0.00010	0.00015	0.00049	<0.00006	0.00007	
	Nickel (Ni) (mg/L)	0.00048	0.00042	0.00100	<0.00006	0.00050	
	Potassium (K) (mg/L)	0.71	0.92	7.95	<0.02	0.70	
	Selenium (Se) (mg/L)	0.0001	0.0003	<0.0001	<0.0001	<0.0001	
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
	Sodium (Na) (mg/L)	2.58	2.54	34.2	<0.005	3.44	
	Strontium (Sr) (mg/L)	0.0506	0.0820	0.830	<0.0001	0.0253	
	Thallium (Tl)-Total (mg/L)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
	Uranium (U) (mg/L)	<0.00005	<0.00005	0.00026	<0.00005	<0.00005	
	Vanadium (V) (mg/L)	0.00011	0.00016	<0.00005	<0.00005	0.00011	
	Zinc (Zn) (mg/L)	0.0009	<0.0008	<0.0008	<0.0008	<0.0008	
Dissolved Metals	Aluminum (Al) (mg/L)	0.0022	0.0012	0.0023	0.0004 *	0.0017	
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	0.00018	<0.00003	<0.00003	
	Arsenic (As) (mg/L)	0.00115	0.00162	0.00070	<0.00003	0.00026	
	Barium (Ba) (mg/L)	0.00995	0.0124	0.0613	<0.00005	0.00581	
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
	Boron (B) (mg/L)	0.003	0.002	0.006	<0.001	0.003	
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	Calcium (Ca) (mg/L)	10.8	14.8	90.1	<0.02	5.19	
	Chromium (Cr) (mg/L)	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	
	Cobalt (Co) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
	Copper (Cu) (mg/L)	0.0010	0.0007	0.0010	<0.0006	0.0010	
	Iron (Fe) (mg/L)	0.038	0.025	<0.005	<0.005	0.010	
	Lead (Pb) (mg/L)	0.00007	0.00008	0.00005	<0.00005	<0.00005	
	Magnesium (Mg) (mg/L)	1.32	1.75	13.9	<0.004	0.817	
	Manganese (Mn) (mg/L)	0.0015	0.0019	0.0008	<0.0001	0.0022	
	Mercury (Hg)-Dissolved (mg/L)	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	
	Molybdenum (Mo) (mg/L)	0.00011	0.00014	0.00050	<0.00006	<0.00006	
	Nickel (Ni) (mg/L)	0.00046	0.00044	0.00095	<0.00006	0.00051	
	Potassium (K) (mg/L)	0.69	0.87	7.92	<0.02	0.69	
	Selenium (Se) (mg/L)	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L656997-6 FRESHWATER 15-JUL-08 17:00 Z9-8	L656997-7 FRESHWATER 14-JUL-08 13:51 A8-7	L656997-8 FRESHWATER 14-JUL-08 09:40 A5-4		
Grouping	Analyte						
WATER							
Total Metals	Cobalt (Co) (mg/L)	<0.0001	<0.0001	<0.0001			
	Copper (Cu) (mg/L)	<0.0006	0.0009	0.0006			
	Iron (Fe) (mg/L)	<0.005	0.138	0.143			
	Lead (Pb) (mg/L)	<0.00005	0.00010	<0.00005			
	Magnesium (Mg) (mg/L)	<0.004	1.80	1.35			
	Manganese (Mn) (mg/L)	<0.0001	0.0241	0.0177			
	Mercury (Hg)-Total (mg/L)	<0.00002	<0.00002	<0.00002			
	Molybdenum (Mo) (mg/L)	<0.00006	0.00016	0.00012			
	Nickel (Ni) (mg/L)	<0.00006	0.00051	0.00045			
	Potassium (K) (mg/L)	<0.02	0.95	0.71			
	Selenium (Se) (mg/L)	<0.0001	0.0002	<0.0001			
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001			
	Sodium (Na) (mg/L)	<0.005	2.60	2.59			
	Strontium (Sr) (mg/L)	<0.0001	0.0837	0.0510			
	Thallium (Tl)-Total (mg/L)	<0.00003	<0.00003	<0.00003			
	Uranium (U) (mg/L)	<0.00005	<0.00005	<0.00005			
	Vanadium (V) (mg/L)	<0.00005	0.00019	0.00011			
	Zinc (Zn) (mg/L)	<0.0008	0.0028	<0.0008			
Dissolved Metals	Aluminum (Al) (mg/L)	<0.0003	0.0014	0.0019			
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	<0.00003			
	Arsenic (As) (mg/L)	<0.00003	0.00224	0.00121			
	Barium (Ba) (mg/L)	<0.00005	0.0134	0.0101			
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002			
	Boron (B) (mg/L)	<0.001	0.002	0.002			
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005			
	Calcium (Ca) (mg/L)	<0.02	15.4	10.9			
	Chromium (Cr) (mg/L)	<0.00006	<0.00006	<0.00006			
	Cobalt (Co) (mg/L)	<0.0001	<0.0001	<0.0001			
	Copper (Cu) (mg/L)	<0.0006	0.0007	0.0007			
	Iron (Fe) (mg/L)	<0.005	0.044	0.050			
	Lead (Pb) (mg/L)	<0.00005	0.00005	0.00009			
	Magnesium (Mg) (mg/L)	<0.004	1.79	1.36			
	Manganese (Mn) (mg/L)	<0.0001	0.0079	0.0070			
	Mercury (Hg)-Dissolved (mg/L)	<0.00002	<0.00002	<0.00002			
	Molybdenum (Mo) (mg/L)	<0.00006	0.00015	0.00011			
	Nickel (Ni) (mg/L)	<0.00006	0.00052	0.00048			
	Potassium (K) (mg/L)	<0.02	0.93	0.71			
	Selenium (Se) (mg/L)	<0.0001	0.0001	<0.0001			
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001			

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

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L656997-1 FRESHWATER 14-JUL-08 08:00 B5	L656997-2 FRESHWATER 14-JUL-08 16:00 A8	L656997-3 FRESHWATER 15-JUL-08 13:00 A54	L656997-4 FRESHWATER 15-JUL-08 13:30 Z3-2	L656997-5 FRESHWATER 15-JUL-08 14:45 BOOT-1
Grouping	Analyte					
WATER						
Dissolved Metals	Sodium (Na) (mg/L)	2.56	2.42	34.0	<0.005	3.39
	Strontium (Sr) (mg/L)	0.0506	0.0792	0.832	<0.0001	0.0260
	Thallium (Tl)-Dissolved (mg/L)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
	Uranium (U) (mg/L)	<0.00005	<0.00005	0.00029	<0.00005	<0.00005
	Vanadium (V) (mg/L)	<0.00005	0.00012	0.00008	<0.00005	0.00009
	Zinc (Zn) (mg/L)	0.0046	0.0010	<0.0008	0.0010 *	<0.0008
Aggregate Organics	Oil & Grease-(IR) (mg/L)	0.9	0.5	0.6	<0.5	<0.5
	Phenols (4AAP) (mg/L)	0.002	0.002	0.004	<0.001	0.001
Volatile Organic Compounds	Benzene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	EthylBenzene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Toluene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	0.00059
	Xylenes (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	F1(C6-C10) (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1
	F1-BTEX (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1
Hydrocarbons	F2 (>C10-C16) (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05
	F3 (C16-C34) (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05
	F4 (C34-C50) (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05
Plant Pigments	Chlorophyll a (ug/L)	6	13	17	15	15

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

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L656997-6 FRESHWATER 15-JUL-08 17:00 Z9-8	L656997-7 FRESHWATER 14-JUL-08 13:51 A8-7	L656997-8 FRESHWATER 14-JUL-08 09:40 A5-4		
Grouping	Analyte					
WATER						
Dissolved Metals	Sodium (Na) (mg/L)	<0.005	2.61	2.61		
	Strontium (Sr) (mg/L)	<0.0001	0.0822	0.0509		
	Thallium (Tl)-Dissolved (mg/L)	<0.00003	<0.00003	<0.00003		
	Uranium (U) (mg/L)	<0.00005	<0.00005	<0.00005		
	Vanadium (V) (mg/L)	<0.00005	0.00015	0.00010		
	Zinc (Zn) (mg/L)	<0.0008	0.0015	0.0015		
Aggregate Organics	Oil & Grease-(IR) (mg/L)	<0.5				
	Phenols (4AAP) (mg/L)	<0.001				
Volatile Organic Compounds	Benzene (mg/L)	<0.00050				
	EthylBenzene (mg/L)	<0.00050				
	Toluene (mg/L)	<0.00050				
	Xylenes (mg/L)	<0.00050				
	F1(C6-C10) (mg/L)	<0.1				
	F1-BTEX (mg/L)	<0.1				
Hydrocarbons	F2 (>C10-C16) (mg/L)	<0.05				
	F3 (C16-C34) (mg/L)	<0.05				
	F4 (C34-C50) (mg/L)	<0.05				
Plant Pigments	Chlorophyll a (ug/L)	1	17	17		

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

Reference Information

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comment:
L656997-13	Soil	Note: Detection Limit raised because of high moisture content	
L656997-13	Soil	Note: raised DL 2x due to high %moisture	
L656997-15	Soil	Note: Detection Limit raised because of high moisture content	
L656997-15	Soil	Note: raised DL 2x due to high moisture	
L656997-16	Soil	Note: Detection Limit raised because of high moisture content	
L656997-16	Soil	Note: raised DL 2x due to high moisture content	

Qualifiers for Individual Parameters Listed:

Qualifier	Description
RRV	Reported Result Verified By Repeat Analysis

Samples with Qualifiers for Individual Parameters as listed above:

Sample Number	Client Sample ID	Parameters	Qualifier
L656997-3	A54	Total Dissolved Solids	RRV
L656997-4	Z3-2	Aluminum (Al) Zinc (Zn)	RRV

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
BTX,F1-CL	Water	BTEX and F1 (C6-C10)	EPA 5030/8015& 8260-P&T GC-MS/FID
C-DIS-ORG-LOW-ED	Water	Dissolved Organic Carbon	APHA 5310 B-Instrumental
C-INORG-ORG-SK	Soil	Inorganic and Organic Carbon	SSSA (1996) P455-456

When carbonates are decomposed with acid in an open system, carbon dioxide is released to the atmosphere. The decrease in sample weight resulting from CO2 loss is proportional to the carbonate content of the soil.

Reference:

Loeppert, R.H. and Suarez, D.L. 1996. Gravimetric Method for Loss of Carbon Dioxide. P. 455-456 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

C-TOT-ED	Water	Total Carbon	APHA 5310 B-Instrumental
C-TOT-LECO-SK	Soil	Total Carbon by combustion method	SSSA (1996) - Combustion Instrument

The sample is introduced into a quartz tube where it undergoes combustion at 900 °C in the presence of oxygen.

Combustion gases are first carried through a catalyst bed in the bottom of the combustion tube, where oxidation is completed and then carried through a reducing agent (copper), where the nitrogen oxides are reduced to elemental nitrogen.

This mixture of N2, CO2, and H2O is then passed through an absorber column containing magnesium perchlorate to remove water. N2 and CO2 gases are then separated in a gas chromatographic column and detected by thermal conductivity.

Reference:

Nelson, D.W. and Sommers, L.E. 1996. Total Carbon, organic carbon and organic matter. P. 961-1010 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

C-TOT-ORG-ED	Water	Total Organic Carbon	APHA 5310 B-Instrumental
C-TOT-ORG-LECO-SK	Soil	Organic Carbon by combustion method	SSSA (1996) p. 973

Total Organic Carbon (C-TOT-ORG-LECO-SK, C-TOT-ORG-SK)

Total C and inorganic C are determined on separate samples. The total C is determined by combustion and thermal conductivity detection, while inorganic C is determined by weight loss after addition of hydrochloric acid. Organic C is calculated by the difference between these two determinations.

Reference for Total C:

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
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Nelson, D.W. and Sommers, L.E. 1996. Total Carbon, organic carbon and organic matter. P. 961-1010 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

Reference for Inorganic C:

Loeppert, R.H. and Suarez, D.L. 1996. Gravimetric Method for Loss of Carbon Dioxide. P. 455-456 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

CHLOROPHYLL A-FM	Water	Chlorophyll-a	APHA 10200H, 1998
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CL-ED	Water	Chloride (Cl)	APHA 4500 Cl E-Colorimetry
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CN-TOT-WP	Water	Cyanide, Total	APHA 4500 CN-O
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Total Cyanide in Water: Simple cyanides are converted to hydrogen cyanide (HCN) by distillation. Complex cyanides are not easily decomposed. Low power UV radiation is used to break down organic, metallic and alkali complexed compounds to free cyanide. The distillation step isolates HCN from simple cyanides under specific acidic conditions. The liberated HCN is converted to cyanogen chloride with chloramine-T. This further reacts with barbituric acid and isonicotinic acid to form a highly coloured complex.

CN-TOT-WP	Soil	Cyanide, Total	EPA 9013A
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Total Cyanides in Soil, Vegetation and Tissue: The sample is extracted with a strong base for 16 hours, then filtered. The filtrate is then analyzed for total cyanide as follows: Simple cyanides are converted to hydrogen cyanide (HCN) by distillation. Complex cyanides are not easily decomposed. Low power UV radiation is used to break down organic, metallic and alkali complexed compounds to free cyanide. The distillation step isolates HCN from simple cyanides under specific acidic conditions. The liberated HCN is converted to cyanogen chloride with chloramine-T. This further reacts with barbituric acid and isonicotinic acid to form a highly coloured complex.

ETL-ROUTINE-ICP-ED	Water	ICP metals and SO4 for routine water	APHA 3120 B-ICP-OES
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F2,F3,F4-CL	Water	F2, F3, F4	EPA 3510/8000-GC-FID
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HG-ULT-CV-ED	Water	Mercury (Hg)	EPA 245.7 / EPA 245.1
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HG-ULT-DIS-CV-ED	Water	Mercury (Hg) - Dissolved	EPA 245.7 / EPA 245.1
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IONBALANCE-ED	Water	Ion Balance Calculation	APHA 1030E
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MET1-ULTRA-DIS-ED	Water	Ultra-Low Metals - Dissolved	APHA 3125-ICP-MS
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MET1-ULTRA-ED	Water	Ultra-Low Metals	APHA 3125-ICP-MS
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MET2-ULTRA-DIS-ED	Water	Major Metals - Dissolved	EPA 200.7
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MET2-ULTRA-ED	Water	Major Metals	EPA 200.7
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METAL-CCME-ED	Soil	Metals in Soil - CCME List	EPA 6020
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N-TOT-LECO-SK	Soil	Total Nitrogen by combustion method	SSSA (1996) p. 973-974
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The sample is introduced into a quartz tube where it undergoes combustion at 900 °C in the presence of oxygen.

Combustion gases are first carried through a catalyst bed in the bottom of the combustion tube, where oxidation is completed and then carried through a reducing agent (copper), where the nitrogen oxides are reduced to elemental nitrogen.

This mixture of N₂, CO₂, and H₂O is then passed through an absorber column containing magnesium perchlorate to remove water. N₂ and CO₂ gases are then separated in a gas chromatographic column and detected by thermal conductivity.

Reference: Bremner, J.M. 1996. Nitrogen - Total (Dumas Methods). P. 1088 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

N-TOTKJ-ED	Water	Total Kjeldahl Nitrogen	APHA 4500N-C -Dig.-Auto-Colorimetry
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N2N3-ED	Water	Nitrate+Nitrite-N	APHA 4500 NO3-H - COLORIMETRY
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NH4-ED	Water	Ammonia-N	APHA4500NH3F Colorimetry
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Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
NO2-ED	Water	Nitrite-N	APHA 4500 NO2B-Colorimetry
NO3-ED	Water	Nitrate-N	APHA 4500 NO3H-Colorimetry
OGG-IR-ED	Water	Oil & Grease-(IR)	APHA 5520 C-Liq-Liq Extraction Infrared
P-TOTAL-LOW-ED	Water	Phosphorus, Total	APHA 4500 P B,E-Auto-Colorimetry
P-TOTALDIS-LOW-ED	Water	Phosphorus, Dissolved	APHA 4500 P B,E - AUTO-COLORIMETRY
PAH-ALK-ED	Soil	PAHs & Alkylated PAHs	EPA 3540/8270-GC/MS

NOTE: The following PAH parameter results are determined via a semi-quantitative method. To be used for research purposes only.

C1 B(a)A/chrysene
 C1B(b&kF/B(a)P
 C1 acenaphthene
 C1 biphenyl
 C1dibenzothiophene
 C1 fluoranthene/pyrene
 C1 fluorene
 C1 naphthalene
 C1 phenanthrene/anthracene
 C2 B(a)A/chrysene
 C2 b(b&k)F/b(a)P
 C2 biphenyl
 C2 dibenzothiophene
 C2 fluoranthene/pyrene
 C2 fluorene
 C2 naphtalene
 C2 phenanthrene/anth.
 C3 dibenzothiophene
 C3 fluorene
 C3 naphthalene
 C3 phenanthrene/anth.
 C4 dibenzothiophene
 C4 naphthalene
 C4 phenanthrene/anth.

Note: Results based on dry weight.

PH/EC/ALK-ED	Water	pH, Conductivity and Total Alkalinity	APHA 4500-H, 2510, 2320
PHENOLS-4AAP-ED	Water	Phenols (4AAP)	AB ENV.06537-COLORIMETRIC
PO4-LOW-ED	Water	Orthophosphate (PO4-P)	APHA 4500 P B,E-Auto-Colorimetry
PREP-MOISTURE-ED	Soil	% Moisture	Oven dry 105C-Gravimetric
PSA-1-SK	Soil	Particle Size Analysis: Hydrometer	CSSS (1993) P.508-509

The hydrometer method is based on Stokes' Law which relates the radius of soil particles to the velocity of their sedimentation. Air-dried soil is wetted with a dispersing agent and then mixed with water in a sedimentation cylinder. The soil is allowed to settle and particle density readings(g/L) are taken after 40 seconds and 6 hours. These readings correspond to silt + clay and clay content respectively. Sand content is calculated by difference.

Reference:

Carter, M.R., 1993. Soil sampling and methods of analysis. Can. Soc. Soil Sci. Ottawa Ont. 508-509

Kalra, Y.P., Maynard, D.G. 1991. Methods manual for forest soil and plant analysis. Forestry Canada. p. 42-45.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
SOLIDS-TDS-ED	Water	Total Dissolved Solids	APHA 2540 C
SOLIDS-TOTSUS-ED	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
TL-ULTRA-DIS-ED	Water	Thallium (Tl)-Dissolved	EPA 6020
TL-ULTRA-ED	Water	Thallium (Tl)	EPA 6020

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.
The last two letters of the above ALS Test Code column indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
CL	ALS LABORATORY GROUP - CALGARY, ALBERTA, CANADA	ED	ALS LABORATORY GROUP - EDMONTON, ALBERTA, CANADA

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)	
FM		ALS LABORATORY GROUP - FORT MCMURRAY, ALBERTA, CANADA	SK	ALS LABORATORY GROUP - SASKATOON, SASKATCHEWAN, CANADA

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
WP		ALS LABORATORY GROUP - WINNIPEG, MANITOBA, CANADA	

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

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.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.

**Environmental Division**

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 1 of 24

Client: GOLDER ASSOCIATES LTD
195 PEMBERTON AVE
NORTH VANCOUVER BC V7P 2R4

Contact: KERRIE SERBEN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX,F1-CL		Water						
Batch	R697030							
WG803988-4	DUP	L656997-1						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	19-JUL-08
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	26	19-JUL-08
EthylBenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	26	19-JUL-08
Xylenes		<0.00050	<0.00050	RPD-NA	mg/L	N/A	26	19-JUL-08
F1(C6-C10)		<0.1	<0.1	RPD-NA	mg/L	N/A	26	19-JUL-08
WG803988-6	LCS							
Benzene			97		%		81-120	20-JUL-08
Toluene			96		%		82-119	20-JUL-08
EthylBenzene			95		%		82-120	20-JUL-08
Xylenes			93		%		81-124	20-JUL-08
F1(C6-C10)			82		%		80-119	20-JUL-08
WG803988-1	MB							
Benzene			<0.00050		mg/L		0.0005	19-JUL-08
Toluene			<0.00050		mg/L		0.0005	19-JUL-08
EthylBenzene			<0.00050		mg/L		0.0005	19-JUL-08
Xylenes			<0.00050		mg/L		0.0005	19-JUL-08
F1(C6-C10)			<0.1		mg/L		0.1	19-JUL-08
WG803988-5	MS	L656997-2						
Benzene			97		%		74-127	20-JUL-08
Toluene			93		%		68-131	20-JUL-08
EthylBenzene			92		%		67-132	20-JUL-08
Xylenes			92		%		68-136	20-JUL-08
F1(C6-C10)			82		%		66-127	20-JUL-08
C-DIS-ORG-LOW-ED		Water						
Batch	R696995							
WG804130-1	LCS							
Dissolved Organic Carbon			93		%		88-108	21-JUL-08
WG804130-4	LCS							
Dissolved Organic Carbon			112		%		63-138	21-JUL-08
WG804130-2	MB							
Dissolved Organic Carbon			<0.5		mg/L		0.5	21-JUL-08
C-TOT-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 2 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-TOT-ED								
Water								
Batch	R697242							
WG803372-2	LCS							
Total Carbon			103		%		90-109	18-JUL-08
WG803372-1	MB							
Total Carbon			<1		mg/L		1	18-JUL-08
WG803372-4	MS	L656419-7						
Total Carbon			108		%		71-123	18-JUL-08
C-TOT-ORG-ED								
Water								
Batch	R696995							
WG804130-1	LCS							
Total Organic Carbon			93		%		88-108	21-JUL-08
WG804130-4	LCS							
Total Organic Carbon			112		%		94-135	21-JUL-08
WG804130-2	MB							
Total Organic Carbon			<1		mg/L		1	21-JUL-08
WG804130-3	MB							
Total Organic Carbon			<1		mg/L		1	21-JUL-08
WG804130-11	MS	L654945-5						
Total Organic Carbon			102		%		77-116	22-JUL-08
WG804130-13	MS	L657417-1						
Total Organic Carbon			95		%		77-116	22-JUL-08
WG804130-15	MS	L657452-4						
Total Organic Carbon			105		%		77-116	23-JUL-08
WG804130-17	MS	L658040-1						
Total Organic Carbon			97		%		77-116	23-JUL-08
WG804130-19	MS	L658105-3						
Total Organic Carbon			103		%		77-116	24-JUL-08
WG804130-21	MS	L656178-6						
Total Organic Carbon			104		%		77-116	24-JUL-08
WG804130-25	MS	L658154-6						
Total Organic Carbon			94		%		77-116	25-JUL-08
WG804130-27	MS	L661085-1						
Total Organic Carbon			99		%		77-116	26-JUL-08
WG804130-29	MS	L655460-6						
Total Organic Carbon			106		%		77-116	25-JUL-08
WG804130-31	MS	L658705-8						
Total Organic Carbon			101		%		77-116	27-JUL-08
WG804130-33	MS	L658808-13						
Total Organic Carbon			101		%		77-116	27-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 3 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-TOT-ORG-ED	Water							
Batch R696995								
WG804130-7 MS		L656683-22						
Total Organic Carbon			106		%		77-116	21-JUL-08
WG804130-9 MS		L656927-1						
Total Organic Carbon			102		%		77-116	22-JUL-08
CHLOROPHYLL A-FM	Water							
Batch R698029								
WG804965-3 LCS								
Chlorophyll a			125		%		63-138	23-JUL-08
WG804965-1 MB								
Chlorophyll a			<1		ug/L		1	23-JUL-08
Batch R698067								
WG804950-2 LCS								
Chlorophyll a			127		%		63-138	23-JUL-08
WG804950-1 MB								
Chlorophyll a			<1		ug/L		1	23-JUL-08
CL-ED	Water							
Batch R696258								
WG802916-6 DUP		L656997-3						
Chloride (Cl)		214	213		mg/L	0.35	6.5	18-JUL-08
WG802916-2 LCS								
Chloride (Cl)			104		%		94-109	18-JUL-08
WG802916-3 LCS								
Chloride (Cl)			99		%		93-113	18-JUL-08
WG802916-1 MB								
Chloride (Cl)			<1		mg/L		1	18-JUL-08
WG802916-11 MS		L657441-4						
Chloride (Cl)			97		%		87-117	18-JUL-08
WG802916-13 MS		L657747-2						
Chloride (Cl)			95		%		87-117	18-JUL-08
WG802916-5 MS		L656988-13						
Chloride (Cl)			106		%		87-117	18-JUL-08
WG802916-7 MS		L656997-3						
Chloride (Cl)			N/A	MS-B	%		-	18-JUL-08
WG802916-9 MS		L657053-4						
Chloride (Cl)			99		%		87-117	18-JUL-08
CN-TOT-WP	Water							

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 4 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-TOT-WP		Water						
Batch	R698425							
WG805918-3	CCV							
Cyanide, Total			90		%		63-138	23-JUL-08
WG805918-2	CVS							
Cyanide, Total			94		%		80-120	23-JUL-08
WG805918-5	IRM	61-CN	88.92		%		75-125	23-JUL-08
Cyanide, Total								
WG805918-1	MB							
Cyanide, Total			<0.002		mg/L		0.002	23-JUL-08
ETL-ROUTINE-ICP-ED		Water						
Batch	R696098							
WG803143-3	CRM	ION-915_WATER						
Calcium (Ca)			105		%		96-116	18-JUL-08
Magnesium (Mg)			110		%		91-113	18-JUL-08
Sulfate (SO4)			103		%		87-118	18-JUL-08
WG803143-6	DUP	L656997-8						
Calcium (Ca)		11.3	10.9		mg/L	4.0	14	18-JUL-08
Potassium (K)		1.1	0.9	J	mg/L	0.2	2	18-JUL-08
Magnesium (Mg)		1.6	1.6		mg/L	3.5	10	18-JUL-08
Sodium (Na)		3	3	J	mg/L	0	4	18-JUL-08
Sulfate (SO4)		2.6	2.5	J	mg/L	0.1	2	18-JUL-08
WG803143-2	LCS							
Calcium (Ca)			97		%		86-106	18-JUL-08
Potassium (K)			93		%		86-106	18-JUL-08
Magnesium (Mg)			101		%		88-108	18-JUL-08
Sodium (Na)			94		%		86-106	18-JUL-08
WG803143-1	MB							
Calcium (Ca)			<0.5		mg/L		2.5	18-JUL-08
Potassium (K)			<0.5		mg/L		2.5	18-JUL-08
Magnesium (Mg)			<0.1		mg/L		0.5	18-JUL-08
Sodium (Na)			<1		mg/L		5	18-JUL-08
Sulfate (SO4)			<0.5		mg/L		2.5	18-JUL-08
WG803143-11	MS	L657747-3						
Calcium (Ca)			106		%		88-116	18-JUL-08
Potassium (K)			95		%		83-115	18-JUL-08
Magnesium (Mg)			111		%		91-117	18-JUL-08
Sodium (Na)			99		%		81-116	18-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 5 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ETL-ROUTINE-ICP-ED		Water						
Batch	R696098							
WG803143-11	MS	L657747-3						
Sulfate (SO4)			95		%		82-111	18-JUL-08
WG803143-5	MS	L656807-7						
Calcium (Ca)			107		%		88-116	18-JUL-08
Potassium (K)			99		%		83-115	18-JUL-08
Magnesium (Mg)			112		%		91-117	18-JUL-08
Sodium (Na)			103		%		81-116	18-JUL-08
Sulfate (SO4)			97		%		82-111	18-JUL-08
WG803143-7	MS	L656997-8						
Calcium (Ca)			109		%		88-116	18-JUL-08
Potassium (K)			95		%		83-115	18-JUL-08
Magnesium (Mg)			113		%		91-117	18-JUL-08
Sodium (Na)			100		%		81-116	18-JUL-08
Sulfate (SO4)			96		%		82-111	18-JUL-08
Batch	R697028							
WG804026-3	CRM	ION-915_WATER						
Calcium (Ca)			108		%		96-116	21-JUL-08
Magnesium (Mg)			111		%		91-113	21-JUL-08
Sulfate (SO4)			104		%		87-118	21-JUL-08
WG804026-2	LCS							
Calcium (Ca)			99		%		86-106	21-JUL-08
Potassium (K)			93		%		86-106	21-JUL-08
Magnesium (Mg)			104		%		88-108	21-JUL-08
Sodium (Na)			98		%		86-106	21-JUL-08
WG804026-1	MB							
Calcium (Ca)			<0.5		mg/L		2.5	21-JUL-08
Potassium (K)			<0.5		mg/L		2.5	21-JUL-08
Magnesium (Mg)			<0.1		mg/L		0.5	21-JUL-08
Sodium (Na)			<1		mg/L		5	21-JUL-08
Sulfate (SO4)			<0.5		mg/L		2.5	21-JUL-08
WG804026-5	MS	L657954-6						
Calcium (Ca)			102		%		88-116	21-JUL-08
Potassium (K)			98		%		83-115	21-JUL-08
Magnesium (Mg)			105		%		91-117	21-JUL-08
Sodium (Na)			95		%		81-116	21-JUL-08
Sulfate (SO4)			99		%		82-111	21-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 6 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2,F3,F4-CL		Water						
Batch	R697381							
WG804281-2	MB							
F2 (>C10-C16)			<0.05		mg/L		0.05	20-JUL-08
F3 (C16-C34)			<0.05		mg/L		0.05	20-JUL-08
F4 (C34-C50)			<0.05		mg/L		0.05	20-JUL-08
WG804281-3	MS	WG804281-2						
F2 (>C10-C16)			73		%		61-140	20-JUL-08
F3 (C16-C34)			73		%		51-125	20-JUL-08
F4 (C34-C50)			73		%		51-125	20-JUL-08
WG804281-4	MSD	WG804281-3						
F2 (>C10-C16)		73	81		%	11	33	20-JUL-08
F3 (C16-C34)		73	81		%	11	33	20-JUL-08
F4 (C34-C50)		73	81		%	11	33	20-JUL-08
HG-ULT-CV-ED		Water						
Batch	R702794							
WG810098-8	DUP	L656997-4						
Mercury (Hg)-Total		<0.00002	<0.00002	RPD-NA	mg/L	N/A	16	01-AUG-08
WG810098-2	LCS							
Mercury (Hg)-Total			86		%		63-135	01-AUG-08
WG810098-3	LCSD	WG810098-2						
Mercury (Hg)-Total		86	98		%	14	20	01-AUG-08
WG810098-1	MB							
Mercury (Hg)-Total			<0.00002		mg/L		0.00002	01-AUG-08
WG810098-9	MS	L656997-4						
Mercury (Hg)-Total			85		%		71-131	01-AUG-08
HG-ULT-DIS-CV-ED		Water						
Batch	R702794							
WG810098-2	LCS							
Mercury (Hg)-Dissolved			86		%		63-135	01-AUG-08
WG810098-3	LCSD	WG810098-2						
Mercury (Hg)-Dissolved		86	98		%	14	20	01-AUG-08
WG810098-1	MB							
Mercury (Hg)-Dissolved			<0.00002		mg/L		0.00002	01-AUG-08
WG810098-15	MS	L656988-13						
Mercury (Hg)-Dissolved			82		%		71-131	01-AUG-08
WG810098-7	MS	L656988-3						
Mercury (Hg)-Dissolved			91		%		71-131	01-AUG-08
MET1-ULTRA-DIS-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 7 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-DIS-ED	Water							
Batch	R700496							
WG807705-1	MB							
Sodium (Na)			<0.005		mg/L		0.005	26-JUL-08
Batch	R700572							
WG806952-2	CRM	1643E_WATER						
Aluminum (Al)			99		%		85-125	28-JUL-08
Arsenic (As)			95		%		88-109	28-JUL-08
Boron (B)			96		%		80-116	28-JUL-08
Beryllium (Be)			98		%		74-116	28-JUL-08
Calcium (Ca)			95		%		82-106	28-JUL-08
Cadmium (Cd)			103		%		93-112	28-JUL-08
Cobalt (Co)			103		%		90-110	28-JUL-08
Chromium (Cr)			104		%		83-118	28-JUL-08
Copper (Cu)			96		%		89-112	28-JUL-08
Potassium (K)			92		%		88-120	28-JUL-08
Magnesium (Mg)			88		%		86-109	28-JUL-08
Manganese (Mn)			97		%		81-120	28-JUL-08
Molybdenum (Mo)			100		%		91-112	28-JUL-08
Sodium (Na)			97		%		86-105	28-JUL-08
Nickel (Ni)			98		%		88-110	28-JUL-08
Lead (Pb)			105		%		89-114	28-JUL-08
Antimony (Sb)			100		%		89-112	28-JUL-08
Selenium (Se)			98		%		76-112	28-JUL-08
Strontium (Sr)			103		%		87-109	28-JUL-08
Vanadium (V)			98		%		89-112	28-JUL-08
Zinc (Zn)			103		%		84-129	28-JUL-08
Barium (Ba)			93		%		88-109	29-JUL-08
WG806952-1	MB							
Silver (Ag)			<0.0001		mg/L		0.0005	28-JUL-08
Aluminum (Al)			<0.0003		mg/L		0.0015	28-JUL-08
Arsenic (As)			<0.00003		mg/L		0.00015	28-JUL-08
Boron (B)			<0.001		mg/L		0.005	28-JUL-08
Barium (Ba)			<0.00005		mg/L		0.00025	28-JUL-08
Beryllium (Be)			<0.0002		mg/L		0.0002	28-JUL-08
Calcium (Ca)			<0.02		mg/L		0.02	28-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 8 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-DIS-ED		Water						
Batch R700572								
WG806952-1 MB								
Cadmium (Cd)			<0.00005		mg/L		0.00025	28-JUL-08
Cobalt (Co)			<0.0001		mg/L		0.0005	28-JUL-08
Chromium (Cr)			<0.00006		mg/L		0.0003	28-JUL-08
Copper (Cu)			<0.0006		mg/L		0.003	28-JUL-08
Potassium (K)			<0.02		mg/L		0.1	28-JUL-08
Magnesium (Mg)			<0.004		mg/L		0.02	28-JUL-08
Manganese (Mn)			<0.0001		mg/L		0.0005	28-JUL-08
Molybdenum (Mo)			<0.00006		mg/L		0.0003	28-JUL-08
Sodium (Na)			<0.005		mg/L		0.025	28-JUL-08
Nickel (Ni)			<0.00006		mg/L		0.0003	28-JUL-08
Lead (Pb)			<0.00005		mg/L		0.00025	28-JUL-08
Antimony (Sb)			<0.00003		mg/L		0.00015	28-JUL-08
Selenium (Se)			<0.0001		mg/L		0.0005	28-JUL-08
Strontium (Sr)			<0.0001		mg/L		0.0005	28-JUL-08
Uranium (U)			<0.00005		mg/L		0.00025	28-JUL-08
Vanadium (V)			<0.00005		mg/L		0.00025	28-JUL-08
Zinc (Zn)			<0.0008		mg/L		0.004	28-JUL-08
MET1-ULTRA-ED		Water						
Batch R700496								
WG807705-1 MB								
Sodium (Na)			<0.005		mg/L		0.005	26-JUL-08
Batch R700572								
WG806952-2 CRM		1643E_WATER						
Silver (Ag)			91		%		80-108	28-JUL-08
Aluminum (Al)			99		%		90-122	28-JUL-08
Arsenic (As)			95		%		84-105	28-JUL-08
Boron (B)			96		%		80-116	28-JUL-08
Beryllium (Be)			98		%		77-110	28-JUL-08
Calcium (Ca)			95		%		82-106	28-JUL-08
Cadmium (Cd)			103		%		87-109	28-JUL-08
Cobalt (Co)			103		%		90-110	28-JUL-08
Chromium (Cr)			104		%		84-118	28-JUL-08
Copper (Cu)			96		%		89-112	28-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 9 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-ED	Water							
Batch	R700572							
WG806952-2 CRM		1643E_WATER						
Potassium (K)			92		%		88-119	28-JUL-08
Magnesium (Mg)			88		%		86-109	28-JUL-08
Manganese (Mn)			97		%		81-120	28-JUL-08
Molybdenum (Mo)			100		%		88-111	28-JUL-08
Sodium (Na)			97		%		86-105	28-JUL-08
Nickel (Ni)			98		%		88-110	28-JUL-08
Lead (Pb)			105		%		89-110	28-JUL-08
Antimony (Sb)			100		%		86-108	28-JUL-08
Selenium (Se)			98		%		76-112	28-JUL-08
Strontium (Sr)			103		%		87-109	28-JUL-08
Vanadium (V)			98		%		87-109	28-JUL-08
Zinc (Zn)			103		%		65-133	28-JUL-08
Barium (Ba)			93		%		88-109	29-JUL-08
WG806952-7 DUP		L656997-1						
Silver (Ag)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	33	28-JUL-08
Aluminum (Al)		0.0037	0.0041		mg/L	8.0	20	28-JUL-08
Arsenic (As)		0.00153	0.00152		mg/L	0.47	11	28-JUL-08
Boron (B)		0.002	0.003	J	mg/L	0.000	0.004	28-JUL-08
Barium (Ba)		0.0104	0.0105		mg/L	1.2	10	28-JUL-08
Beryllium (Be)		<0.0002	<0.0002	RPD-NA	mg/L	N/A	26	28-JUL-08
Calcium (Ca)		10.9	11.0		mg/L	0.80	9.8	28-JUL-08
Cadmium (Cd)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	31	28-JUL-08
Cobalt (Co)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	12	28-JUL-08
Chromium (Cr)		<0.00006	<0.00006	RPD-NA	mg/L	N/A	18	28-JUL-08
Copper (Cu)		0.0012	0.0012	J	mg/L	0.0000	0.0024	28-JUL-08
Potassium (K)		0.71	0.72		mg/L	0.69	9.8	28-JUL-08
Magnesium (Mg)		1.32	1.37		mg/L	3.4	9.8	28-JUL-08
Manganese (Mn)		0.0112	0.0114		mg/L	2.0	10	28-JUL-08
Molybdenum (Mo)		0.00010	0.00011	J	mg/L	0.00000	0.00024	28-JUL-08
Sodium (Na)		2.58	2.63		mg/L	2.2	9.8	28-JUL-08
Nickel (Ni)		0.00048	0.00047	J	mg/L	0.00001	0.00024	28-JUL-08
Lead (Pb)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	12	28-JUL-08
Antimony (Sb)		<0.00003	<0.00003	RPD-NA	mg/L	N/A	10	28-JUL-08
Selenium (Se)		0.0001	0.0002	J	mg/L	0.0000	0.0004	28-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 10 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-ED		Water						
Batch	R700572							
WG806952-7	DUP	L656997-1						
Strontium (Sr)		0.0506	0.0499		mg/L	1.4	20	28-JUL-08
Uranium (U)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	10	28-JUL-08
Vanadium (V)		0.00011	0.00010	J	mg/L	0.00000	0.0002	28-JUL-08
Zinc (Zn)		0.0009	0.0009	J	mg/L	0.0000	0.0032	28-JUL-08
WG806952-1	MB							
Silver (Ag)			<0.0001		mg/L		0.0005	28-JUL-08
Aluminum (Al)			<0.0003		mg/L		0.0015	28-JUL-08
Arsenic (As)			<0.00003		mg/L		0.00015	28-JUL-08
Boron (B)			<0.001		mg/L		0.005	28-JUL-08
Barium (Ba)			<0.00005		mg/L		0.00025	28-JUL-08
Beryllium (Be)			<0.0002		mg/L		0.001	28-JUL-08
Calcium (Ca)			<0.02		mg/L		0.1	28-JUL-08
Cadmium (Cd)			<0.00005		mg/L		0.00025	28-JUL-08
Cobalt (Co)			<0.0001		mg/L		0.0005	28-JUL-08
Chromium (Cr)			<0.00006		mg/L		0.0003	28-JUL-08
Copper (Cu)			<0.0006		mg/L		0.003	28-JUL-08
Potassium (K)			<0.02		mg/L		0.1	28-JUL-08
Magnesium (Mg)			<0.004		mg/L		0.02	28-JUL-08
Manganese (Mn)			<0.0001		mg/L		0.0005	28-JUL-08
Molybdenum (Mo)			<0.00006		mg/L		0.0003	28-JUL-08
Sodium (Na)			<0.005		mg/L		0.025	28-JUL-08
Nickel (Ni)			<0.00006		mg/L		0.0003	28-JUL-08
Lead (Pb)			<0.00005		mg/L		0.00025	28-JUL-08
Antimony (Sb)			<0.00003		mg/L		0.00015	28-JUL-08
Selenium (Se)			<0.0001		mg/L		0.0005	28-JUL-08
Strontium (Sr)			<0.0001		mg/L		0.0005	28-JUL-08
Uranium (U)			<0.00005		mg/L		0.00025	28-JUL-08
Vanadium (V)			<0.00005		mg/L		0.00025	28-JUL-08
Zinc (Zn)			<0.0008		mg/L		0.004	28-JUL-08
MET2-ULTRA-DIS-ED		Water						
Batch	R700496							
WG807705-1	MB							
Iron (Fe)			<0.005		mg/L		0.025	26-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 11 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET2-ULTRA-DIS-ED	Water							
Batch R700626								
WG808187-1 MB								
Iron (Fe)			<0.005		mg/L		0.025	28-JUL-08
WG808187-3 MS		L656988-1						
Iron (Fe)			99		%		88-111	28-JUL-08
MET2-ULTRA-ED	Water							
Batch R700496								
WG807705-4 DUP		L656997-2						
Iron (Fe)		0.072	0.070		mg/L	3.4	20	26-JUL-08
WG807705-1 MB								
Iron (Fe)			<0.005		mg/L		0.025	26-JUL-08
WG807705-5 MS		L656997-2						
Iron (Fe)			100		%		78-117	26-JUL-08
Batch R700626								
WG808187-1 MB								
Iron (Fe)			<0.005		mg/L		0.025	28-JUL-08
WG808187-5 MS		L656988-13						
Iron (Fe)			101		%		78-117	28-JUL-08
N-TOTKJ-ED	Water							
Batch R696884								
WG803562-6 DUP		L656997-1						
Total Kjeldahl Nitrogen		0.2	0.2	J	mg/L	0.0	0.8	21-JUL-08
WG803562-2 LCS								
Total Kjeldahl Nitrogen			100		%		81-114	21-JUL-08
WG803562-3 LCS								
Total Kjeldahl Nitrogen			105		%		69-131	21-JUL-08
WG803562-4 LCS								
Total Kjeldahl Nitrogen			99		%		83-118	21-JUL-08
WG803562-1 MB								
Total Kjeldahl Nitrogen			<0.2		mg/L		0.2	21-JUL-08
N2N3-ED	Water							
Batch R696400								
WG802927-5 DUP		L656997-4						
Nitrate+Nitrite-N		<0.1	<0.1	RPD-NA	mg/L	N/A	6.9	18-JUL-08
WG802927-3 LCS								
Nitrate+Nitrite-N			97		%		87-113	18-JUL-08
WG802927-2 MB								
Nitrate+Nitrite-N			<0.1		mg/L		0.1	18-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 12 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
N2N3-ED		Water						
Batch	R696400							
WG802927-10	MS	L656677-7	92		%		84-118	18-JUL-08
Nitrate+Nitrite-N								
WG802927-4	MS	L656688-2	92		%		84-118	18-JUL-08
Nitrate+Nitrite-N								
WG802927-6	MS	L657338-1	104		%		84-118	18-JUL-08
Nitrate+Nitrite-N								
WG802927-8	MS	L657053-4	98		%		84-118	18-JUL-08
Nitrate+Nitrite-N								
NH4-ED		Water						
Batch	R696029							
WG802786-2	LCS		102		%		91-112	18-JUL-08
Ammonia-N								
WG802786-1	MB		<0.05		mg/L		0.05	18-JUL-08
Ammonia-N								
WG802786-5	MS	L656419-13	96		%		75-122	18-JUL-08
Ammonia-N								
WG802786-7	MS	L656997-8	113		%		75-122	18-JUL-08
Ammonia-N								
WG802786-9	MS	L657288-7	101		%		75-122	18-JUL-08
Ammonia-N								
NO2-ED		Water						
Batch	R696400							
WG802927-5	DUP	L656997-4	<0.05	RPD-NA	mg/L	N/A	6.5	18-JUL-08
Nitrite-N								
WG802927-3	LCS		96		%		94-114	18-JUL-08
Nitrite-N								
WG802927-2	MB		<0.05		mg/L		0.05	18-JUL-08
Nitrite-N								
WG802927-10	MS	L656677-7	100		%		88-113	18-JUL-08
Nitrite-N								
WG802927-4	MS	L656688-2	102		%		88-113	18-JUL-08
Nitrite-N								
WG802927-6	MS	L657338-1	110		%		88-113	18-JUL-08
Nitrite-N								
WG802927-8	MS	L657053-4	102		%		88-113	18-JUL-08
Nitrite-N								
OGG-IR-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 13 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OGG-IR-ED								
Water								
Batch	R697626							
WG805028-2	LCS							
Oil & Grease-(IR)			121		%		91-146	22-JUL-08
WG805028-1	MB							
Oil & Grease-(IR)			<0.5		mg/L		0.5	22-JUL-08
P-TOTAL-LOW-ED								
Water								
Batch	R699790							
WG806660-3	LCS							
Phosphorus, Total			108		%		80-116	25-JUL-08
WG806660-2	MB							
Phosphorus, Total			<0.001		mg/L		0.001	25-JUL-08
WG806660-10	MS	L656988-3						
Phosphorus, Total			107		%		70-130	25-JUL-08
WG806660-11	MS	L656988-7						
Phosphorus, Total			95		%		70-130	25-JUL-08
WG806660-12	MS	L656995-4						
Phosphorus, Total			107		%		70-130	25-JUL-08
WG806660-13	MS	L656995-6						
Phosphorus, Total			104		%		70-130	25-JUL-08
WG806660-9	MS	L656988-1						
Phosphorus, Total			94		%		70-130	25-JUL-08
P-TOTALDIS-LOW-ED								
Water								
Batch	R699790							
WG806660-3	LCS							
Phosphorus, Total Dissolved			108		%		80-116	25-JUL-08
WG806660-2	MB							
Phosphorus, Total Dissolved			<0.001		mg/L		0.001	25-JUL-08
PH/EC/ALK-ED								
Water								
Batch	R696087							
WG802797-6	DUP	L656997-1						
pH		7.6	7.6	J	pH	0.0	0.2	18-JUL-08
Conductivity (EC)		85.3	86.0	J	uS/cm	0.7	10	18-JUL-08
Bicarbonate (HCO3)		34	34	J	mg/L	0	20	18-JUL-08
Carbonate (CO3)		<5	<5	RPD-NA	mg/L	N/A	26	18-JUL-08
Hydroxide (OH)		<5	<5	RPD-NA	mg/L	N/A	26	18-JUL-08
Alkalinity, Total (as CaCO3)		28	28	J	mg/L	0	20	18-JUL-08
WG802797-2	LCS							
Conductivity (EC)			104		%		94-106	18-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 14 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH/EC/ALK-ED		Water						
Batch	R696087							
WG802797-3	LCS							
pH			7.0		pH		6.9-7.1	18-JUL-08
WG802797-4	LCS							
Alkalinity, Total (as CaCO3)			104		%		90-110	18-JUL-08
WG802797-1	MB							
Bicarbonate (HCO3)			<5		mg/L		5	18-JUL-08
Carbonate (CO3)			<5		mg/L		5	18-JUL-08
Hydroxide (OH)			<5		mg/L		5	18-JUL-08
Alkalinity, Total (as CaCO3)			<5		mg/L		5	18-JUL-08
PHENOLS-4AAP-ED		Water						
Batch	R698232							
WG805820-2	LCS							
Phenols (4AAP)			104		%		85-115	23-JUL-08
WG805820-1	MB							
Phenols (4AAP)			<0.001		mg/L		0.001	23-JUL-08
WG805820-3	MS	L656997-6						
Phenols (4AAP)			101		%		76-124	23-JUL-08
WG805820-6	MS	L657445-1						
Phenols (4AAP)			107		%		76-124	23-JUL-08
WG805820-9	MS	L658116-9						
Phenols (4AAP)			97		%		76-124	23-JUL-08
PO4-LOW-ED		Water						
Batch	R696726							
WG803398-12	DUP	L656997-8						
Orthophosphate (PO4-P)		<0.001	<0.001	RPD-NA	mg/L	N/A	11	18-JUL-08
WG803398-3	LCS							
Orthophosphate (PO4-P)			101		%		91-108	18-JUL-08
WG803398-2	MB							
Orthophosphate (PO4-P)			<0.001		mg/L		0.001	18-JUL-08
WG803398-11	MS	L656997-4						
Orthophosphate (PO4-P)			103		%		82-116	18-JUL-08
WG803398-5	MS	L656419-13						
Orthophosphate (PO4-P)			102		%		82-116	18-JUL-08
WG803398-8	MS	L657438-1						
Orthophosphate (PO4-P)			103		%		82-116	18-JUL-08
SOLIDS-TDS-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 15 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TDS-ED	Water							
Batch R697064								
WG803114-2 LCS								
Total Dissolved Solids			98		%		87-112	21-JUL-08
WG803114-1 MB								
Total Dissolved Solids			<5		mg/L		5	21-JUL-08
Batch R698079								
WG804818-2 LCS								
Total Dissolved Solids			99		%		87-112	23-JUL-08
WG804818-1 MB								
Total Dissolved Solids			<5		mg/L		5	23-JUL-08
SOLIDS-TOTSUS-ED	Water							
Batch R697063								
WG803842-2 LCS								
Total Suspended Solids			102		%		82-111	21-JUL-08
WG803842-1 MB								
Total Suspended Solids			3		mg/L		3	21-JUL-08
Batch R697578								
WG804462-2 LCS								
Total Suspended Solids			104		%		82-111	22-JUL-08
WG804462-1 MB								
Total Suspended Solids			<3		mg/L		3	22-JUL-08
TL-ULTRA-DIS-ED	Water							
Batch R700572								
WG806952-2 CRM		1643E_WATER						
Thallium (TI)-Dissolved			101		%		79-126	28-JUL-08
WG806952-1 MB								
Thallium (TI)-Dissolved			<0.00003		mg/L		0.00015	28-JUL-08
TL-ULTRA-ED	Water							
Batch R700572								
WG806952-2 CRM		1643E_WATER						
Thallium (TI)-Total			101		%		90-110	28-JUL-08
WG806952-7 DUP		L656997-1						
Thallium (TI)-Total		<0.00003	<0.00003	RPD-NA	mg/L	N/A	26	25-JUL-08
WG806952-1 MB								
Thallium (TI)-Total			<0.00003		mg/L		0.00015	28-JUL-08
C-INORG-ORG-SK	Soil							

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 16 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-INORG-ORG-SK		Soil						
Batch	R697667							
WG804379-1	DUP	L656997-12						
Inorganic Carbon		<0.1	<0.1	RPD-NA	%	N/A	12	22-JUL-08
CaCO3 Equivalent		<0.7	<0.7	RPD-NA	%	N/A	26	22-JUL-08
WG804379-2	IRM	0.4%IC						
Inorganic Carbon			0.4		%		0.3-0.5	22-JUL-08
Batch	R698417							
WG805863-1	DUP	L656997-14						
Inorganic Carbon		<0.1	<0.1	RPD-NA	%	N/A	12	23-JUL-08
CaCO3 Equivalent		<0.7	0.9	RPD-NA	%	N/A	26	23-JUL-08
WG805863-2	IRM	0.4%IC						
Inorganic Carbon			0.4		%		0.3-0.5	23-JUL-08
C-TOT-LECO-SK		Soil						
Batch	R697878							
WG804386-1	DUP	L656997-11						
Total Carbon by Combustion		6.9	6.8		%	0.46	6.4	22-JUL-08
WG804386-2	IRM	1.6%C						
Total Carbon by Combustion			1.5		%		1.3-1.7	22-JUL-08
Batch	R698422							
WG805376-1	DUP	L656997-14						
Total Carbon by Combustion		8.0	7.9		%	1.3	6.4	23-JUL-08
WG805376-2	IRM	1.6%C						
Total Carbon by Combustion			1.5		%		1.3-1.7	23-JUL-08
CN-TOT-WP		Soil						
Batch	R700696							
WG808481-3	CCV							
Cyanide, Total			106		%		90-110	28-JUL-08
WG808481-2	CVS							
Cyanide, Total			107		%		80-120	28-JUL-08
METAL-CCME-ED		Soil						
Batch	R697469							
WG803647-2	CRM	2702_SOIL						
Silver (Ag)			139		%		47-158	21-JUL-08
Arsenic (As)			100		%		92-111	21-JUL-08
Barium (Ba)			109		%		90-123	21-JUL-08
Beryllium (Be)			108		%		80-126	21-JUL-08
Cadmium (Cd)			100		%		87-117	21-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 17 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
METAL-CCME-ED		Soil						
Batch	R697469							
WG803647-2	CRM	2702_SOIL						
Cobalt (Co)			104		%		90-120	21-JUL-08
Chromium (Cr)			108		%		86-119	21-JUL-08
Copper (Cu)			102		%		91-118	21-JUL-08
Mercury (Hg)			122		%		37-185	21-JUL-08
Molybdenum (Mo)			112		%		87-124	21-JUL-08
Nickel (Ni)			103		%		89-121	21-JUL-08
Lead (Pb)			110		%		90-126	21-JUL-08
Selenium (Se)			106		%		78-123	21-JUL-08
Tin (Sn)			103		%		73-139	21-JUL-08
Uranium (U)			100		%		89-128	21-JUL-08
Vanadium (V)			95		%		86-116	21-JUL-08
Zinc (Zn)			94		%		81-112	21-JUL-08
WG803647-1	MB							
Silver (Ag)			<1		mg/kg		5	21-JUL-08
Arsenic (As)			<0.2		mg/kg		1	21-JUL-08
Barium (Ba)			<5		mg/kg		25	21-JUL-08
Beryllium (Be)			<1		mg/kg		1	21-JUL-08
Cadmium (Cd)			<0.5		mg/kg		2.5	21-JUL-08
Cobalt (Co)			<1		mg/kg		5	21-JUL-08
Chromium (Cr)			<0.5		mg/kg		2.5	21-JUL-08
Copper (Cu)			<2		mg/kg		10	21-JUL-08
Mercury (Hg)			<0.05		mg/kg		0.25	21-JUL-08
Molybdenum (Mo)			<1		mg/kg		5	21-JUL-08
Nickel (Ni)			<2		mg/kg		10	21-JUL-08
Lead (Pb)			<5		mg/kg		25	21-JUL-08
Antimony (Sb)			<0.2		mg/kg		1	21-JUL-08
Selenium (Se)			<0.2		mg/kg		1	21-JUL-08
Tin (Sn)			<5		mg/kg		25	21-JUL-08
Thallium (Tl)			<1		mg/kg		5	21-JUL-08
Uranium (U)			<2		mg/kg		2	21-JUL-08
Vanadium (V)			<1		mg/kg		5	21-JUL-08
Zinc (Zn)			<10		mg/kg		50	21-JUL-08
WG803647-4	MS	L657122-1						
Silver (Ag)			56		%		18-114	21-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 18 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
METAL-CCME-ED		Soil						
Batch	R697469							
WG803647-4	MS	L657122-1						
Arsenic (As)			103		%		91-114	21-JUL-08
Barium (Ba)			105		%		56-151	21-JUL-08
Beryllium (Be)			104		%		82-121	21-JUL-08
Cadmium (Cd)			107		%		92-117	21-JUL-08
Cobalt (Co)			94		%		87-112	21-JUL-08
Chromium (Cr)			103		%		85-117	21-JUL-08
Copper (Cu)			97		%		80-116	21-JUL-08
Mercury (Hg)			100		%		48-138	21-JUL-08
Molybdenum (Mo)			115		%		91-122	21-JUL-08
Nickel (Ni)			94		%		83-112	21-JUL-08
Lead (Pb)			109		%		83-119	21-JUL-08
Antimony (Sb)			108		%		90-118	21-JUL-08
Selenium (Se)			106		%		90-120	21-JUL-08
Tin (Sn)			106		%		92-118	21-JUL-08
Thallium (Tl)			113		%		83-126	21-JUL-08
Uranium (U)			105		%		86-117	21-JUL-08
Vanadium (V)			105		%		84-117	21-JUL-08
Zinc (Zn)			102		%		85-118	21-JUL-08
Batch	R698333							
WG805440-2	CRM	2702_SOIL						
Silver (Ag)			107		%		47-158	23-JUL-08
Arsenic (As)			102		%		92-111	23-JUL-08
Barium (Ba)			106		%		90-123	23-JUL-08
Beryllium (Be)			103		%		80-126	23-JUL-08
Cadmium (Cd)			102		%		87-117	23-JUL-08
Cobalt (Co)			104		%		90-120	23-JUL-08
Chromium (Cr)			106		%		86-119	23-JUL-08
Copper (Cu)			103		%		91-118	23-JUL-08
Mercury (Hg)			120		%		37-185	23-JUL-08
Molybdenum (Mo)			112		%		87-124	23-JUL-08
Nickel (Ni)			102		%		89-121	23-JUL-08
Lead (Pb)			109		%		90-126	23-JUL-08
Selenium (Se)			109		%		78-123	23-JUL-08
Tin (Sn)			119		%		73-139	23-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 19 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
METAL-CCME-ED		Soil						
Batch	R698333							
WG805440-2	CRM	2702_SOIL						
Uranium (U)			100		%		89-128	23-JUL-08
Vanadium (V)			99		%		86-116	23-JUL-08
Zinc (Zn)			94		%		81-112	23-JUL-08
WG805440-1	MB							
Silver (Ag)			<1		mg/kg		5	23-JUL-08
Arsenic (As)			<0.2		mg/kg		1	23-JUL-08
Barium (Ba)			<5		mg/kg		25	23-JUL-08
Beryllium (Be)			<1		mg/kg		1	23-JUL-08
Cadmium (Cd)			<0.5		mg/kg		2.5	23-JUL-08
Cobalt (Co)			<1		mg/kg		5	23-JUL-08
Chromium (Cr)			<0.5		mg/kg		2.5	23-JUL-08
Copper (Cu)			<2		mg/kg		10	23-JUL-08
Mercury (Hg)			<0.05		mg/kg		0.25	23-JUL-08
Molybdenum (Mo)			<1		mg/kg		5	23-JUL-08
Nickel (Ni)			<2		mg/kg		10	23-JUL-08
Lead (Pb)			<5		mg/kg		25	23-JUL-08
Antimony (Sb)			<0.2		mg/kg		1	23-JUL-08
Selenium (Se)			<0.2		mg/kg		1	23-JUL-08
Tin (Sn)			<5		mg/kg		25	23-JUL-08
Thallium (Tl)			<1		mg/kg		5	23-JUL-08
Uranium (U)			<2		mg/kg		2	23-JUL-08
Vanadium (V)			<1		mg/kg		5	23-JUL-08
Zinc (Zn)			<10		mg/kg		50	23-JUL-08
WG805440-4	MS	L658412-2						
Silver (Ag)			77		%		18-114	23-JUL-08
Arsenic (As)			105		%		91-114	23-JUL-08
Barium (Ba)			116		%		56-151	23-JUL-08
Beryllium (Be)			108		%		82-121	23-JUL-08
Cadmium (Cd)			107		%		92-117	23-JUL-08
Cobalt (Co)			101		%		87-112	23-JUL-08
Chromium (Cr)			109		%		85-117	23-JUL-08
Copper (Cu)			102		%		80-116	23-JUL-08
Mercury (Hg)			57		%		48-138	23-JUL-08
Molybdenum (Mo)			108		%		91-122	23-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 20 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
METAL-CCME-ED		Soil						
Batch	R698333							
WG805440-4	MS	L658412-2						
Nickel (Ni)			102		%		83-112	23-JUL-08
Lead (Pb)			106		%		83-119	23-JUL-08
Antimony (Sb)			108		%		90-118	23-JUL-08
Selenium (Se)			107		%		90-120	23-JUL-08
Tin (Sn)			108		%		92-118	23-JUL-08
Thallium (Tl)			109		%		83-126	23-JUL-08
Uranium (U)			108		%		86-117	23-JUL-08
Vanadium (V)			109		%		84-117	23-JUL-08
Zinc (Zn)			103		%		85-118	23-JUL-08
N-TOT-LECO-SK		Soil						
Batch	R697600							
WG804391-2	CRM	SO2_SOIL						
Total Nitrogen by LECO			0.22		%		0.19-0.26	22-JUL-08
WG804391-1	DUP	L656997-13						
Total Nitrogen by LECO		0.82	0.81	J	%	0.01	0.068	22-JUL-08
Batch	R698400							
WG805145-2	CRM	SO2_SOIL						
Total Nitrogen by LECO			0.25		%		0.19-0.26	23-JUL-08
PAH-ALK-ED		Soil						
Batch	R699517							
WG804171-3	LCS							
Acenaphthene			101		%		52-128	25-JUL-08
Acenaphthylene			98		%		49-125	25-JUL-08
Acridine			107		%		55-145	25-JUL-08
Anthracene			93		%		52-128	25-JUL-08
Benzo(a)anthracene			111		%		41-135	25-JUL-08
Benzo(a)pyrene			107		%		40-132	25-JUL-08
Benzo(b&j)fluoranthene			106		%		55-145	25-JUL-08
Benzo(k)fluoranthene			111		%		49-134	25-JUL-08
Benzo(ghi)perylene			89		%		37-133	25-JUL-08
Biphenyl			103		%		60-126	25-JUL-08
C2 sub'd naphthalene			103		%		54-121	25-JUL-08
C3 sub'd naphthalene			104		%		58-129	25-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 21 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ALK-ED		Soil						
Batch	R699517							
WG804171-3	LCS							
C4 sub'd phenanthrene/anth.			111		%		55-145	25-JUL-08
Chrysene			110		%		57-130	25-JUL-08
Dibenzo(a,h)anthracene			98		%		31-132	25-JUL-08
Dibenzothiophene			101		%		55-130	25-JUL-08
Fluoranthene			106		%		50-129	25-JUL-08
Fluorene			102		%		52-127	25-JUL-08
Indeno(1,2,3-cd)pyrene			101		%		40-132	25-JUL-08
1-Methylnaphthalene			99		%		44-124	25-JUL-08
Methyl phenanthrene/anthracene			84		%		52-125	25-JUL-08
Naphthalene			92		%		36-132	25-JUL-08
Phenanthrene			110		%		46-132	25-JUL-08
Pyrene			105		%		49-134	25-JUL-08
Quinoline			101		%		44-118	25-JUL-08
Retene			110		%		55-145	25-JUL-08
WG804171-1	MB							
Acenaphthene			<0.005		mg/kg		0.01	25-JUL-08
Acenaphthylene			<0.005		mg/kg		0.01	25-JUL-08
Acridine			<0.005		mg/kg		0.01	25-JUL-08
Anthracene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(a)anthracene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(a)pyrene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(b&j)fluoranthene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(k)fluoranthene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(ghi)perylene			<0.005		mg/kg		0.01	25-JUL-08
Biphenyl			<0.005		mg/kg		0.01	25-JUL-08
C2 sub'd B(a)A/chrysene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd B(b&k)F/B(a)P			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd biphenyl			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd fluorene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd naphthalene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd phenanthrene/anth.			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd naphthalene			<0.02		mg/kg		0.04	25-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 22 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ALK-ED		Soil						
Batch R699517								
WG804171-1 MB								
C3 sub'd phenanthrene/anth.			<0.02		mg/kg		0.04	25-JUL-08
C4 sub'd dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
C4 sub'd naphthalene			<0.02		mg/kg		0.04	25-JUL-08
C4 sub'd phenanthrene/anth.			<0.02		mg/kg		0.04	25-JUL-08
Chrysene			<0.005		mg/kg		0.01	25-JUL-08
Dibenzo(a,h)anthracene			<0.005		mg/kg		0.01	25-JUL-08
Dibenzothiophene			<0.005		mg/kg		0.01	25-JUL-08
Fluoranthene			<0.005		mg/kg		0.01	25-JUL-08
Fluorene			<0.005		mg/kg		0.01	25-JUL-08
Indeno(c,d-123)pyrene			<0.005		mg/kg		0.01	25-JUL-08
Methyl B(a)A/chrysene			<0.02		mg/kg		0.04	25-JUL-08
Methyl B(b&k)F/B(a)P			<0.02		mg/kg		0.04	25-JUL-08
Methyl acenaphthene			<0.02		mg/kg		0.04	25-JUL-08
Methyl biphenyl			<0.02		mg/kg		0.04	25-JUL-08
Methyl dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
Methyl fluoranthene/pyrene			<0.02		mg/kg		0.04	25-JUL-08
Methyl fluorene			<0.02		mg/kg		0.04	25-JUL-08
1-Methylnaphthalene			<0.005		mg/kg		0.01	25-JUL-08
Methyl phenanthrene/anthracene			<0.02		mg/kg		0.04	25-JUL-08
Naphthalene			0.009		mg/kg		0.01	25-JUL-08
Phenanthrene			<0.005		mg/kg		0.01	25-JUL-08
Pyrene			<0.005		mg/kg		0.01	25-JUL-08
Quinoline			<0.005		mg/kg		0.01	25-JUL-08
C2 sub'd fluoranthene/pyrene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd fluoranthene/pyrene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd fluorene			<0.02		mg/kg		0.04	25-JUL-08
Retene			<0.005		mg/kg		0.01	25-JUL-08
PSA-1-SK		Soil						
Batch R698365								
WG804397-1 DUP		L656997-12						
% Sand (2.0mm - 0.05mm)		69	68	J	%	1	3.1	23-JUL-08
% Silt (0.05mm - 2um)		28	28	J	%	0	3.1	23-JUL-08
% Clay (<2um)		3	4	J	%	1	4	23-JUL-08
WG804397-2 IRM		FARM98						

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 23 of 24

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PSA-1-SK		Soil						
Batch	R698365							
WG804397-2	IRM	FARM98						
% Sand (2.0mm - 0.05mm)			49		%		40-51	23-JUL-08
% Silt (0.05mm - 2um)			28		%		26-33	23-JUL-08
Batch	R698946							
WG805156-3	IRM	FARM98						
% Sand (2.0mm - 0.05mm)			48		%		40-51	24-JUL-08
% Silt (0.05mm - 2um)			28		%		26-33	24-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L656997

Report Date: 19-NOV-08

Page 24 of 24

Legend:

Limit	99% Confidence Interval (Laboratory Control Limits)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

REPORT TO:		REPORT FORMAT / DISTRIBUTION						SERVICE REQUESTED										
COMPANY: Golder Associates		STANDARD ☒ OTHER _____						REGULAR SERVICE (DEFAULT) ☒										
CONTACT: Kerrie Serben		PDF ☒ EXCEL ☒ CUSTOM _____ FAX _____						RUSH SERVICE (2-3 DAYS)										
ADDRESS: 195 Pemberton Ave North Vancouver, BC		EMAIL 1: Kserben@golder.com						PRIORITY SERVICE (1 DAY or ASAP)										
		EMAIL 2: Ade Bruyn@golder.com						EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS										
PHONE: 604-986-4331 FAX: 604-662-8548								ANALYSIS REQUEST										
INVOICE TO: SAME AS REPORT? YES / NO		INDICATE BOTTLES: FILTERED / PRESERVED (F/P) → → →																
COMPANY: Comaplex Minerals Corp		CLIENT / PROJECT INFORMATION: phase																
CONTACT: Sandy Barham		JOB #: 07-1373-0055-6030																
ADDRESS: Suite 901, 1015-4th St. SW Calgary, AB T2R-1J4		PO / AFE:																
PHONE: _____ FAX: _____		Legal Site Description: multiple sites																
QUOTE #:																		
Lab Work Order # (lab use only) 1056997		SAMPLER (Initials): TAE																
Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	ROLLED, C-TOT-INORG-ED SOLIDS-TOTALS-ED, TDS-ED	CYANIDE	NH ₄ -ED, N-TOTAL-DIS-ED, P-TOTAL-LOW-ED, P ₄ -LOW-ED	P-TOTAL-DIS-LOW-ED	C-TOT-ORG-ED, C-TOT-FED	C-DIS-ORG-LOW-ED	MET-ULTRA-ED	MET-ULTRA-DIS-ED	CHLOROPHYLL A	PHENOLS-4AAP-ED	OCG-IR-ED	BTEX, FI	FZ, F3, F4-EL	NUMBER OF CONTAINERS
1	B5	14-July-2008	08:00	freshwater	X	X	X	X	X	X	X	X	X	X	X	X	X	17
2	A8	↓	16:10	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	17
3	A54	15-July-2008	13:00	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	17
4	Z3-2	↓	13:30	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	17
5	BOOT-1	↓	14:45	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	17
6	Z9-8	↓	17:00	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	17
GUIDELINES / REGULATIONS				SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS														
CCME AWG and CCME DWG				Water samples. Refrigerate and contact Kerrie Serben or Adrian de Bruyn, Golder Associates, North Vancouver, 604-986-4331, if any questions.														
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 reverse page of the white report copy.																		
RELINQUISHED BY: Thalia Zis	DATE & TIME: July 16, 07:00	RECEIVED BY:	DATE & TIME:	SAMPLE CONDITION (lab use only)														
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY: RSC@ 10:56	DATE & TIME: 17-Jul-08	TEMPERATURE 6.5°C	SAMPLES RECEIVED IN GOOD CONDITION? YES / NO (If no provide details)													

REFER TO BACK PAGE FOR REGIONAL LOCATIONS AND SAMPLING INFORMATION

TOTAL OF 5 coolers this shipment



Environmental Division

www.alsenviro.com

REPORT TO:		REPORT FORMAT / DISTRIBUTION		SERVICE REQUESTED															
COMPANY: <u>Golder Associates</u>		STANDARD ☒ OTHER ☐		REGULAR SERVICE (DEFAULT) ☒															
CONTACT: <u>Kerrie Serben</u>		PDF ☒ EXCEL ☒ CUSTOM ☐ FAX ☐		RUSH SERVICE (2-3 DAYS)															
ADDRESS: <u>195 Pemberton Ave</u>		EMAIL 1: <u>K.Serben@golder.com</u>		PRIORITY SERVICE (1 DAY or ASAP)															
<u>North Vancouver, BC</u>		EMAIL 2: <u>A de Bruyn@golder.com</u>		EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS															
PHONE: <u>604-986-4331</u> FAX: <u>604-662-8548</u>		ANALYSIS REQUEST																	
INVOICE TO: SAME AS REPORT ? YES ☐ NO ☒		INDICATE BOTTLES: FILTERED / PRESERVED (F/P) → → →																	
COMPANY: <u>Comaplex Minerals Corp</u>		CLIENT / PROJECT INFORMATION:																	
CONTACT: <u>Sandy Barham</u>		JOB #: <u>07-1373-0055 Phase 6030</u>																	
ADDRESS: <u>Suite 901, 1015-4th St. SW</u>		PO / AFE:																	
<u>Calgary, AB T2R-1J4</u>		Legal Site Description: <u>multiple sites</u>																	
PHONE: FAX:		QUOTE #:																	
Lab Work Order # (lab use only)		SAMPLER (Initials): <u>TAZ</u>																	
Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	CN-TOT-WT	METAL-CCME-ED	PSA-1-SK	C-TOT-ORG-LEO-SK	(N-TOTALS, TOX, TIC, TOC)	PAH-ALK-ED							HAZARDOUS ?	HIGHLY CONTAMINATED ?	NUMBER OF CONTAINERS
9	B5-1a	14-July-2008	10:25	sediment	X	X	X	X		X									5
10	B5-1b		10:25		X	X	X	X		X									5
11	B5-2a		11:30		X	X	X	X		X									5
12	B5-2b		11:30		X	X	X	X		X									5
13	A8-1a	15-July 2008	09:00		X	X	X	X		X									3
14	A8-1b		09:00		X	X	X	X		X									3
15	A8-2a		10:00		X	X	X	X		X									3
16	A8-2b		10:00		X	X	X	X		X									3
GUIDELINES / REGULATIONS										SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS									
CCME AWG for sediment										Sediment samples. Refrigerate and contact Kerrie Serben or Adrian de Bruyn, Golder Associates, North Vancouver, 604-986-4331 if any questions.									
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 reverse page of the white report copy.																			
RELINQUISHED BY:		DATE & TIME:		RECEIVED BY:		DATE & TIME:		SAMPLE CONDITION (lab use only)											
<u>Thalia Zis</u>		<u>July 16, 07:00</u>						TEMPERATURE: SAMPLES RECEIVED IN GOOD CONDITION ? YES / NO (If no provide details)											
RELINQUISHED BY:		DATE & TIME:		RECEIVED BY:		DATE & TIME:													



Environmental Division

Certificate of Analysis

GOLDER ASSOCIATES LTD

ATTN: KERRIE SERBEN

195 PEMBERTON AVE

NORTH VANCOUVER BC V7P 2R4

Reported On: 19-NOV-08 09:28 AM

Revision: 8

Lab Work Order #: **L658105**

Date Received: **21-JUL-08**

Project P.O. #: NOT SUBMITTED

Job Reference: 07-1373-0055-PHASE 6030

Legal Site Desc: MULTIPLE SITES

CofC Numbers:

Other Information:

Comments: ADDITIONAL 19-SEP-08 10:04
ADDITIONAL 10-SEP-08 17:30


NHAN H NGUYEN
Senior Account Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

ALS Canada Ltd. (formerly ETL Chemspec Analytical Ltd.)

Part of the **ALS Laboratory Group**

9936-67 Avenue, Edmonton, AB T6E 0P5

Phone: +1 780 413 5227 Fax: +1 780 437 2311 www.alsglobal.com

A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L658105-4 SEDIMENT 16-JUL-08 08:00 BOOT-1-1A	L658105-5 SEDIMENT 16-JUL-08 08:00 BOOT-1-1B	L658105-6 SEDIMENT 16-JUL-08 13:00 BOOT-1-2A	L658105-7 SEDIMENT 16-JUL-08 13:00 BOOT-1-2B	L658105-8 SEDIMENT 16-JUL-08 14:40 BOOT-2-1A
Grouping	Analyte					
SOIL						
Physical Tests	% Moisture (%)	55	48	41	37	84
Particle Size	Texture	Loamy sand	Loamy sand	Loamy sand	Loamy sand	Sandy loam
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)	0.15	0.13	0.08	0.07	0.64
Cyanides	Cyanide, Total (mg/kg)	0.6	0.8	<0.5	<0.5	3.3
Organic / Inorganic Carbon	CaCO3 Equivalent (%)	<0.7	<0.7	<0.7	<0.7	1.2
	Inorganic Carbon (%)	<0.09	<0.09	<0.09	<0.09	<0.09
		<0.1	<0.1	<0.1	<0.1	<0.1
	Total Carbon by Combustion (%)	1.6	1.6	0.8	0.8	6.4
	Total Organic Carbon (%)	1.6	1.6	0.8	0.8	6.4
Metals	Antimony (Sb) (mg/kg)	<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As) (mg/kg)	5.3	4.6	2.6	2.8	65.1
	Barium (Ba) (mg/kg)	34	32	24	28	124
	Beryllium (Be) (mg/kg)	<1	<1	<1	<1	<1
	Cadmium (Cd) (mg/kg)	<0.5	<0.5	<0.5	<0.5	<0.5
	Chromium (Cr) (mg/kg)	20.3	19.3	15.4	17.2	51.1
	Cobalt (Co) (mg/kg)	4	4	3	3	18
	Copper (Cu) (mg/kg)	9	9	6	7	72
	Lead (Pb) (mg/kg)	<5	<5	<5	<5	14
	Mercury (Hg) (mg/kg)	<0.05	<0.05	<0.05	<0.05	<0.05
	Molybdenum (Mo) (mg/kg)	2	2	<1	<1	5
	Nickel (Ni) (mg/kg)	13	13	9	10	66
	Selenium (Se) (mg/kg)	0.2	0.2	<0.2	<0.2	1.3
	Silver (Ag) (mg/kg)	<1	<1	<1	<1	<1
	Thallium (Tl) (mg/kg)	<1	<1	<1	<1	<1
	Tin (Sn) (mg/kg)	<5	<5	<5	<5	<5
	Uranium (U) (mg/kg)	<2	<2	<2	<2	4
	Vanadium (V) (mg/kg)	19	17	14	16	56
	Zinc (Zn) (mg/kg)	30	30	20	20	100
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005
	Acenaphthylene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005
	Acridine (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005
	Anthracene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005
	Benzo(a)anthracene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005
	Benzo(a)pyrene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005
	Benzo(b&j)fluoranthene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005
	Benzo(ghi)perylene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658105-9	L658105-10	L658105-11	L658105-12	L658105-13
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	16-JUL-08	16-JUL-08	16-JUL-08	17-JUL-08	17-JUL-08
		Sampled Time	14:40	15:30	15:30	16:50	16:50
		Client ID	BOOT-2-1B	BOOT-2-2A	BOOT-2-2B	ML-A-1A	ML-A-1B
Grouping	Analyte						
SOIL							
Physical Tests	% Moisture (%)		83	85	83	75	75
Particle Size	Texture		Sandy loam	Sandy loam	Sandy loam	Sandy loam	Silt loam / Sandy loam
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)		0.53	0.61	0.55	0.40	0.38
Cyanides	Cyanide, Total (mg/kg)		2.5	3.3	1.3	1.7	2.3
Organic / Inorganic Carbon	CaCO3 Equivalent (%)		1.3	1.5	1.3	1.4	1.3
				1.6	1.4	1.5	1.4
	Inorganic Carbon (%)		<0.09	0.1	<0.09	0.09	<0.09
			<0.1	0.10	<0.1	<0.1	<0.1
	Total Carbon by Combustion (%)		5.8	6.2	5.4	3.8	3.7
	Total Organic Carbon (%)		5.8	6.1	5.4	3.8	3.7
Metals	Antimony (Sb) (mg/kg)		<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As) (mg/kg)		40.5	52.6	28.7	38.0	21.4
	Barium (Ba) (mg/kg)		118	112	111	87	87
	Beryllium (Be) (mg/kg)		<1	<1	<1	<1	<1
	Cadmium (Cd) (mg/kg)		<0.5	<0.5	<0.5	<0.5	<0.5
	Chromium (Cr) (mg/kg)		53.4	46.0	48.9	34.1	36.0
	Cobalt (Co) (mg/kg)		19	14	17	8	8
	Copper (Cu) (mg/kg)		76	63	67	39	44
	Lead (Pb) (mg/kg)		13	14	12	9	8
	Mercury (Hg) (mg/kg)		<0.05	<0.05	<0.05	0.05	<0.05
	Molybdenum (Mo) (mg/kg)		5	4	4	3	3
	Nickel (Ni) (mg/kg)		70	57	63	35	36
	Selenium (Se) (mg/kg)		1.2	1.1	1.1	0.7	0.7
	Silver (Ag) (mg/kg)		<1	<1	<1	<1	<1
	Thallium (Tl) (mg/kg)		<1	<1	<1	<1	<1
	Tin (Sn) (mg/kg)		<5	<5	<5	<5	<5
	Uranium (U) (mg/kg)		4	3	3	<2	2
	Vanadium (V) (mg/kg)		58	50	53	36	39
	Zinc (Zn) (mg/kg)		100	90	90	50	60
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)		<0.005	<0.005	<0.005		
	Acenaphthylene (mg/kg)		<0.005	<0.005	<0.005		
	Acridine (mg/kg)		<0.005	<0.005	<0.005		
	Anthracene (mg/kg)		<0.005	<0.005	<0.005		
	Benzo(a)anthracene (mg/kg)		<0.005	<0.005	<0.005		
	Benzo(a)pyrene (mg/kg)		<0.005	<0.005	<0.005		
	Benzo(b&j)fluoranthene (mg/kg)		<0.005	<0.005	<0.005		
	Benzo(ghi)perylene (mg/kg)		<0.005	<0.005	<0.005		

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

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L658105-14 SEDIMENT 17-JUL-08 17:10 ML-A-2A	L658105-15 SEDIMENT 17-JUL-08 17:10 ML-A-2B	L658105-16 SEDIMENT 17-JUL-08 15:45 ML-E-1A	L658105-17 SEDIMENT 17-JUL-08 15:45 ML-E-1B	L658105-18 SEDIMENT 17-JUL-08 16:10 ML-E-2A
Grouping	Analyte					
SOIL						
Physical Tests	% Moisture (%)	73	75	50	54	54
Particle Size	Texture	Sandy loam	Silt loam	Sandy loam	Sandy loam	Sandy loam / Loamy sand
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)	0.40	0.36	0.10	0.10	0.16
Cyanides	Cyanide, Total (mg/kg)	1.5	2.0	0.9	<0.5	<0.5
Organic / Inorganic Carbon	CaCO3 Equivalent (%)	1.5	1.3	0.7	0.8	1.1
		1.6	1.4			1.2
	Inorganic Carbon (%)	0.1	<0.09	<0.09	<0.09	0.10
		0.11	<0.1	<0.1	<0.1	<0.1
	Total Carbon by Combustion (%)	3.7	3.7	1.1	1.1	1.5
	Total Organic Carbon (%)	3.5	3.7	1.1	1.1	1.5
Metals	Antimony (Sb) (mg/kg)	<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As) (mg/kg)	55.1	26.8	5.2	4.5	7.8
	Barium (Ba) (mg/kg)	81	81	27	35	49
	Beryllium (Be) (mg/kg)	<1	<1	<1	<1	<1
	Cadmium (Cd) (mg/kg)	<0.5	<0.5	<0.5	<0.5	<0.5
	Chromium (Cr) (mg/kg)	31.6	34.2	13.8	18.0	18.5
	Cobalt (Co) (mg/kg)	8	8	3	3	4
	Copper (Cu) (mg/kg)	36	42	11	16	18
	Lead (Pb) (mg/kg)	9	7	<5	<5	<5
	Mercury (Hg) (mg/kg)	<0.05	<0.05	<0.05	<0.05	<0.05
	Molybdenum (Mo) (mg/kg)	3	3	<1	<1	1
	Nickel (Ni) (mg/kg)	33	33	10	14	16
	Selenium (Se) (mg/kg)	0.6	0.7	0.3	0.2	0.3
	Silver (Ag) (mg/kg)	<1	<1	<1	<1	<1
	Thallium (Tl) (mg/kg)	<1	<1	<1	<1	<1
	Tin (Sn) (mg/kg)	<5	<5	<5	<5	<5
	Uranium (U) (mg/kg)	<2	2	<2	<2	<2
	Vanadium (V) (mg/kg)	34	37	14	19	19
	Zinc (Zn) (mg/kg)	50	50	20	30	30
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)					
	Acenaphthylene (mg/kg)					
	Acridine (mg/kg)					
	Anthracene (mg/kg)					
	Benzo(a)anthracene (mg/kg)					
	Benzo(a)pyrene (mg/kg)					
	Benzo(b&j)fluoranthene (mg/kg)					
	Benzo(ghi)perylene (mg/kg)					

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID				
		Description				
		Sampled Date				
		Sampled Time				
		Client ID				
		L658105-19				
		SEDIMENT				
		17-JUL-08				
		16:10				
		ML-E-2B				
Grouping	Analyte					
SOIL						
Physical Tests	% Moisture (%)	63				
Particle Size	Texture	Sandy loam				
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)	0.21				
Cyanides	Cyanide, Total (mg/kg)	<0.5				
Organic / Inorganic Carbon	CaCO3 Equivalent (%)	0.7				
		0.8				
	Inorganic Carbon (%)	<0.09				
		<0.1				
	Total Carbon by Combustion (%)	1.9				
	Total Organic Carbon (%)	1.9				
Metals	Antimony (Sb) (mg/kg)	<0.2				
	Arsenic (As) (mg/kg)	6.5				
	Barium (Ba) (mg/kg)	52				
	Beryllium (Be) (mg/kg)	<1				
	Cadmium (Cd) (mg/kg)	<0.5				
	Chromium (Cr) (mg/kg)	21.6				
	Cobalt (Co) (mg/kg)	4				
	Copper (Cu) (mg/kg)	23				
	Lead (Pb) (mg/kg)	<5				
	Mercury (Hg) (mg/kg)	<0.05				
	Molybdenum (Mo) (mg/kg)	1				
	Nickel (Ni) (mg/kg)	18				
	Selenium (Se) (mg/kg)	0.4				
	Silver (Ag) (mg/kg)	<1				
	Thallium (Tl) (mg/kg)	<1				
	Tin (Sn) (mg/kg)	<5				
	Uranium (U) (mg/kg)	<2				
	Vanadium (V) (mg/kg)	22				
	Zinc (Zn) (mg/kg)	30				
Polycyclic Aromatic Hydrocarbons	Acenaphthene (mg/kg)					
	Acenaphthylene (mg/kg)					
	Acridine (mg/kg)					
	Anthracene (mg/kg)					
	Benzo(a)anthracene (mg/kg)					
	Benzo(a)pyrene (mg/kg)					
	Benzo(b&j)fluoranthene (mg/kg)					
	Benzo(ghi)perylene (mg/kg)					

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658105-4	L658105-5	L658105-6	L658105-7	L658105-8
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	16-JUL-08	16-JUL-08	16-JUL-08	16-JUL-08	16-JUL-08
		Sampled Time	08:00	08:00	13:00	13:00	14:40
		Client ID	BOOT-1-1A	BOOT-1-1B	BOOT-1-2A	BOOT-1-2B	BOOT-2-1A
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Benzo(k)fluoranthene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	
	Biphenyl (mg/kg)	<0.005	<0.005	<0.005	<0.005	0.005	
	C2 sub'd B(a)A/chrysene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C2 sub'd B(b&k)F/B(a)P (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C2 sub'd biphenyl (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C2 sub'd dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C2 sub'd fluoranthene/pyrene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C2 sub'd fluorene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C2 sub'd naphthalene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C2 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C3 sub'd dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C3 sub'd fluoranthene/pyrene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C3 sub'd fluorene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C3 sub'd naphthalene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C3 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C4 sub'd dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C4 sub'd naphthalene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	C4 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	Chrysene (mg/kg)	<0.005	<0.005	<0.005	<0.005	0.008	
	Dibenzo(a,h)anthracene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	
	Dibenzothiophene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	
	Fluoranthene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	
	Fluorene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	
	Indeno(c,d-123)pyrene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	
	Methyl acenaphthene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	Methyl B(a)A/chrysene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	Methyl B(b&k)F/B(a)P (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	Methyl biphenyl (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	Methyl dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	Methyl fluoranthene/pyrene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	Methyl fluorene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	Methyl phenanthrene/anthracene (mg/kg)	<0.02	<0.02	<0.02	<0.02	<0.02	
	Retene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	
	1-Methylnaphthalene (mg/kg)	<0.005	<0.005	<0.005	<0.005	0.005	
	Naphthalene (mg/kg)	0.005	0.005	0.005	<0.005	0.01	
	Phenanthrene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	
	Pyrene (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	
	Quinoline (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L658105-9 SEDIMENT 16-JUL-08 14:40 BOOT-2-1B	L658105-10 SEDIMENT 16-JUL-08 15:30 BOOT-2-2A	L658105-11 SEDIMENT 16-JUL-08 15:30 BOOT-2-2B	L658105-12 SEDIMENT 17-JUL-08 16:50 ML-A-1A	L658105-13 SEDIMENT 17-JUL-08 16:50 ML-A-1B
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Benzo(k)fluoranthene (mg/kg)	<0.005	<0.005	<0.005			
	Biphenyl (mg/kg)	0.005	<0.005	<0.005			
	C2 sub'd B(a)A/chrysene (mg/kg)	<0.02	<0.02	<0.02			
	C2 sub'd B(b&k)F/B(a)P (mg/kg)	<0.02	<0.02	<0.02			
	C2 sub'd biphenyl (mg/kg)	<0.02	<0.02	<0.02			
	C2 sub'd dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02			
	C2 sub'd fluoranthene/pyrene (mg/kg)	<0.02	<0.02	<0.02			
	C2 sub'd fluorene (mg/kg)	<0.02	<0.02	<0.02			
	C2 sub'd naphthalene (mg/kg)	<0.02	<0.02	<0.02			
	C2 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.02	<0.02			
	C3 sub'd dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02			
	C3 sub'd fluoranthene/pyrene (mg/kg)	<0.02	<0.02	<0.02			
	C3 sub'd fluorene (mg/kg)	<0.02	<0.02	<0.02			
	C3 sub'd naphthalene (mg/kg)	<0.02	<0.02	<0.02			
	C3 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.02	<0.02			
	C4 sub'd dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02			
	C4 sub'd naphthalene (mg/kg)	<0.02	<0.02	<0.02			
	C4 sub'd phenanthrene/anth. (mg/kg)	<0.02	<0.02	<0.02			
	Chrysene (mg/kg)	<0.005	0.01	0.007			
	Dibenzo(a,h)anthracene (mg/kg)	<0.005	<0.005	<0.005			
	Dibenzothiophene (mg/kg)	<0.005	<0.005	<0.005			
	Fluoranthene (mg/kg)	<0.005	<0.005	<0.005			
	Fluorene (mg/kg)	<0.005	<0.005	<0.005			
	Indeno(c,d-123)pyrene (mg/kg)	<0.005	<0.005	<0.005			
	Methyl acenaphthene (mg/kg)	<0.02	<0.02	<0.02			
	Methyl B(a)A/chrysene (mg/kg)	<0.02	<0.02	<0.02			
	Methyl B(b&k)F/B(a)P (mg/kg)	<0.02	<0.02	<0.02			
	Methyl biphenyl (mg/kg)	<0.02	<0.02	<0.02			
	Methyl dibenzothiophene (mg/kg)	<0.02	<0.02	<0.02			
	Methyl fluoranthene/pyrene (mg/kg)	<0.02	<0.02	<0.02			
	Methyl fluorene (mg/kg)	<0.02	<0.02	<0.02			
	Methyl phenanthrene/anthracene (mg/kg)	<0.02	<0.02	<0.02			
	Retene (mg/kg)	<0.005	<0.005	<0.005			
	1-Methylnaphthalene (mg/kg)	<0.005	<0.005	<0.005			
	Naphthalene (mg/kg)	0.01	0.02	0.02			
	Phenanthrene (mg/kg)	0.005	0.006	0.006			
	Pyrene (mg/kg)	<0.005	<0.005	<0.005			
	Quinoline (mg/kg)	<0.005	<0.005	<0.005			

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L658105-14 SEDIMENT 17-JUL-08 17:10 ML-A-2A	L658105-15 SEDIMENT 17-JUL-08 17:10 ML-A-2B	L658105-16 SEDIMENT 17-JUL-08 15:45 ML-E-1A	L658105-17 SEDIMENT 17-JUL-08 15:45 ML-E-1B	L658105-18 SEDIMENT 17-JUL-08 16:10 ML-E-2A
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Benzo(k)fluoranthene (mg/kg)						
	Biphenyl (mg/kg)						
	C2 sub'd B(a)A/chrysene (mg/kg)						
	C2 sub'd B(b&k)F/B(a)P (mg/kg)						
	C2 sub'd biphenyl (mg/kg)						
	C2 sub'd dibenzothiophene (mg/kg)						
	C2 sub'd fluoranthene/pyrene (mg/kg)						
	C2 sub'd fluorene (mg/kg)						
	C2 sub'd naphthalene (mg/kg)						
	C2 sub'd phenanthrene/anth. (mg/kg)						
	C3 sub'd dibenzothiophene (mg/kg)						
	C3 sub'd fluoranthene/pyrene (mg/kg)						
	C3 sub'd fluorene (mg/kg)						
	C3 sub'd naphthalene (mg/kg)						
	C3 sub'd phenanthrene/anth. (mg/kg)						
	C4 sub'd dibenzothiophene (mg/kg)						
	C4 sub'd naphthalene (mg/kg)						
	C4 sub'd phenanthrene/anth. (mg/kg)						
	Chrysene (mg/kg)						
	Dibenzo(a,h)anthracene (mg/kg)						
	Dibenzothiophene (mg/kg)						
	Fluoranthene (mg/kg)						
	Fluorene (mg/kg)						
	Indeno(c,d-123)pyrene (mg/kg)						
	Methyl acenaphthene (mg/kg)						
	Methyl B(a)A/chrysene (mg/kg)						
	Methyl B(b&k)F/B(a)P (mg/kg)						
	Methyl biphenyl (mg/kg)						
	Methyl dibenzothiophene (mg/kg)						
	Methyl fluoranthene/pyrene (mg/kg)						
	Methyl fluorene (mg/kg)						
	Methyl phenanthrene/anthracene (mg/kg)						
	Retene (mg/kg)						
	1-Methylnaphthalene (mg/kg)						
	Naphthalene (mg/kg)						
	Phenanthrene (mg/kg)						
	Pyrene (mg/kg)						
	Quinoline (mg/kg)						

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID				
		Description				
		Sampled Date				
		Sampled Time				
		Client ID				
Grouping	Analyte					
SOIL						
Polycyclic Aromatic Hydrocarbons	Benzo(k)fluoranthene (mg/kg)					
	Biphenyl (mg/kg)					
	C2 sub'd B(a)A/chrysene (mg/kg)					
	C2 sub'd B(b&k)F/B(a)P (mg/kg)					
	C2 sub'd biphenyl (mg/kg)					
	C2 sub'd dibenzothiophene (mg/kg)					
	C2 sub'd fluoranthene/pyrene (mg/kg)					
	C2 sub'd fluorene (mg/kg)					
	C2 sub'd naphthalene (mg/kg)					
	C2 sub'd phenanthrene/anth. (mg/kg)					
	C3 sub'd dibenzothiophene (mg/kg)					
	C3 sub'd fluoranthene/pyrene (mg/kg)					
	C3 sub'd fluorene (mg/kg)					
	C3 sub'd naphthalene (mg/kg)					
	C3 sub'd phenanthrene/anth. (mg/kg)					
	C4 sub'd dibenzothiophene (mg/kg)					
	C4 sub'd naphthalene (mg/kg)					
	C4 sub'd phenanthrene/anth. (mg/kg)					
	Chrysene (mg/kg)					
	Dibenzo(a,h)anthracene (mg/kg)					
	Dibenzothiophene (mg/kg)					
	Fluoranthene (mg/kg)					
	Fluorene (mg/kg)					
	Indeno(c,d-123)pyrene (mg/kg)					
	Methyl acenaphthene (mg/kg)					
	Methyl B(a)A/chrysene (mg/kg)					
	Methyl B(b&k)F/B(a)P (mg/kg)					
	Methyl biphenyl (mg/kg)					
	Methyl dibenzothiophene (mg/kg)					
	Methyl fluoranthene/pyrene (mg/kg)					
	Methyl fluorene (mg/kg)					
	Methyl phenanthrene/anthracene (mg/kg)					
	Retene (mg/kg)					
	1-Methylnaphthalene (mg/kg)					
	Naphthalene (mg/kg)					
	Phenanthrene (mg/kg)					
	Pyrene (mg/kg)					
	Quinoline (mg/kg)					

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658105-4	L658105-5	L658105-6	L658105-7	L658105-8
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	16-JUL-08	16-JUL-08	16-JUL-08	16-JUL-08	16-JUL-08
		Sampled Time	08:00	08:00	13:00	13:00	14:40
		Client ID	BOOT-1-1A	BOOT-1-1B	BOOT-1-2A	BOOT-1-2B	BOOT-2-1A
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Surrogate: 2-Fluorobiphenyl (%)	70	71	72	67	88	
	Surrogate: Nitrobenzene d5 (%)	45	49	54	45	53	
	Surrogate: p-Terphenyl d14 (%)	105	99	101	96	129	
Particle Size	% Sand (2.0mm - 0.05mm) (%)	79	78	80	82	56	
	% Silt (0.05mm - 2um) (%)	19	20	18	17	39	
	% Clay (<2um) (%)	2	2	2	2	5	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658105-9	L658105-10	L658105-11	L658105-12	L658105-13
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	16-JUL-08	16-JUL-08	16-JUL-08	17-JUL-08	17-JUL-08
		Sampled Time	14:40	15:30	15:30	16:50	16:50
		Client ID	BOOT-2-1B	BOOT-2-2A	BOOT-2-2B	ML-A-1A	ML-A-1B
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Surrogate: 2-Fluorobiphenyl (%)	68	70	56			
	Surrogate: Nitrobenzene d5 (%)	43	43	31			
	Surrogate: p-Terphenyl d14 (%)	101	94	90			
Particle Size	% Sand (2.0mm - 0.05mm) (%)	52	56	58	54	47	
	% Silt (0.05mm - 2um) (%)	42	37	37	43	50	
	% Clay (<2um) (%)	6	7	5	3	3	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658105-14	L658105-15	L658105-16	L658105-17	L658105-18
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	17-JUL-08	17-JUL-08	17-JUL-08	17-JUL-08	17-JUL-08
		Sampled Time	17:10	17:10	15:45	15:45	16:10
		Client ID	ML-A-2A	ML-A-2B	ML-E-1A	ML-E-1B	ML-E-2A
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Surrogate: 2-Fluorobiphenyl (%)						
	Surrogate: Nitrobenzene d5 (%)						
	Surrogate: p-Terphenyl d14 (%)						
Particle Size	% Sand (2.0mm - 0.05mm) (%)	53	45	70	67	74	
	% Silt (0.05mm - 2um) (%)	44	50	27	30	23	
	% Clay (<2um) (%)	3	6	3	3	4	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L658105-19 SEDIMENT 17-JUL-08 16:10 ML-E-2B				
Grouping	Analyte						
SOIL							
Polycyclic Aromatic Hydrocarbons	Surrogate: 2-Fluorobiphenyl (%)						
	Surrogate: Nitrobenzene d5 (%)						
	Surrogate: p-Terphenyl d14 (%)						
Particle Size	% Sand (2.0mm - 0.05mm) (%)	74					
	% Silt (0.05mm - 2um) (%)	17					
	% Clay (<2um) (%)	9					

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L658105-1 FRESHWATER 16-JUL-08 10:30 BOOT-2	L658105-2 FRESHWATER 17-JUL-08 08:15 ML-E	L658105-3 FRESHWATER 17-JUL-08 13:00 Z8-7		
Grouping	Analyte						
WATER							
Physical Tests	Total Suspended Solids (mg/L)	<3	<3	<3			
	Total Dissolved Solids (mg/L)	38	37	<5			
Anions and Nutrients	Alkalinity, Total (as CaCO ₃) (mg/L)	12	13	<5			
	Ammonia-N (mg/L)	<0.05	<0.05	<0.05			
	Bicarbonate (HCO ₃) (mg/L)	14	15	<5			
	Carbonate (CO ₃) (mg/L)	<5	<5	<5			
	Chloride (Cl) (mg/L)	6	6	<1			
	Conductivity (EC) (uS/cm)	56.6	56.9	0.2			
	Hardness (as CaCO ₃) (mg/L)	17	18	<1			
	Hydroxide (OH) (mg/L)	<5	<5	<5			
	Ion Balance (%)	Low EC	Low EC	Low TDS			
	Nitrate+Nitrite-N (mg/L)	<0.1	<0.1	<0.1			
	Nitrate-N (mg/L)	<0.1	<0.1	<0.1			
	Nitrite-N (mg/L)	<0.05	<0.05	<0.05			
	Total Kjeldahl Nitrogen (mg/L)	<0.2	<0.2	<0.2			
	pH (pH)	7.4	7.4	5.6			
	Orthophosphate (PO ₄ -P) (mg/L)	<0.001	<0.001	<0.001			
	Phosphorus, Total (mg/L)	0.004	0.004	0.001			
	Phosphorus, Total Dissolved (mg/L)	0.002	0.002	0.001			
	TDS (Calculated) (mg/L)	27	28	<1			
Cyanides	Cyanide, Total (mg/L)	<0.002	<0.002	<0.002			
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	3.2	3.3	0.7 *			
	Total Carbon (mg/L)	5 *	5 *	<1 *			
	Total Inorganic Carbon (mg/L)	3 *	3 *	<1 *			
	Total Organic Carbon (mg/L)	3	3 *	<1 *			
Metals	Calcium (Ca) (mg/L)	5.2	5.5	<0.5			
	Magnesium (Mg) (mg/L)	1.0	1.0	<0.1			
	Potassium (K) (mg/L)	0.6	0.6	<0.5			
	Sodium (Na) (mg/L)	4	4	<1			
	Sulfate (SO ₄) (mg/L)	2.8	2.9	<0.5			
Total Metals	Aluminum (Al) (mg/L)	0.0028	0.0022	<0.0003			
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	<0.00003			
	Arsenic (As) (mg/L)	0.00026	0.00025	<0.00003			
	Barium (Ba) (mg/L)	0.00594	0.00602	<0.00005			
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002			
	Boron (B) (mg/L)	0.003	0.003	<0.001			
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005			
	Calcium (Ca) (mg/L)	4.88	4.98	<0.02			

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L658105-1 FRESHWATER 16-JUL-08 10:30 BOOT-2	L658105-2 FRESHWATER 17-JUL-08 08:15 ML-E	L658105-3 FRESHWATER 17-JUL-08 13:00 Z8-7		
Grouping	Analyte						
WATER							
Total Metals	Chromium (Cr) (mg/L)	<0.00006	<0.00006	<0.00006			
	Cobalt (Co) (mg/L)	<0.0001	<0.0001	<0.0001			
	Copper (Cu) (mg/L)	0.0007 *	0.0010	<0.0006			
	Iron (Fe) (mg/L)	0.017	0.014	<0.005			
	Lead (Pb) (mg/L)	0.00005	<0.00005	<0.00005			
	Magnesium (Mg) (mg/L)	0.782	0.804	<0.004			
	Manganese (Mn) (mg/L)	0.0021	0.0021	<0.0001			
	Mercury (Hg)-Total (mg/L)	<0.00002	<0.00002	<0.00002			
	Molybdenum (Mo) (mg/L)	<0.00006	<0.00006	<0.00006			
	Nickel (Ni) (mg/L)	0.00053	0.00054	<0.00006			
	Potassium (K) (mg/L)	0.65	0.66	<0.02			
	Selenium (Se) (mg/L)	<0.0001	<0.0001	<0.0001			
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001			
	Sodium (Na) (mg/L)	3.07	3.14	<0.005			
	Strontium (Sr) (mg/L)	0.0243	0.0246	<0.0001			
	Thallium (Tl)-Total (mg/L)	<0.00003	<0.00003	<0.00003			
	Uranium (U) (mg/L)	<0.00005	<0.00005	<0.00005			
	Vanadium (V) (mg/L)	0.00009	0.00010	<0.00005			
	Zinc (Zn) (mg/L)	<0.0008 *	<0.0008	<0.0008			
Dissolved Metals	Aluminum (Al) (mg/L)	0.0021	0.0018	<0.0003			
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	<0.00003			
	Arsenic (As) (mg/L)	0.00026	0.00025	<0.00003			
	Barium (Ba) (mg/L)	0.00611	0.00615	<0.00005			
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002			
	Boron (B) (mg/L)	0.004	0.003	<0.001			
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005			
	Calcium (Ca) (mg/L)	5.01	4.98	<0.02			
	Chromium (Cr) (mg/L)	0.00008	<0.00006	<0.00006			
	Cobalt (Co) (mg/L)	<0.0001	<0.0001	<0.0001			
	Copper (Cu) (mg/L)	0.0023 *	0.0009	<0.0006			
	Iron (Fe) (mg/L)	0.008	0.007	<0.005			
	Lead (Pb) (mg/L)	0.00049	0.00009	<0.00005			
	Magnesium (Mg) (mg/L)	0.817	0.805	<0.004			
	Manganese (Mn) (mg/L)	0.0018	0.0014	<0.0001			
	Mercury (Hg)-Dissolved (mg/L)	<0.00002	<0.00002	<0.00002			
	Molybdenum (Mo) (mg/L)	0.00007	0.00006	<0.00006			
	Nickel (Ni) (mg/L)	0.00079	0.00054	<0.00006			
	Potassium (K) (mg/L)	0.75	0.67	<0.02			
	Selenium (Se) (mg/L)	<0.0001	<0.0001	<0.0001			

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658105-1	L658105-2	L658105-3		
		Description	FRESHWATER	FRESHWATER	FRESHWATER		
		Sampled Date	16-JUL-08	17-JUL-08	17-JUL-08		
		Sampled Time	10:30	08:15	13:00		
		Client ID	BOOT-2	ML-E	Z8-7		
Grouping	Analyte						
WATER							
Dissolved Metals	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001			
	Sodium (Na) (mg/L)	3.34	3.19	<0.005			
	Strontium (Sr) (mg/L)	0.0251	0.0249	<0.0001			
	Thallium (Tl)-Dissolved (mg/L)	<0.00003	<0.00003	<0.00003			
	Uranium (U) (mg/L)	<0.00005	<0.00005	<0.00005			
	Vanadium (V) (mg/L)	<0.00005	0.00009	<0.00005			
	Zinc (Zn) (mg/L)	0.0117 *	0.0015	<0.0008			
Aggregate Organics	Oil & Grease-(IR) (mg/L)	<0.5		<0.5			
	Phenols (4AAP) (mg/L)	0.002		<0.001			
Volatile Organic Compounds	Benzene (mg/L)	<0.00050		<0.00050			
	EthylBenzene (mg/L)	<0.00050		<0.00050			
	Toluene (mg/L)	<0.00050		<0.00050			
	Xylenes (mg/L)	<0.00050		<0.00050			
	F1(C6-C10) (mg/L)	<0.1		<0.1			
	F1-BTEX (mg/L)	<0.1		<0.1			
Hydrocarbons	F2 (>C10-C16) (mg/L)	<0.05		<0.05			
	F3 (C16-C34) (mg/L)	<0.05		<0.05			
	F4 (C34-C50) (mg/L)	<0.05		<0.05			
Plant Pigments	Chlorophyll a (ug/L)	<1	<1	<1			

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

Reference Information

Additional Comments for Sample Listed:

Sample Number	Matrix	Report Remarks	Sample Comment:
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Qualifiers for Individual Parameters Listed:

Qualifier	Description
ISCR:ST	Improper Sample Container Received: Subsamples Taken
RCR	Result Confirmed After Data Review
RRV	Reported Result Verified By Repeat Analysis

Samples with Qualifiers for Individual Parameters as listed above:

Sample Number	Client Sample ID	Parameters	Qualifier
L658105-1	BOOT-2	Total Carbon	ISCR:ST
L658105-1	BOOT-2	Total Inorganic Carbon	
L658105-2	ML-E	Copper (Cu)	RRV
L658105-2	ML-E	Zinc (Zn)	
L658105-2	ML-E	Total Carbon	ISCR:ST
L658105-2	ML-E	Total Inorganic Carbon	
L658105-3	Z8-7	Total Organic Carbon	RCR
L658105-3	Z8-7	Total Carbon	ISCR:ST
L658105-3	Z8-7	Total Inorganic Carbon	
L658105-3	Z8-7	Dissolved Organic Carbon	RRV
L658105-3	Z8-7	Total Organic Carbon	

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
BTX,F1-CL	Water	BTEX and F1 (C6-C10)	EPA 5030/8015& 8260-P&T GC-MS/FID
C-DIS-ORG-LOW-ED	Water	Dissolved Organic Carbon	APHA 5310 B-Instrumental
C-INORG-ORG-SK	Soil	Inorganic and Organic Carbon	SSSA (1996) P455-456

When carbonates are decomposed with acid in an open system, carbon dioxide is released to the atmosphere. The decrease in sample weight resulting from CO2 loss is proportional to the carbonate content of the soil.

Reference:

Loeppert, R.H. and Suarez, D.L. 1996. Gravimetric Method for Loss of Carbon Dioxide. P. 455-456 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

C-INORG-SK	Soil	Inorganic Carbon / Calcium Carbonate	SSSA (1996) P455-456
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When carbonates are decomposed with acid in an open system, carbon dioxide is released to the atmosphere. The decrease in sample weight resulting from CO2 loss is proportional to the carbonate content of the soil.

Reference:

Loeppert, R.H. and Suarez, D.L. 1996. Gravimetric Method for Loss of Carbon Dioxide. P. 455-456 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

C-TOT-ED	Water	Total Carbon	APHA 5310 B-Instrumental
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C-TOT-INORG-ED	Water	Total Inorganic Carbon	APHA 5310 B-Instrumental
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C-TOT-LECO-SK	Soil	Total Carbon by combustion method	SSSA (1996) - Combustion Instrument
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The sample is introduced into a quartz tube where it undergoes combustion at 900 °C in the presence of oxygen. Combustion gases are first carried through a catalyst bed in the bottom of the combustion tube, where oxidation is completed and then carried through a reducing agent (copper), where the nitrogen oxides are reduced to elemental nitrogen. This mixture of N2, CO2, and H2O is then passed through an absorber column containing magnesium perchlorate to remove water. N2 and CO2 gases are then separated in a gas chromatographic column and detected by thermal conductivity.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
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Reference:

Nelson, D.W. and Sommers, L.E. 1996. Total Carbon, organic carbon and organic matter. P. 961-1010 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

C-TOT-ORG-ED	Water	Total Organic Carbon	APHA 5310 B-Instrumental
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C-TOT-ORG-LECO-SK	Soil	Organic Carbon by combustion method	SSSA (1996) p. 973
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Total Organic Carbon (C-TOT-ORG-LECO-SK, C-TOT-ORG-SK)

Total C and inorganic C are determined on separate samples. The total C is determined by combustion and thermal conductivity detection, while inorganic C is determined by weight loss after addition of hydrochloric acid. Organic C is calculated by the difference between these two determinations.

Reference for Total C:

Nelson, D.W. and Sommers, L.E. 1996. Total Carbon, organic carbon and organic matter. P. 961-1010 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

Reference for Inorganic C:

Loeppert, R.H. and Suarez, D.L. 1996. Gravimetric Method for Loss of Carbon Dioxide. P. 455-456 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

CHLOROPHYLL A-FM	Water	Chlorophyll-a	APHA 10200H, 1998
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CL-ED	Water	Chloride (Cl)	APHA 4500 Cl E-Colorimetry
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CN-TOT-WP	Water	Cyanide, Total	APHA 4500 CN-O
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Total Cyanide in Water: Simple cyanides are converted to hydrogen cyanide (HCN) by distillation. Complex cyanides are not easily decomposed. Low power UV radiation is used to break down organic, metallic and alkali complexed compounds to free cyanide. The distillation step isolates HCN from simple cyanides under specific acidic conditions. The liberated HCN is converted to cyanogen chloride with chloramine-T. This further reacts with barbituric acid and isonicotinic acid to form a highly coloured complex.

CN-TOT-WP	Soil	Cyanide, Total	EPA 9013A
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Total Cyanides in Soil, Vegetation and Tissue: The sample is extracted with a strong base for 16 hours, then filtered. The filtrate is then analyzed for total cyanide as follows: Simple cyanides are converted to hydrogen cyanide (HCN) by distillation. Complex cyanides are not easily decomposed. Low power UV radiation is used to break down organic, metallic and alkali complexed compounds to free cyanide. The distillation step isolates HCN from simple cyanides under specific acidic conditions. The liberated HCN is converted to cyanogen chloride with chloramine-T. This further reacts with barbituric acid and isonicotinic acid to form a highly coloured complex.

ETL-ROUTINE-ICP-ED	Water	ICP metals and SO4 for routine water	APHA 3120 B-ICP-OES
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F2,F3,F4-CL	Water	F2, F3, F4	EPA 3510/8000-GC-FID
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HG-ULT-CV-ED	Water	Mercury (Hg)	EPA 245.7 / EPA 245.1
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HG-ULT-DIS-CV-ED	Water	Mercury (Hg) - Dissolved	EPA 245.7 / EPA 245.1
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IONBALANCE-ED	Water	Ion Balance Calculation	APHA 1030E
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MET1-ULTRA-DIS-ED	Water	Ultra-Low Metals - Dissolved	EPA 6020
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MET1-ULTRA-ED	Water	Ultra-Low Metals	EPA 6020
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MET2-ULTRA-DIS-ED	Water	Major Metals - Dissolved	EPA 200.7
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MET2-ULTRA-ED	Water	Major Metals	EPA 200.7
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METAL-CCME-ED	Soil	Metals in Soil - CCME List	EPA 6020
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Total Nitrogen by combustion method SSSA (1996) p. 973-974

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
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N-TOT-LECO-SK

Soil

The sample is introduced into a quartz tube where it undergoes combustion at 900 °C in the presence of oxygen.

Combustion gases are first carried through a catalyst bed in the bottom of the combustion tube, where oxidation is completed and then carried through a reducing agent (copper), where the nitrogen oxides are reduced to elemental nitrogen.

This mixture of N₂, CO₂, and H₂O is then passed through an absorber column containing magnesium perchlorate to remove water. N₂ and CO₂ gases are then separated in a gas chromatographic column and detected by thermal conductivity.

Reference: Bremner, J.M. 1996. Nitrogen - Total (Dumas Methods). P. 1088 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

N-TOTKJ-ED	Water	Total Kjeldahl Nitrogen	APHA 4500N-C -Dig.-Auto-Colorimetry
N2N3-ED	Water	Nitrate+Nitrite-N	APHA 4500 NO3-H - COLORIMETRY
NH4-ED	Water	Ammonia-N	APHA4500NH3F Colorimetry
NO2-ED	Water	Nitrite-N	APHA 4500 NO2B-Colorimetry
NO3-ED	Water	Nitrate-N	APHA 4500 NO3H-Colorimetry
OGG-IR-ED	Water	Oil & Grease-(IR)	APHA 5520 C-Liq-Liq Extraction Infrared
P-TOTAL-LOW-ED	Water	Phosphorus, Total	APHA 4500 P B,E-Auto-Colorimetry
P-TOTALDIS-LOW-ED	Water	Phosphorus, Dissolved	APHA 4500 P B,E - AUTO-COLORIMETRY
PAH-ALK-ED	Soil	PAHs & Alkylated PAHs	EPA 3540/8270-GC/MS

NOTE: The following PAH parameter results are determined via a semi-quantitative method. To be used for research purposes only.

C1 B(a)A/chrysene
 C1B(b&k)F/B(a)P
 C1 acenaphthene
 C1 biphenyl
 C1dibenzothiophene
 C1 fluoranthene/pyrene
 C1 fluorene
 C1 naphthalene
 C1 phenanthrene/anthracene
 C2 B(a)A/chrysene
 C2 b(b&k)F/b(a)P
 C2 biphenyl
 C2 dibenzothiophene
 C2 fluoranthene/pyrene
 C2 fluorene
 C2 naphthalene
 C2 phenanthrene/anth.
 C3 dibenzothiophene
 C3 fluorene
 C3 naphthalene
 C3 phenanthrene/anth.
 C4 dibenzothiophene
 C4 naphthalene
 C4 phenanthrene/anth.

Note: Results based on dry weight.

PH/EC/ALK-ED	Water	pH, Conductivity and Total Alkalinity	APHA 4500-H, 2510, 2320
PHENOLS-4AAP-ED	Water	Phenols (4AAP)	AB ENV.06537-COLORIMETRIC
PO4-LOW-ED	Water	Orthophosphate (PO4-P)	APHA 4500 P B,E-Auto-Colorimetry

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
PREP-MOISTURE-ED	Soil	% Moisture	Oven dry 105C-Gravimetric

PSA-1-SK Soil Particle Size Analysis: Hydrometer CSSS (1993) P.508-509

The hydrometer method is based on Stokes' Law which relates the radius of soil particles to the velocity of their sedimentation. Air-dried soil is wetted with a dispersing agent and then mixed with water in a sedimentation cylinder. The soil is allowed to settle and particle density readings(g/L) are taken after 40 seconds and 6 hours. These readings correspond to silt + clay and clay content respectively. Sand content is calculated by difference.

Reference:

Carter, M.R., 1993. Soil sampling and methods of analysis. Can. Soc. Soil Sci. Ottawa Ont. 508-509

Kalra, Y.P., Maynard, D.G. 1991. Methods manual for forest soil and plant analysis. Forestry Canada. p. 42-45.

SOLIDS-TDS-ED	Water	Total Dissolved Solids	APHA 2540 C
SOLIDS-TOTSUS-ED	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
TL-ULTRA-DIS-ED	Water	Thallium (Tl)-Dissolved	EPA 6020
TL-ULTRA-ED	Water	Thallium (Tl)	EPA 6020

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies. The last two letters of the above ALS Test Code column indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
CL	ALS LABORATORY GROUP - CALGARY, ALBERTA, CANADA	ED	ALS LABORATORY GROUP - EDMONTON, ALBERTA, CANADA

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)	
FM		ALS LABORATORY GROUP - FORT MCMURRAY, ALBERTA, CANADA	SK	ALS LABORATORY GROUP - SASKATOON, SASKATCHEWAN, CANADA

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
WP		ALS LABORATORY GROUP - WINNIPEG, MANITOBA, CANADA	

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

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.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.

**Environmental Division**

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 1 of 20

Client: GOLDER ASSOCIATES LTD
195 PEMBERTON AVE
NORTH VANCOUVER BC V7P 2R4

Contact: KERRIE SERBEN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX,F1-CL		Water						
Batch	R699642							
WG807129-4	LCS							
Benzene			97		%		81-120	24-JUL-08
Toluene			95		%		82-119	24-JUL-08
EthylBenzene			86		%		82-120	24-JUL-08
Xylenes			91		%		81-124	24-JUL-08
F1(C6-C10)			89		%		80-119	24-JUL-08
WG807129-1	MB							
Benzene			<0.00050		mg/L		0.0005	24-JUL-08
Toluene			<0.00050		mg/L		0.0005	24-JUL-08
EthylBenzene			<0.00050		mg/L		0.0005	24-JUL-08
Xylenes			<0.00050		mg/L		0.0005	24-JUL-08
F1(C6-C10)			<0.1		mg/L		0.1	24-JUL-08
C-DIS-ORG-LOW-ED		Water						
Batch	R696995							
WG804130-1	LCS							
Dissolved Organic Carbon			93		%		88-108	21-JUL-08
WG804130-4	LCS							
Dissolved Organic Carbon			112		%		63-138	21-JUL-08
WG804130-2	MB							
Dissolved Organic Carbon			<0.5		mg/L		0.5	21-JUL-08
C-TOT-ED		Water						
Batch	R698304							
WG805409-3	DUP	L658105-3						
Total Carbon		<1	<1	ISCR:ST	mg/L	N/A	16	22-JUL-08
WG805409-2	LCS							
Total Carbon			102		%		90-109	22-JUL-08
WG805409-1	MB							
Total Carbon			<1		mg/L		1	22-JUL-08
WG805409-4	MS	L658105-3						
Total Carbon			105		%		71-123	22-JUL-08
WG805409-6	MS	L658705-8						
Total Carbon			109		%		71-123	23-JUL-08
WG805409-8	MS	L660317-11						
Total Carbon			N/A	MS-B	%		-	25-JUL-08
C-TOT-INORG-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 2 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-TOT-INORG-ED								
Water								
Batch	R695898							
WG802869-5	DUP	L658105-3						
Total Inorganic Carbon		<1	<1	RPD-NA	mg/L	N/A	6.5	23-JUL-08
WG802869-2	LCS							
Total Inorganic Carbon			101		%		87-118	21-JUL-08
WG802869-1	MB							
Total Inorganic Carbon			<1		mg/L		1	18-JUL-08
WG802869-6	MS	L658105-3						
Total Inorganic Carbon			110		%		83-122	23-JUL-08
C-TOT-ORG-ED								
Water								
Batch	R696995							
WG804130-18	DUP	L658105-3						
Total Organic Carbon		<1	<1	RPD-NA	mg/L	N/A	10	24-JUL-08
WG804130-1	LCS							
Total Organic Carbon			93		%		88-108	21-JUL-08
WG804130-4	LCS							
Total Organic Carbon			112		%		94-135	21-JUL-08
WG804130-2	MB							
Total Organic Carbon			<1		mg/L		1	21-JUL-08
WG804130-3	MB							
Total Organic Carbon			<1		mg/L		1	21-JUL-08
WG804130-11	MS	L654945-5						
Total Organic Carbon			102		%		77-116	22-JUL-08
WG804130-13	MS	L657417-1						
Total Organic Carbon			95		%		77-116	22-JUL-08
WG804130-15	MS	L657452-4						
Total Organic Carbon			105		%		77-116	23-JUL-08
WG804130-17	MS	L658040-1						
Total Organic Carbon			97		%		77-116	23-JUL-08
WG804130-19	MS	L658105-3						
Total Organic Carbon			103		%		77-116	24-JUL-08
WG804130-21	MS	L656178-6						
Total Organic Carbon			104		%		77-116	24-JUL-08
WG804130-25	MS	L658154-6						
Total Organic Carbon			94		%		77-116	25-JUL-08
WG804130-27	MS	L661085-1						
Total Organic Carbon			99		%		77-116	26-JUL-08
WG804130-29	MS	L655460-6						
Total Organic Carbon			106		%		77-116	25-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 3 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-TOT-ORG-ED		Water						
Batch	R696995							
WG804130-31	MS	L658705-8	101		%		77-116	27-JUL-08
Total Organic Carbon								
WG804130-33	MS	L658808-13	101		%		77-116	27-JUL-08
Total Organic Carbon								
WG804130-7	MS	L656683-22	106		%		77-116	21-JUL-08
Total Organic Carbon								
WG804130-9	MS	L656927-1	102		%		77-116	22-JUL-08
Total Organic Carbon								
CHLOROPHYLL A-FM		Water						
Batch	R698983							
WG805570-2	DUP	L658105-3	<1	RPD-NA	ug/L	N/A	33	24-JUL-08
Chlorophyll a								
WG805570-3	LCS		125		%		63-138	24-JUL-08
Chlorophyll a								
WG805570-1	MB		<1		ug/L		1	24-JUL-08
Chlorophyll a								
Batch	R698989							
WG805575-2	LCS		125		%		63-138	24-JUL-08
Chlorophyll a								
WG805575-1	MB		<1		ug/L		1	24-JUL-08
Chlorophyll a								
CL-ED		Water						
Batch	R697620							
WG804584-2	LCS		102		%		94-109	22-JUL-08
Chloride (Cl)								
WG804584-3	LCS		100		%		93-113	22-JUL-08
Chloride (Cl)								
WG804584-1	MB		<1		mg/L		1	22-JUL-08
Chloride (Cl)								
WG804584-11	MS	L658319-2	114		%		87-117	22-JUL-08
Chloride (Cl)								
WG804584-5	MS	L658111-5	87		%		87-117	22-JUL-08
Chloride (Cl)								
WG804584-7	MS	L658291-8	102		%		87-117	22-JUL-08
Chloride (Cl)								
WG804584-9	MS	L658291-24	N/A	MS-B	%		-	22-JUL-08
Chloride (Cl)								
Water								

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 4 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-TOT-WP		Water						
Batch	R700696							
WG808481-3	CCV							
Cyanide, Total			106		%		90-110	28-JUL-08
WG808481-2	CVS							
Cyanide, Total			107		%		80-120	28-JUL-08
WG808481-5	IRM	61-CN	100.36		%		75-125	28-JUL-08
Cyanide, Total								
WG808481-1	MB							
Cyanide, Total			<0.002		mg/L		0.002	28-JUL-08
ETL-ROUTINE-ICP-ED		Water						
Batch	R697699							
WG804752-3	CRM	ION-915_WATER						
Calcium (Ca)			105		%		96-116	22-JUL-08
Magnesium (Mg)			109		%		91-113	22-JUL-08
Sulfate (SO4)			103		%		87-118	22-JUL-08
WG804752-2	LCS							
Calcium (Ca)			97		%		86-106	22-JUL-08
Potassium (K)			94		%		86-106	22-JUL-08
Magnesium (Mg)			103		%		88-108	22-JUL-08
Sodium (Na)			97		%		86-106	22-JUL-08
WG804752-1	MB							
Calcium (Ca)			<0.5		mg/L		2.5	22-JUL-08
Potassium (K)			<0.5		mg/L		2.5	22-JUL-08
Magnesium (Mg)			<0.1		mg/L		0.5	22-JUL-08
Sodium (Na)			<1		mg/L		5	22-JUL-08
Sulfate (SO4)			<0.5		mg/L		2.5	22-JUL-08
WG804752-5	MS	L658365-2						
Calcium (Ca)			106		%		88-116	22-JUL-08
Potassium (K)			100		%		83-115	22-JUL-08
Magnesium (Mg)			110		%		91-117	22-JUL-08
Sodium (Na)			103		%		81-116	22-JUL-08
Sulfate (SO4)			101		%		82-111	22-JUL-08
WG804752-7	MS	L658275-3						
Calcium (Ca)			107		%		88-116	22-JUL-08
Potassium (K)			102		%		83-115	22-JUL-08
Magnesium (Mg)			112		%		91-117	22-JUL-08
Sodium (Na)			112		%		81-116	22-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 5 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ETL-ROUTINE-ICP-ED		Water						
Batch	R697699							
WG804752-7	MS	L658275-3						
Sulfate (SO4)			99		%		82-111	22-JUL-08
WG804752-9	MS	L658291-12						
Calcium (Ca)			108		%		88-116	22-JUL-08
Potassium (K)			101		%		83-115	22-JUL-08
Magnesium (Mg)			112		%		91-117	22-JUL-08
Sodium (Na)			105		%		81-116	22-JUL-08
Sulfate (SO4)			100		%		82-111	22-JUL-08
F2,F3,F4-CL		Water						
Batch	R699219							
WG806917-2	MB							
F2 (>C10-C16)			<0.05		mg/L		0.05	24-JUL-08
F3 (C16-C34)			<0.05		mg/L		0.05	24-JUL-08
F4 (C34-C50)			<0.05		mg/L		0.05	24-JUL-08
WG806917-3	MS	WG806917-2						
F2 (>C10-C16)			81		%		61-140	24-JUL-08
F3 (C16-C34)			81		%		51-125	24-JUL-08
F4 (C34-C50)			81		%		51-125	24-JUL-08
WG806917-4	MSD	WG806917-3						
F2 (>C10-C16)		81	82		%	1.8	33	24-JUL-08
F3 (C16-C34)		81	82		%	1.8	33	24-JUL-08
F4 (C34-C50)		81	82		%	1.8	33	24-JUL-08
HG-ULT-CV-ED		Water						
Batch	R703090							
WG810870-2	LCS							
Mercury (Hg)-Total			88		%		63-135	01-AUG-08
WG810870-3	LCSD	WG810870-2						
Mercury (Hg)-Total		88	95		%	7.3	20	01-AUG-08
WG810870-1	MB							
Mercury (Hg)-Total			<0.00002		mg/L		0.00002	01-AUG-08
WG810870-9	MS	L657980-2						
Mercury (Hg)-Total			97		%		71-131	01-AUG-08
HG-ULT-DIS-CV-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 6 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-ULT-DIS-CV-ED		Water						
Batch	R703090							
WG810870-2	LCS							
Mercury (Hg)-Dissolved			88		%		63-135	01-AUG-08
WG810870-3	LCSD	WG810870-2						
Mercury (Hg)-Dissolved		88	95		%	7.3	20	01-AUG-08
WG810870-1	MB							
Mercury (Hg)-Dissolved			<0.00002		mg/L		0.00002	01-AUG-08
MET1-ULTRA-DIS-ED		Water						
Batch	R701819							
WG808814-2	CRM	1643E_WATER						
Aluminum (Al)			106		%		85-125	30-JUL-08
Arsenic (As)			96		%		88-109	30-JUL-08
Boron (B)			95		%		80-116	30-JUL-08
Barium (Ba)			93		%		88-109	30-JUL-08
Beryllium (Be)			95		%		74-116	30-JUL-08
Calcium (Ca)			91		%		82-106	30-JUL-08
Cadmium (Cd)			102		%		93-112	30-JUL-08
Cobalt (Co)			100		%		90-110	30-JUL-08
Chromium (Cr)			97		%		83-118	30-JUL-08
Copper (Cu)			98		%		89-112	30-JUL-08
Potassium (K)			92		%		88-120	30-JUL-08
Magnesium (Mg)			90		%		86-109	30-JUL-08
Manganese (Mn)			97		%		81-120	30-JUL-08
Molybdenum (Mo)			98		%		91-112	30-JUL-08
Sodium (Na)			92		%		86-105	30-JUL-08
Nickel (Ni)			99		%		88-110	30-JUL-08
Lead (Pb)			102		%		89-114	30-JUL-08
Antimony (Sb)			96		%		89-112	30-JUL-08
Selenium (Se)			96		%		76-112	30-JUL-08
Strontium (Sr)			100		%		87-109	30-JUL-08
Vanadium (V)			95		%		89-112	30-JUL-08
Zinc (Zn)			99		%		84-129	30-JUL-08
WG808814-1	MB							
Silver (Ag)			<0.0001		mg/L		0.0005	30-JUL-08
Aluminum (Al)			<0.0003		mg/L		0.0015	30-JUL-08
Arsenic (As)			<0.00003		mg/L		0.00015	30-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 7 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-DIS-ED		Water						
Batch	R701819							
WG808814-1	MB							
Boron (B)			<0.001		mg/L		0.005	30-JUL-08
Barium (Ba)			<0.00005		mg/L		0.00025	30-JUL-08
Beryllium (Be)			<0.0002		mg/L		0.0002	30-JUL-08
Calcium (Ca)			<0.02		mg/L		0.02	30-JUL-08
Cadmium (Cd)			<0.00005		mg/L		0.00025	30-JUL-08
Cobalt (Co)			<0.0001		mg/L		0.0005	30-JUL-08
Chromium (Cr)			<0.00006		mg/L		0.0003	30-JUL-08
Copper (Cu)			<0.0006		mg/L		0.003	30-JUL-08
Potassium (K)			<0.02		mg/L		0.1	30-JUL-08
Magnesium (Mg)			<0.004		mg/L		0.02	30-JUL-08
Manganese (Mn)			<0.0001		mg/L		0.0005	30-JUL-08
Molybdenum (Mo)			<0.00006		mg/L		0.0003	30-JUL-08
Sodium (Na)			<0.005		mg/L		0.025	30-JUL-08
Nickel (Ni)			<0.00006		mg/L		0.0003	30-JUL-08
Lead (Pb)			<0.00005		mg/L		0.00025	30-JUL-08
Antimony (Sb)			<0.00003		mg/L		0.00015	30-JUL-08
Selenium (Se)			<0.0001		mg/L		0.0005	30-JUL-08
Strontium (Sr)			<0.0001		mg/L		0.0005	30-JUL-08
Uranium (U)			<0.00005		mg/L		0.00025	30-JUL-08
Vanadium (V)			<0.00005		mg/L		0.00025	30-JUL-08
Zinc (Zn)			<0.0008		mg/L		0.004	30-JUL-08
MET1-ULTRA-ED		Water						
Batch	R701819							
WG808814-2	CRM	1643E_WATER						
Silver (Ag)			84		%		80-108	30-JUL-08
Aluminum (Al)			106		%		90-122	30-JUL-08
Arsenic (As)			96		%		84-105	30-JUL-08
Boron (B)			95		%		80-116	30-JUL-08
Barium (Ba)			93		%		88-109	30-JUL-08
Beryllium (Be)			95		%		77-110	30-JUL-08
Calcium (Ca)			91		%		82-106	30-JUL-08
Cadmium (Cd)			102		%		87-109	30-JUL-08
Cobalt (Co)			100		%		90-110	30-JUL-08
Chromium (Cr)			97		%		84-118	30-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 8 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-ED		Water						
Batch	R701819							
WG808814-2	CRM	1643E_WATER						
Chromium (Cr)			97		%		84-118	30-JUL-08
Copper (Cu)			98		%		89-112	30-JUL-08
Potassium (K)			92		%		88-119	30-JUL-08
Magnesium (Mg)			90		%		86-109	30-JUL-08
Manganese (Mn)			97		%		81-120	30-JUL-08
Molybdenum (Mo)			98		%		88-111	30-JUL-08
Sodium (Na)			92		%		86-105	30-JUL-08
Nickel (Ni)			99		%		88-110	30-JUL-08
Lead (Pb)			102		%		89-110	30-JUL-08
Antimony (Sb)			96		%		86-108	30-JUL-08
Selenium (Se)			96		%		76-112	30-JUL-08
Strontium (Sr)			100		%		87-109	30-JUL-08
Vanadium (V)			95		%		87-109	30-JUL-08
Zinc (Zn)			99		%		65-133	30-JUL-08
WG808814-1	MB							
Silver (Ag)			<0.0001		mg/L		0.0005	30-JUL-08
Aluminum (Al)			<0.0003		mg/L		0.0015	30-JUL-08
Arsenic (As)			<0.00003		mg/L		0.00015	30-JUL-08
Boron (B)			<0.001		mg/L		0.005	30-JUL-08
Barium (Ba)			<0.00005		mg/L		0.00025	30-JUL-08
Beryllium (Be)			<0.0002		mg/L		0.001	30-JUL-08
Calcium (Ca)			<0.02		mg/L		0.1	30-JUL-08
Cadmium (Cd)			<0.00005		mg/L		0.00025	30-JUL-08
Cobalt (Co)			<0.0001		mg/L		0.0005	30-JUL-08
Chromium (Cr)			<0.00006		mg/L		0.0003	30-JUL-08
Copper (Cu)			<0.0006		mg/L		0.003	30-JUL-08
Potassium (K)			<0.02		mg/L		0.1	30-JUL-08
Magnesium (Mg)			<0.004		mg/L		0.02	30-JUL-08
Manganese (Mn)			<0.0001		mg/L		0.0005	30-JUL-08
Molybdenum (Mo)			<0.00006		mg/L		0.0003	30-JUL-08
Sodium (Na)			<0.005		mg/L		0.025	30-JUL-08
Nickel (Ni)			<0.00006		mg/L		0.0003	30-JUL-08
Lead (Pb)			<0.00005		mg/L		0.00025	30-JUL-08
Antimony (Sb)			<0.00003		mg/L		0.00015	30-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 9 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-ED	Water							
Batch R701819								
WG808814-1 MB								
Selenium (Se)			<0.0001		mg/L		0.0005	30-JUL-08
Strontium (Sr)			<0.0001		mg/L		0.0005	30-JUL-08
Uranium (U)			<0.00005		mg/L		0.00025	30-JUL-08
Vanadium (V)			<0.00005		mg/L		0.00025	30-JUL-08
Zinc (Zn)			<0.0008		mg/L		0.004	30-JUL-08
MET2-ULTRA-DIS-ED	Water							
Batch R701822								
WG809943-1 MB								
Iron (Fe)			<0.005		mg/L		0.025	30-JUL-08
WG809943-11 MS		L658705-8						
Iron (Fe)			103		%		88-111	31-JUL-08
WG809943-9 MS		L658705-3						
Iron (Fe)			105		%		88-111	31-JUL-08
MET2-ULTRA-ED	Water							
Batch R701822								
WG809943-2 DUP		L658105-3						
Iron (Fe)		<0.005	<0.005	RPD-NA	mg/L	N/A	20	30-JUL-08
WG809943-1 MB								
Iron (Fe)			<0.005		mg/L		0.025	30-JUL-08
WG809943-3 MS		L658105-3						
Iron (Fe)			103		%		78-117	30-JUL-08
WG809943-5 MS		L658692-7						
Iron (Fe)			104		%		78-117	30-JUL-08
WG809943-7 MS		L658692-25						
Iron (Fe)			103		%		78-117	30-JUL-08
N-TOTKJ-ED	Water							
Batch R698188								
WG805476-2 LCS								
Total Kjeldahl Nitrogen			96		%		81-114	23-JUL-08
WG805476-3 LCS								
Total Kjeldahl Nitrogen			109		%		69-131	23-JUL-08
WG805476-4 LCS								
Total Kjeldahl Nitrogen			99		%		83-118	23-JUL-08
WG805476-1 MB								
Total Kjeldahl Nitrogen			<0.2		mg/L		0.2	23-JUL-08
N2N3-ED	Water							

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 10 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
N2N3-ED		Water						
Batch	R697767							
WG804604-4	DUP	L658105-3						
Nitrate+Nitrite-N		<0.1	<0.1	RPD-NA	mg/L	N/A	6.9	22-JUL-08
WG804604-3	LCS							
Nitrate+Nitrite-N			95		%		87-113	22-JUL-08
WG804604-2	MB							
Nitrate+Nitrite-N			<0.1		mg/L		0.1	22-JUL-08
WG804604-12	MS	L658808-8						
Nitrate+Nitrite-N			88		%		84-118	22-JUL-08
WG804604-15	MS	L658424-2						
Nitrate+Nitrite-N			92		%		84-118	22-JUL-08
WG804604-5	MS	L658365-2						
Nitrate+Nitrite-N			95		%		84-118	22-JUL-08
WG804604-7	MS	L658291-14						
Nitrate+Nitrite-N			87		%		84-118	22-JUL-08
WG804604-9	MS	L658275-1						
Nitrate+Nitrite-N			98		%		84-118	22-JUL-08
NH4-ED		Water						
Batch	R697449							
WG804434-2	LCS							
Ammonia-N			97		%		91-112	22-JUL-08
WG804434-1	MB							
Ammonia-N			<0.05		mg/L		0.05	22-JUL-08
WG804434-5	MS	L657565-12						
Ammonia-N			100		%		75-122	22-JUL-08
WG804434-6	MS	L657963-7						
Ammonia-N			105		%		75-122	22-JUL-08
NO2-ED		Water						
Batch	R697767							
WG804604-4	DUP	L658105-3						
Nitrite-N		<0.05	<0.05	RPD-NA	mg/L	N/A	6.5	22-JUL-08
WG804604-3	LCS							
Nitrite-N			96		%		94-114	22-JUL-08
WG804604-2	MB							
Nitrite-N			<0.05		mg/L		0.05	22-JUL-08
WG804604-12	MS	L658808-8						
Nitrite-N			96		%		88-113	22-JUL-08
WG804604-15	MS	L658424-2						
Nitrite-N			94		%		88-113	22-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 11 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO2-ED		Water						
Batch	R697767							
WG804604-5	MS	L658365-2						
Nitrite-N			97		%		88-113	22-JUL-08
WG804604-7	MS	L658291-14						
Nitrite-N			105		%		88-113	22-JUL-08
WG804604-9	MS	L658275-1						
Nitrite-N			104		%		88-113	22-JUL-08
OGG-IR-ED		Water						
Batch	R698729							
WG806335-2	LCS							
Oil & Grease-(IR)			116		%		91-146	24-JUL-08
WG806335-1	MB							
Oil & Grease-(IR)			<0.5		mg/L		0.5	24-JUL-08
P-TOTAL-LOW-ED		Water						
Batch	R701645							
WG809302-3	LCS							
Phosphorus, Total			106		%		80-116	30-JUL-08
WG809302-2	MB							
Phosphorus, Total			<0.001		mg/L		0.001	30-JUL-08
WG809302-10	MS	L654899-7						
Phosphorus, Total			106		%		70-130	30-JUL-08
WG809302-11	MS	L657438-6						
Phosphorus, Total			107		%		70-130	30-JUL-08
WG809302-8	MS	L654708-7						
Phosphorus, Total			102		%		70-130	30-JUL-08
WG809302-9	MS	L654820-7						
Phosphorus, Total			104		%		70-130	30-JUL-08
P-TOTALDIS-LOW-ED		Water						
Batch	R701645							
WG809302-3	LCS							
Phosphorus, Total Dissolved			106		%		80-116	30-JUL-08
WG809302-2	MB							
Phosphorus, Total Dissolved			<0.001		mg/L		0.001	30-JUL-08
PH/EC/ALK-ED		Water						
Batch	R697351							
WG804436-2	LCS							
Conductivity (EC)			103		%		94-106	22-JUL-08
WG804436-3	LCS							

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 12 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH/EC/ALK-ED		Water						
Batch	R697351							
WG804436-3	LCS							
pH			7.0		pH		6.9-7.1	22-JUL-08
WG804436-4	LCS							
Alkalinity, Total (as CaCO3)			102		%		90-110	22-JUL-08
WG804436-1	MB							
Bicarbonate (HCO3)			<5		mg/L		5	22-JUL-08
Carbonate (CO3)			<5		mg/L		5	22-JUL-08
Hydroxide (OH)			<5		mg/L		5	22-JUL-08
Alkalinity, Total (as CaCO3)			<5		mg/L		5	22-JUL-08
PHENOLS-4AAP-ED		Water						
Batch	R698232							
WG805820-2	LCS							
Phenols (4AAP)			104		%		85-115	23-JUL-08
WG805820-1	MB							
Phenols (4AAP)			<0.001		mg/L		0.001	23-JUL-08
WG805820-3	MS	L656997-6						
Phenols (4AAP)			101		%		76-124	23-JUL-08
WG805820-6	MS	L657445-1						
Phenols (4AAP)			107		%		76-124	23-JUL-08
WG805820-9	MS	L658116-9						
Phenols (4AAP)			97		%		76-124	23-JUL-08
PO4-LOW-ED		Water						
Batch	R697679							
WG804894-3	LCS							
Orthophosphate (PO4-P)			99		%		91-108	22-JUL-08
WG804894-2	MB							
Orthophosphate (PO4-P)			<0.001		mg/L		0.001	22-JUL-08
WG804894-5	MS	L658114-1						
Orthophosphate (PO4-P)			98		%		82-116	22-JUL-08
SOLIDS-TDS-ED		Water						
Batch	R698079							
WG804818-2	LCS							
Total Dissolved Solids			99		%		87-112	23-JUL-08
WG804818-1	MB							
Total Dissolved Solids			<5		mg/L		5	23-JUL-08
SOLIDS-TOTSUS-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 13 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TOTSUS-ED	Water							
Batch R698192								
WG805248-2 LCS								
Total Suspended Solids			106		%		82-111	23-JUL-08
WG805248-1 MB								
Total Suspended Solids			<3		mg/L		3	23-JUL-08
TL-ULTRA-DIS-ED	Water							
Batch R701819								
WG808814-2 CRM		1643E_WATER						
Thallium (Tl)-Dissolved			102		%		79-126	30-JUL-08
WG808814-1 MB								
Thallium (Tl)-Dissolved			<0.00003		mg/L		0.00015	30-JUL-08
TL-ULTRA-ED	Water							
Batch R701819								
WG808814-2 CRM		1643E_WATER						
Thallium (Tl)-Total			102		%		90-110	30-JUL-08
WG808814-1 MB								
Thallium (Tl)-Total			<0.00003		mg/L		0.00015	30-JUL-08
C-INORG-ORG-SK	Soil							
Batch R704145								
WG809330-3 IRM		0.4%IC						
Inorganic Carbon			0.5		%		0.3-0.5	02-AUG-08
C-INORG-SK	Soil							
Batch R702541								
WG809344-1 DUP		L658105-13						
Inorganic Carbon		<0.09	<0.09	RPD-NA	%	N/A	12	31-JUL-08
CaCO3 Equivalent		1.4	1.4	J	%	0.0	2.8	31-JUL-08
WG809344-2 IRM		0.4%IC						
Inorganic Carbon			0.43		%		0.34-0.48	31-JUL-08
C-TOT-LECO-SK	Soil							
Batch R702697								
WG809333-1 DUP		L658105-10						
Total Carbon by Combustion		6.2	6.0		%	2.2	6.4	31-JUL-08
WG809333-2 IRM		1.6%C						
Total Carbon by Combustion			1.5		%		1.3-1.7	31-JUL-08
CN-TOT-WP	Soil							

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 14 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-TOT-WP		Soil						
Batch	R700696							
WG808481-3	CCV							
Cyanide, Total			106		%		90-110	28-JUL-08
WG808481-2	CVS							
Cyanide, Total			107		%		80-120	28-JUL-08
METAL-CCME-ED		Soil						
Batch	R698333							
WG805295-2	CRM	2702_SOIL						
Silver (Ag)			114		%		47-158	23-JUL-08
Arsenic (As)			101		%		92-111	23-JUL-08
Barium (Ba)			107		%		90-123	23-JUL-08
Beryllium (Be)			108		%		80-126	23-JUL-08
Cadmium (Cd)			104		%		87-117	23-JUL-08
Cobalt (Co)			108		%		90-120	23-JUL-08
Chromium (Cr)			107		%		86-119	23-JUL-08
Copper (Cu)			104		%		91-118	23-JUL-08
Mercury (Hg)			126		%		37-185	23-JUL-08
Molybdenum (Mo)			105		%		87-124	23-JUL-08
Nickel (Ni)			107		%		89-121	23-JUL-08
Lead (Pb)			109		%		90-126	23-JUL-08
Selenium (Se)			103		%		78-123	23-JUL-08
Tin (Sn)			120		%		73-139	23-JUL-08
Uranium (U)			100		%		89-128	23-JUL-08
Vanadium (V)			98		%		86-116	23-JUL-08
Zinc (Zn)			95		%		81-112	23-JUL-08
WG805295-3	DUP	L658105-9						
Silver (Ag)		<1	<1	RPD-NA	mg/kg	N/A	33	24-JUL-08
Arsenic (As)		40.5	40.3		mg/kg	0.35	15	24-JUL-08
Barium (Ba)		118	118		mg/kg	0.026	22	24-JUL-08
Beryllium (Be)		<1	<1	RPD-NA	mg/kg	N/A	26	24-JUL-08
Cadmium (Cd)		<0.5	<0.5	RPD-NA	mg/kg	N/A	23	24-JUL-08
Cobalt (Co)		19	19		mg/kg	0.078	13	24-JUL-08
Chromium (Cr)		53.4	52.4		mg/kg	1.8	19	24-JUL-08
Copper (Cu)		76	75		mg/kg	1.4	13	24-JUL-08
Mercury (Hg)		<0.05	<0.05	RPD-NA	mg/kg	N/A	25	24-JUL-08
Molybdenum (Mo)		5	5	J	mg/kg	0	4	24-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 15 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
METAL-CCME-ED		Soil						
Batch	R698333							
WG805295-3	DUP	L658105-9						
Nickel (Ni)		70	70		mg/kg	0.70	14	24-JUL-08
Lead (Pb)		13	12	J	mg/kg	0	20	24-JUL-08
Antimony (Sb)		<0.2	<0.2	RPD-NA	mg/kg	N/A	41	24-JUL-08
Selenium (Se)		1.2	1.3	J	mg/kg	0.0	0.8	24-JUL-08
Tin (Sn)		<5	<5	RPD-NA	mg/kg	N/A	31	24-JUL-08
Thallium (Tl)		<1	<1	RPD-NA	mg/kg	N/A	27	24-JUL-08
Uranium (U)		4	4	J	mg/kg	0	8	24-JUL-08
Vanadium (V)		58	57		mg/kg	1.6	23	24-JUL-08
Zinc (Zn)		100	100	J	mg/kg	0	40	24-JUL-08
WG805295-1	MB							
Silver (Ag)			<1		mg/kg		5	23-JUL-08
Arsenic (As)			<0.2		mg/kg		1	23-JUL-08
Barium (Ba)			<5		mg/kg		25	23-JUL-08
Beryllium (Be)			<1		mg/kg		1	23-JUL-08
Cadmium (Cd)			<0.5		mg/kg		2.5	23-JUL-08
Cobalt (Co)			<1		mg/kg		5	23-JUL-08
Chromium (Cr)			<0.5		mg/kg		2.5	23-JUL-08
Copper (Cu)			<2		mg/kg		10	23-JUL-08
Mercury (Hg)			0.05		mg/kg		0.25	23-JUL-08
Molybdenum (Mo)			<1		mg/kg		5	23-JUL-08
Nickel (Ni)			<2		mg/kg		10	23-JUL-08
Lead (Pb)			<5		mg/kg		25	23-JUL-08
Antimony (Sb)			<0.2		mg/kg		1	23-JUL-08
Selenium (Se)			<0.2		mg/kg		1	23-JUL-08
Tin (Sn)			<5		mg/kg		25	23-JUL-08
Thallium (Tl)			<1		mg/kg		5	23-JUL-08
Uranium (U)			<2		mg/kg		2	23-JUL-08
Vanadium (V)			<1		mg/kg		5	23-JUL-08
Zinc (Zn)			<10		mg/kg		50	23-JUL-08
WG805295-4	MS	L658105-9						
Silver (Ag)			20		%		18-114	24-JUL-08
Arsenic (As)			104		%		91-114	24-JUL-08
Barium (Ba)			105		%		56-151	24-JUL-08
Beryllium (Be)			106		%		82-121	24-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 16 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
METAL-CCME-ED		Soil						
Batch	R698333							
WG805295-4	MS	L658105-9						
Cadmium (Cd)			106		%		92-117	24-JUL-08
Cobalt (Co)			100		%		87-112	24-JUL-08
Chromium (Cr)			104		%		85-117	24-JUL-08
Copper (Cu)			103		%		80-116	24-JUL-08
Mercury (Hg)			57		%		48-138	24-JUL-08
Molybdenum (Mo)			110		%		91-122	24-JUL-08
Nickel (Ni)			102		%		83-112	24-JUL-08
Lead (Pb)			106		%		83-119	24-JUL-08
Antimony (Sb)			110		%		90-118	24-JUL-08
Selenium (Se)			107		%		90-120	24-JUL-08
Tin (Sn)			107		%		92-118	24-JUL-08
Thallium (Tl)			109		%		83-126	24-JUL-08
Uranium (U)			109		%		86-117	24-JUL-08
Vanadium (V)			104		%		84-117	24-JUL-08
Zinc (Zn)			105		%		85-118	24-JUL-08
MOISTURE-WP		Soil						
Batch	R722802							
WG834625-1	DUP	L658105-19						
% Moisture		63	62		%	1.1	39	13-SEP-08
N-TOT-LECO-SK		Soil						
Batch	R702499							
WG809346-2	CRM	SO2_SOIL						
Total Nitrogen by LECO			0.26		%		0.19-0.26	31-JUL-08
WG809346-1	DUP	L658105-11						
Total Nitrogen by LECO		0.55	0.54	J	%	0.02	0.068	31-JUL-08
PAH-ALK-ED		Soil						
Batch	R699517							
WG804171-3	LCS							
Acenaphthene			101		%		52-128	25-JUL-08
Acenaphthylene			98		%		49-125	25-JUL-08
Acridine			107		%		55-145	25-JUL-08
Anthracene			93		%		52-128	25-JUL-08
Benzo(a)anthracene			111		%		41-135	25-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 17 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ALK-ED		Soil						
Batch	R699517							
WG804171-3	LCS							
Benzo(a)pyrene			107		%		40-132	25-JUL-08
Benzo(b&j)fluoranthene			106		%		55-145	25-JUL-08
Benzo(k)fluoranthene			111		%		49-134	25-JUL-08
Benzo(ghi)perylene			89		%		37-133	25-JUL-08
Biphenyl			103		%		60-126	25-JUL-08
C2 sub'd naphthalene			103		%		54-121	25-JUL-08
C3 sub'd naphthalene			104		%		58-129	25-JUL-08
C4 sub'd phenanthrene/anth.			111		%		55-145	25-JUL-08
Chrysene			110		%		57-130	25-JUL-08
Dibenzo(a,h)anthracene			98		%		31-132	25-JUL-08
Dibenzothiophene			101		%		55-130	25-JUL-08
Fluoranthene			106		%		50-129	25-JUL-08
Fluorene			102		%		52-127	25-JUL-08
Indeno(c,d-123)pyrene			101		%		40-132	25-JUL-08
1-Methylnaphthalene			99		%		44-124	25-JUL-08
Methyl phenanthrene/anthracene			84		%		52-125	25-JUL-08
Naphthalene			92		%		36-132	25-JUL-08
Phenanthrene			110		%		46-132	25-JUL-08
Pyrene			105		%		49-134	25-JUL-08
Quinoline			101		%		44-118	25-JUL-08
Retene			110		%		55-145	25-JUL-08
WG804171-1	MB							
Acenaphthene			<0.005		mg/kg		0.01	25-JUL-08
Acenaphthylene			<0.005		mg/kg		0.01	25-JUL-08
Acridine			<0.005		mg/kg		0.01	25-JUL-08
Anthracene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(a)anthracene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(a)pyrene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(b&j)fluoranthene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(k)fluoranthene			<0.005		mg/kg		0.01	25-JUL-08
Benzo(ghi)perylene			<0.005		mg/kg		0.01	25-JUL-08
Biphenyl			<0.005		mg/kg		0.01	25-JUL-08
C2 sub'd B(a)A/chrysene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd B(b&k)F/B(a)P			<0.02		mg/kg		0.04	25-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 18 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ALK-ED		Soil						
Batch	R699517							
WG804171-1	MB							
C2 sub'd biphenyl			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd fluorene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd naphthalene			<0.02		mg/kg		0.04	25-JUL-08
C2 sub'd phenanthrene/anth.			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd naphthalene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd phenanthrene/anth.			<0.02		mg/kg		0.04	25-JUL-08
C4 sub'd dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
C4 sub'd naphthalene			<0.02		mg/kg		0.04	25-JUL-08
C4 sub'd phenanthrene/anth.			<0.02		mg/kg		0.04	25-JUL-08
Chrysene			<0.005		mg/kg		0.01	25-JUL-08
Dibenzo(a,h)anthracene			<0.005		mg/kg		0.01	25-JUL-08
Dibenzothiophene			<0.005		mg/kg		0.01	25-JUL-08
Fluoranthene			<0.005		mg/kg		0.01	25-JUL-08
Fluorene			<0.005		mg/kg		0.01	25-JUL-08
Indeno(c,d-123)pyrene			<0.005		mg/kg		0.01	25-JUL-08
Methyl B(a)A/chrysene			<0.02		mg/kg		0.04	25-JUL-08
Methyl B(b&k)F/B(a)P			<0.02		mg/kg		0.04	25-JUL-08
Methyl acenaphthene			<0.02		mg/kg		0.04	25-JUL-08
Methyl biphenyl			<0.02		mg/kg		0.04	25-JUL-08
Methyl dibenzothiophene			<0.02		mg/kg		0.04	25-JUL-08
Methyl fluoranthene/pyrene			<0.02		mg/kg		0.04	25-JUL-08
Methyl fluorene			<0.02		mg/kg		0.04	25-JUL-08
1-Methylnaphthalene			<0.005		mg/kg		0.01	25-JUL-08
Methyl phenanthrene/anthracene			<0.02		mg/kg		0.04	25-JUL-08
Naphthalene			0.009		mg/kg		0.01	25-JUL-08
Phenanthrene			<0.005		mg/kg		0.01	25-JUL-08
Pyrene			<0.005		mg/kg		0.01	25-JUL-08
Quinoline			<0.005		mg/kg		0.01	25-JUL-08
C2 sub'd fluoranthene/pyrene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd fluoranthene/pyrene			<0.02		mg/kg		0.04	25-JUL-08
C3 sub'd fluorene			<0.02		mg/kg		0.04	25-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 19 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-ALK-ED								
Soil								
Batch	R699517							
WG804171-1	MB							
Retene			<0.005		mg/kg		0.01	25-JUL-08
PREP-MOISTURE-ED								
Soil								
Batch	R697849							
WG804582-1	DUP	L658105-4						
% Moisture		55	58		%	5.8	20	22-JUL-08
PSA-1-SK								
Soil								
Batch	R703175							
WG809308-1	DUP	L658105-15						
% Sand (2.0mm - 0.05mm)		45	45	J	%	0	3.1	01-AUG-08
% Silt (0.05mm - 2um)		50	49	J	%	1	3.1	01-AUG-08
% Clay (<2um)		6	6	J	%	0	4	01-AUG-08
WG809308-4	IRM	FARM98						
% Sand (2.0mm - 0.05mm)			47		%		40-51	01-AUG-08
% Silt (0.05mm - 2um)			29		%		26-33	01-AUG-08

ALS Laboratory Group Quality Control Report

Workorder: L658105

Report Date: 19-NOV-08

Page 20 of 20

Legend:

Limit	99% Confidence Interval (Laboratory Control Limits)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

[illegible]



Environmental Division

REPORT TO:		REPORT FORMAT / DISTRIBUTION		SERVICE REQUESTED	
COMPANY: <u>Golder Associates</u>		STANDARD ☒ OTHER ☐		REGULAR SERVICE (DEFAULT) ☒	
CONTACT: <u>Kerrie Serben</u>		PDF ☒ EXCEL ☒ CUSTOM ☐ FAX ☐		RUSH SERVICE (2-3 DAYS)	
ADDRESS: <u>195 Pemberton Ave.</u>		EMAIL 1: <u>KSerben@golder.com</u>		PRIORITY SERVICE (1 DAY or ASAP)	
<u>North Vancouver, BC</u>		EMAIL 2: <u>Ade Bruyn @ golder.com</u>		EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS	
PHONE: <u>604-986-4331</u> FAX: <u>604-662-8548</u>		ANALYSIS REQUEST			
INVOICE TO: SAME AS REPORT? YES / ☒ NO		INDICATE BOTTLES: FILTERED / PRESERVED (F/P)			
COMPANY: <u>Complex Meliadine Corp</u>		CLIENT / PROJECT INFORMATION:			
CONTACT: <u>Sandy Barcham</u>		JOB #: <u>07-1373-0055-6030</u>			
ADDRESS: <u>Suite 901, 1015-4th St. SW</u>		PO / AFE:			
<u>Calgary, AB</u>		Legal Site Description: <u>multiple sites.</u>			
PHONE: <u>T2R 1J4</u>		QUOTE #:			
Lab Work Order # (lab use only)		SAMPLER (Initials): <u>TAZ</u>			
Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	
	BOOT-1-1a	16-July-2008	08:00	sediment	
	BOOT-1-1b		08:00		
	BOOT-1-2a		13:00		
	BOOT-1-2b		13:00		
	BOOT-2-1a		14:40		
	BOOT-2-1b		14:40		
	BOOT-2-2a		15:30		
	BOOT-2-2b		15:30		
GUIDELINES / REGULATIONS		SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS			
CCME AWG for sediment		sediment samples. Refrigerate and contact Kerrie Serben or Adrian de Bruyn, Golder, North Vancouver, 604-986-4331 if any questions.			
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 reverse page of the white report copy.					
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:	SAMPLE CONDITION (lab use only)	
<u>Thalia Zis</u>	<u>July 18, 09:00</u>			TEMPERATURE: <u>12.0C</u>	
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:	SAMPLES RECEIVED IN GOOD CONDITION? YES / NO (If no provide details)	



Environmental Division

Certificate of Analysis

GOLDER ASSOCIATES LTD

ATTN: KERRIE SERBEN

195 PEMBERTON AVE

NORTH VANCOUVER BC V7P 2R4

Reported On: 22-SEP-08 05:19 PM

Revision: 6

Lab Work Order #: **L658705**

Date Received: **22-JUL-08**

Project P.O. #: NOT SUBMITTED
Job Reference: 07-1373-0055, PHASE 6030
Legal Site Desc: MULTIPLE SITES
CofC Numbers: C093567

Other Information:

Comments: ADDITIONAL 19-SEP-08 09:54
ADDITIONAL 10-SEP-08 17:32


NHAN H NGUYEN
Senior Account Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

ALS Canada Ltd. (formerly ETL Chemspec Analytical Ltd.)
Part of the **ALS Laboratory Group**

9936-67 Avenue, Edmonton, AB T6E 0P5
Phone: +1 780 413 5227 Fax: +1 780 437 2311 www.alsglobal.com
A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658705-9	L658705-10	L658705-11	L658705-12	L658705-13
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	18-JUL-08	18-JUL-08	18-JUL-08	18-JUL-08	18-JUL-08
		Sampled Time	10:02	10:02	10:55	10:55	15:20
		Client ID	CONTROL -1A	CONTROL -1B	CONTROL -2A	CONTROL -2B	ML-SE-1A
Grouping	Analyte						
SOIL							
Physical Tests	% Moisture (%)		80	76	82	77	75
Particle Size	Texture		Loamy sand	Sandy loam / Loamy sand	Sandy loam	Sandy loam	Sandy loam
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)		0.34	0.29	0.39	0.30	0.39
Cyanides	Cyanide, Total (mg/kg)		1.6	2.2	3.6	2.6	1.7
Organic / Inorganic Carbon	CaCO3 Equivalent (%)		1.6	1.5	1.5	1.4	1.5
	Inorganic Carbon (%)		<0.1	<0.1	<0.1	<0.1	<0.1
	Total Carbon by Combustion (%)		4.5	3.6	5.4	3.8	3.8
	Total Organic Carbon (%)		4.5	3.6	5.4	3.8	3.8
Metals	Antimony (Sb) (mg/kg)		<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As) (mg/kg)		6.3	7.3	7.2	6.8	7.5
	Barium (Ba) (mg/kg)		37	39	41	38	45
	Beryllium (Be) (mg/kg)		<1	<1	<1	<1	<1
	Cadmium (Cd) (mg/kg)		<0.5	<0.5	<0.5	<0.5	<0.5
	Chromium (Cr) (mg/kg)		23.6	26.6	25.4	25.6	26.6
	Cobalt (Co) (mg/kg)		6	7	6	6	5
	Copper (Cu) (mg/kg)		26	35	30	35	20
	Lead (Pb) (mg/kg)		<5	<5	<5	<5	<5
	Mercury (Hg) (mg/kg)		<0.05	0.06	<0.05	<0.05	<0.05
	Molybdenum (Mo) (mg/kg)		1	1	1	2	1
	Nickel (Ni) (mg/kg)		18	21	21	20	17
	Selenium (Se) (mg/kg)		0.3	0.4	0.3	0.3	0.3
	Silver (Ag) (mg/kg)		<1	<1	<1	<1	<1
	Thallium (Tl) (mg/kg)		<1	<1	<1	<1	<1
	Tin (Sn) (mg/kg)		<5	<5	<5	<5	<5
	Uranium (U) (mg/kg)		<2	<2	<2	<2	<2
	Vanadium (V) (mg/kg)		21	26	24	24	26
	Zinc (Zn) (mg/kg)		30	30	30	30	30
Particle Size	% Sand (2.0mm - 0.05mm) (%)		79	76	74	70	56
	% Silt (0.05mm - 2um) (%)		17	19	19	24	36
	% Clay (<2um) (%)		4	5	7	6	9

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

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L658705-14 SEDIMENT 18-JUL-08 15:20 ML-SE-1B	L658705-15 SEDIMENT 18-JUL-08 16:10 ML-SE-2A	L658705-16 SEDIMENT 18-JUL-08 16:10 ML-SE-2B	L658705-17 SEDIMENT 19-JUL-08 08:30 ML-B-1A	L658705-18 SEDIMENT 19-JUL-08 08:30 ML-B-1B
Grouping	Analyte					
SOIL						
Physical Tests	% Moisture (%)	72	78	75	42	43
Particle Size	Texture	Sandy loam	Sandy loam	Sandy loam	Loamy sand	Loamy sand
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)	0.29	0.51	0.30	0.08	0.19
Cyanides	Cyanide, Total (mg/kg)	1.7	2.9	2.1	0.6	0.6
Organic / Inorganic Carbon	CaCO3 Equivalent (%)	1.5	1.6	1.5	1.4	1.5
	Inorganic Carbon (%)	<0.1	<0.1	<0.1	<0.1	<0.1
	Total Carbon by Combustion (%)	2.9	4.9	3.1	0.8	0.9
	Total Organic Carbon (%)	2.9	4.9	3.1	0.8	0.9
Metals	Antimony (Sb) (mg/kg)	<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As) (mg/kg)	7.6	8.2	7.6	2.0	2.2
	Barium (Ba) (mg/kg)	50	51	49	21	27
	Beryllium (Be) (mg/kg)	<1	<1	<1	<1	<1
	Cadmium (Cd) (mg/kg)	<0.5	<0.5	<0.5	<0.5	<0.5
	Chromium (Cr) (mg/kg)	28.1	29.2	29.4	14.6	16.0
	Cobalt (Co) (mg/kg)	6	5	6	3	3
	Copper (Cu) (mg/kg)	23	24	25	10	12
	Lead (Pb) (mg/kg)	<5	5	5	<5	<5
	Mercury (Hg) (mg/kg)	<0.05	<0.05	<0.05	<0.05	<0.05
	Molybdenum (Mo) (mg/kg)	2	1	2	<1	<1
	Nickel (Ni) (mg/kg)	18	19	20	8	9
	Selenium (Se) (mg/kg)	0.4	0.4	0.4	<0.2	0.2
	Silver (Ag) (mg/kg)	<1	<1	<1	<1	<1
	Thallium (Tl) (mg/kg)	<1	<1	<1	<1	<1
	Tin (Sn) (mg/kg)	<5	<5	<5	<5	<5
	Uranium (U) (mg/kg)	<2	<2	<2	<2	<2
	Vanadium (V) (mg/kg)	29	27	29	13	15
	Zinc (Zn) (mg/kg)	40	40	40	20	20
Particle Size	% Sand (2.0mm - 0.05mm) (%)	58	56	66	82	76
	% Silt (0.05mm - 2um) (%)	37	39	31	16	22
	% Clay (<2um) (%)	5	6	4	2	2

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658705-19	L658705-20	L658705-21	L658705-22	L658705-23
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	19-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08
		Sampled Time	09:30	09:30	11:05	11:05	12:20
		Client ID	ML-B-2A	ML-B-2B	ML-S-1A	ML-S-1B	ML-S-2A
Grouping	Analyte						
SOIL							
Physical Tests	% Moisture (%)		40	43	77	75	83
Particle Size	Texture		Loamy sand	Loamy sand	Loamy sand	Loamy sand	Loamy sand
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)		0.08	0.08	0.31	0.29	0.41
Cyanides	Cyanide, Total (mg/kg)		<0.5	0.6	2.4	2.3	2.1
Organic / Inorganic Carbon	CaCO3 Equivalent (%)		1.5	1.6	1.4	1.5	1.5
	Inorganic Carbon (%)		<0.1	<0.1	<0.1	<0.1	<0.1
	Total Carbon by Combustion (%)		0.7	0.8	4.0	3.3	5.0
	Total Organic Carbon (%)		0.7	0.8	4.0	3.3	5.0
Metals	Antimony (Sb) (mg/kg)		<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As) (mg/kg)		1.8	2.0	5.8	4.8	4.9
	Barium (Ba) (mg/kg)		19	26	59	52	50
	Beryllium (Be) (mg/kg)		<1	<1	<1	<1	<1
	Cadmium (Cd) (mg/kg)		<0.5	<0.5	<0.5	<0.5	<0.5
	Chromium (Cr) (mg/kg)		13.2	16.3	28.6	26.0	24.4
	Cobalt (Co) (mg/kg)		2	3	6	6	5
	Copper (Cu) (mg/kg)		7	12	34	32	29
	Lead (Pb) (mg/kg)		<5	<5	<5	<5	5
	Mercury (Hg) (mg/kg)		<0.05	<0.05	<0.05	<0.05	<0.05
	Molybdenum (Mo) (mg/kg)		<1	<1	4	1	1
	Nickel (Ni) (mg/kg)		7	10	23	20	20
	Selenium (Se) (mg/kg)		<0.2	<0.2	0.4	0.4	0.3
	Silver (Ag) (mg/kg)		<1	<1	<1	<1	<1
	Thallium (Tl) (mg/kg)		<1	<1	<1	<1	<1
	Tin (Sn) (mg/kg)		<5	<5	<5	<5	<5
	Uranium (U) (mg/kg)		<2	<2	<2	<2	<2
	Vanadium (V) (mg/kg)		12	15	28	27	24
	Zinc (Zn) (mg/kg)		20	20	40	40	30
Particle Size	% Sand (2.0mm - 0.05mm) (%)		80	75	79	76	80
	% Silt (0.05mm - 2um) (%)		17	21	16	18	14
	% Clay (<2um) (%)		3	4	5	6	6

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658705-24	L658705-25	L658705-26	L658705-27	L658705-28
		Description	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
		Sampled Date	19-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08	19-JUL-08
		Sampled Time	12:20	15:15	15:15	16:00	16:00
		Client ID	ML-S-2B	ML-W-1A	ML-W-1B	ML-W-2A	ML-W-2B
Grouping	Analyte						
SOIL							
Physical Tests	% Moisture (%)		80	70	75	69	72
Particle Size	Texture		Sandy loam	Loamy sand	Loamy sand	Loamy sand	Loamy sand
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)		0.29	0.23	0.24	0.20	0.22
Cyanides	Cyanide, Total (mg/kg)		1.8	1.9	1.6	1.8	1.7
Organic / Inorganic Carbon	CaCO3 Equivalent (%)		1.4	1.5	1.4	1.5	1.3
	Inorganic Carbon (%)		<0.1	<0.1	<0.1	<0.1	<0.1
	Total Carbon by Combustion (%)		4.0	2.6	2.9	2.4	2.4
	Total Organic Carbon (%)		4.0	2.6	2.9	2.4	2.4
Metals	Antimony (Sb) (mg/kg)		<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As) (mg/kg)		4.9	4.5	4.3	3.6	3.2
	Barium (Ba) (mg/kg)		50	62	67	57	53
	Beryllium (Be) (mg/kg)		<1	<1	<1	<1	<1
	Cadmium (Cd) (mg/kg)		<0.5	<0.5	<0.5	<0.5	<0.5
	Chromium (Cr) (mg/kg)		25.6	19.9	22.2	18.9	18.3
	Cobalt (Co) (mg/kg)		6	5	5	4	4
	Copper (Cu) (mg/kg)		34	30	38	27	30
	Lead (Pb) (mg/kg)		<5	<5	<5	<5	<5
	Mercury (Hg) (mg/kg)		<0.05	<0.05	<0.05	<0.05	<0.05
	Molybdenum (Mo) (mg/kg)		1	1	2	1	1
	Nickel (Ni) (mg/kg)		21	19	22	18	17
	Selenium (Se) (mg/kg)		0.4	0.4	0.5	0.4	0.4
	Silver (Ag) (mg/kg)		<1	<1	<1	<1	<1
	Thallium (Tl) (mg/kg)		<1	<1	<1	<1	<1
	Tin (Sn) (mg/kg)		<5	<5	<5	<5	<5
	Uranium (U) (mg/kg)		<2	<2	<2	<2	<2
	Vanadium (V) (mg/kg)		26	21	25	21	21
	Zinc (Zn) (mg/kg)		40	30	40	30	30
Particle Size	% Sand (2.0mm - 0.05mm) (%)		76	83	79	81	82
	% Silt (0.05mm - 2um) (%)		17	14	16	15	14
	% Clay (<2um) (%)		7	2	5	4	3

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

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L658705-29 SEDIMENT 20-JUL-08 16:00 DI-1-1A	L658705-30 SEDIMENT 20-JUL-08 16:00 DI-1-1B	L658705-31 SEDIMENT 20-JUL-08 16:20 DI-1-2A	L658705-32 SEDIMENT 20-JUL-08 16:20 DI-1-2B	L658705-33 SEDIMENT 20-JUL-08 12:00 DI-4-1A
Grouping	Analyte					
SOIL						
Physical Tests	% Moisture (%)	58	56	59	59	76
Particle Size	Texture	Loamy sand	Loamy sand	Loamy sand	Loamy sand	Silt loam
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)	0.14	0.10	0.15	0.14	0.40
Cyanides	Cyanide, Total (mg/kg)	1.0	1.2	1.8	1.5	3.0
Organic / Inorganic Carbon	CaCO3 Equivalent (%)	1.5	1.4	1.4	1.2	1.6
	Inorganic Carbon (%)	<0.1	<0.1	<0.1	<0.1	<0.1
	Total Carbon by Combustion (%)	1.5	1.2	1.6	1.6	4.1
	Total Organic Carbon (%)	1.5	1.2	1.6	1.6	4.1
Metals	Antimony (Sb) (mg/kg)	<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As) (mg/kg)	6.6	6.9	7.2	7.5	33.0
	Barium (Ba) (mg/kg)	45	43	46	49	78
	Beryllium (Be) (mg/kg)	<1	<1	<1	<1	<1
	Cadmium (Cd) (mg/kg)	<0.5	<0.5	<0.5	<0.5	<0.5
	Chromium (Cr) (mg/kg)	22.6	21.9	22.4	24.0	42.9
	Cobalt (Co) (mg/kg)	5	4	5	5	13
	Copper (Cu) (mg/kg)	22	20	22	22	44
	Lead (Pb) (mg/kg)	<5	<5	<5	<5	7
	Mercury (Hg) (mg/kg)	<0.05	<0.05	<0.05	<0.05	<0.05
	Molybdenum (Mo) (mg/kg)	1	<1	<1	<1	2
	Nickel (Ni) (mg/kg)	21	19	21	23	42
	Selenium (Se) (mg/kg)	0.2	0.2	0.3	0.2	0.6
	Silver (Ag) (mg/kg)	<1	<1	<1	<1	<1
	Thallium (Tl) (mg/kg)	<1	<1	<1	<1	<1
	Tin (Sn) (mg/kg)	<5	<5	<5	<5	<5
	Uranium (U) (mg/kg)	<2	<2	<2	<2	<2
	Vanadium (V) (mg/kg)	20	20	20	22	39
	Zinc (Zn) (mg/kg)	30	30	30	30	60
Particle Size	% Sand (2.0mm - 0.05mm) (%)	76	77	78	76	40
	% Silt (0.05mm - 2um) (%)	20	19	21	21	54
	% Clay (<2um) (%)	4	3	2	3	6

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID				
		Description				
		Sampled Date				
		Sampled Time				
		Client ID				
Grouping		Analyte				
SOIL						
Physical Tests	% Moisture (%)	66	79	74		
Particle Size	Texture	Silt loam	Sandy loam	Sandy loam		
Leachable Anions & Nutrients	Total Nitrogen by LECO (%)	0.28	0.49	0.37		
Cyanides	Cyanide, Total (mg/kg)	2.3	4.2	3.3		
Organic / Inorganic Carbon	CaCO3 Equivalent (%)	1.6	3.0	2.9		
	Inorganic Carbon (%)	<0.1	<0.1	<0.1		
	Total Carbon by Combustion (%)	2.9	4.8	3.9		
	Total Organic Carbon (%)	2.9	4.8	3.9		
Metals	Antimony (Sb) (mg/kg)	<0.2	<0.2	<0.2		
	Arsenic (As) (mg/kg)	42.5	43.5	67.8		
	Barium (Ba) (mg/kg)	70	88	85		
	Beryllium (Be) (mg/kg)	<1	<1	<1		
	Cadmium (Cd) (mg/kg)	<0.5	<0.5	<0.5		
	Chromium (Cr) (mg/kg)	40.9	46.4	48.5		
	Cobalt (Co) (mg/kg)	14	16	21		
	Copper (Cu) (mg/kg)	42	51	59		
	Lead (Pb) (mg/kg)	6	8	8		
	Mercury (Hg) (mg/kg)	<0.05	<0.05	0.06		
	Molybdenum (Mo) (mg/kg)	2	2	3		
	Nickel (Ni) (mg/kg)	47	52	66		
	Selenium (Se) (mg/kg)	0.6	0.7	0.7		
	Silver (Ag) (mg/kg)	<1	<1	<1		
	Thallium (Tl) (mg/kg)	<1	<1	<1		
	Tin (Sn) (mg/kg)	<5	<5	<5		
	Uranium (U) (mg/kg)	<2	<2	<2		
	Vanadium (V) (mg/kg)	38	42	43		
	Zinc (Zn) (mg/kg)	50	60	70		
Particle Size	% Sand (2.0mm - 0.05mm) (%)	38	49	48		
	% Silt (0.05mm - 2um) (%)	55	46	47		
	% Clay (<2um) (%)	8	5	6		

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658705-1	L658705-2	L658705-3	L658705-4	L658705-5
		Description	FRESH WATER	FRESH WATER	FRESH WATER	FRESH WATER	FRESH WATER
		Sampled Date	18-JUL-08	18-JUL-08	19-JUL-08	20-JUL-08	20-JUL-08
		Sampled Time	09:07	14:20	14:00	11:10	15:25
		Client ID	CONTROL	ML-SE	ML-W	DI-4	DI-1
Grouping	Analyte						
WATER							
Physical Tests	Total Suspended Solids (mg/L)	<3	<3	<3	<3	<3	
	Total Dissolved Solids (mg/L)	46	51	40	46	36	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	22	23	13	16	13	
	Ammonia-N (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05	
	Bicarbonate (HCO3) (mg/L)	26	28	16	19	16	
	Carbonate (CO3) (mg/L)	<5	<5	<5	<5	<5	
	Chloride (Cl) (mg/L)	6	6	5	7	3	
	Conductivity (EC) (uS/cm)	68.2	75.5	61.3	71.8	51.1	
	Hardness (as CaCO3) (mg/L)	22	25	17	21	17	
	Hydroxide (OH) (mg/L)	<5	<5	<5	<5	<5	
	Ion Balance (%)	Low EC	Low EC	Low EC	Low EC	Low EC	
	Nitrate+Nitrite-N (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1	
	Nitrate-N (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1	
	Nitrite-N (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05	
	Total Kjeldahl Nitrogen (mg/L)	0.3 *	<0.2	<0.2	<0.2	<0.2	
	pH (pH)	7.5	7.6	7.5	7.5	7.4	
	Orthophosphate (PO4-P) (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	
	Phosphorus, Total (mg/L)	0.009	0.006	0.004	0.005	0.004	
	Phosphorus, Total Dissolved (mg/L)	0.003	0.003	0.002	0.003	0.002	
	TDS (Calculated) (mg/L)	35	37	27	34	24	
Cyanides	Cyanide, Total (mg/L)	<0.002	<0.002	<0.002	<0.002	<0.002	
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	3.7	3.2	2.9	3.9	3.8	
	Total Carbon (mg/L)	8	8	5	7	7	
	Total Organic Carbon (mg/L)	4	4	3	3	4	
Metals	Calcium (Ca) (mg/L)	7.5	8.3	5.5	6.7	5.4	
	Magnesium (Mg) (mg/L)	0.9	1.1	0.9	1.1	0.8	
	Potassium (K) (mg/L)	0.9	0.9	0.8	0.8	0.8	
	Sodium (Na) (mg/L)	4	4	4	5	3	
	Sulfate (SO4) (mg/L)	2.2	2.8	2.9	3.5	2.8	
Total Metals	Aluminum (Al) (mg/L)	0.0036	0.0029	0.0016	0.0056	0.0038	
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
	Arsenic (As) (mg/L)	0.00039	0.00038	0.00017	0.00088	0.00052	
	Barium (Ba) (mg/L)	0.00691	0.00735	0.00659	0.00651	0.00613	
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
	Boron (B) (mg/L)	0.004	0.003	0.003	0.004	0.002	
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	Calcium (Ca) (mg/L)	7.19	7.54	5.13	6.38	5.07	
	Chromium (Cr) (mg/L)	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L658705-6 FRESH WATER 19-JUL-08 12:30 ML-MR	L658705-7 FRESH WATER 20-JUL-08 09:30 NEW-1	L658705-8 FRESH WATER 20-JUL-08 18:00 E9-8		
Grouping	Analyte						
WATER							
Physical Tests	Total Suspended Solids (mg/L)	<3	<3	<3			
	Total Dissolved Solids (mg/L)	40	99	<5			
Anions and Nutrients	Alkalinity, Total (as CaCO ₃) (mg/L)	16	39	<5			
	Ammonia-N (mg/L)	<0.05	<0.05	<0.05			
	Bicarbonate (HCO ₃) (mg/L)	19	47	<5			
	Carbonate (CO ₃) (mg/L)	<5	<5	<5			
	Chloride (Cl) (mg/L)	5	18	<1			
	Conductivity (EC) (uS/cm)	64.2	151	3.9			
	Hardness (as CaCO ₃) (mg/L)	20	47	<1			
	Hydroxide (OH) (mg/L)	<5	<5	<5			
	Ion Balance (%)	Low EC	106	Low TDS			
	Nitrate+Nitrite-N (mg/L)	<0.1	<0.1	<0.1			
	Nitrate-N (mg/L)	<0.1	<0.1	<0.1			
	Nitrite-N (mg/L)	<0.05	<0.05	<0.05			
	Total Kjeldahl Nitrogen (mg/L)	<0.2	0.4	<0.2			
	pH (pH)	7.5	7.6	5.7			
	Orthophosphate (PO ₄ -P) (mg/L)	<0.001	<0.001	<0.001			
	Phosphorus, Total (mg/L)	0.004	0.009	<0.001			
	Phosphorus, Total Dissolved (mg/L)	0.002	0.004	<0.001			
	TDS (Calculated) (mg/L)	30	75	<1			
Cyanides	Cyanide, Total (mg/L)	<0.002	<0.002	<0.002			
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	2.8	8.4	0.5 *			
	Total Carbon (mg/L)	6	17	<1			
	Total Organic Carbon (mg/L)	3	9	<1			
Metals	Calcium (Ca) (mg/L)	6.3	14.5	<0.5			
	Magnesium (Mg) (mg/L)	1.0	2.7	<0.1			
	Potassium (K) (mg/L)	0.8	1.1	<0.5			
	Sodium (Na) (mg/L)	4	11	<1			
	Sulfate (SO ₄) (mg/L)	2.8	4.4	<0.5			
Total Metals	Aluminum (Al) (mg/L)	0.0019	0.0077	<0.0003			
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	<0.00003			
	Arsenic (As) (mg/L)	0.00022	0.00165	<0.00003			
	Barium (Ba) (mg/L)	0.00689	0.0111	<0.00005			
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002			
	Boron (B) (mg/L)	0.003	0.008	<0.001			
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005			
	Calcium (Ca) (mg/L)	5.97	13.7	<0.02			
	Chromium (Cr) (mg/L)	<0.00006	0.00017	<0.00006			

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658705-1	L658705-2	L658705-3	L658705-4	L658705-5
		Description	FRESH WATER	FRESH WATER	FRESH WATER	FRESH WATER	FRESH WATER
		Sampled Date	18-JUL-08	18-JUL-08	19-JUL-08	20-JUL-08	20-JUL-08
		Sampled Time	09:07	14:20	14:00	11:10	15:25
		Client ID	CONTROL	ML-SE	ML-W	DI-4	DI-1
Grouping	Analyte						
WATER							
Total Metals	Cobalt (Co) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
	Copper (Cu) (mg/L)	0.0008	0.0018	0.0007	0.0013	0.0018	
	Iron (Fe) (mg/L)	0.024	0.033	0.006	0.061	0.046	
	Lead (Pb) (mg/L)	<0.00005	<0.00005	0.00016	<0.00005	<0.00005	
	Magnesium (Mg) (mg/L)	0.778	0.922	0.775	0.913	0.728	
	Manganese (Mn) (mg/L)	0.0030	0.0033	0.0013	0.0034	0.0015	
	Mercury (Hg)-Total (mg/L)	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	
	Molybdenum (Mo) (mg/L)	0.00012	0.00010	0.00006	0.00013	<0.00006	
	Nickel (Ni) (mg/L)	0.00040	0.00025	0.00035	0.00073	0.00103	
	Potassium (K) (mg/L)	0.81	0.76	0.70	0.75	0.71	
	Selenium (Se) (mg/L)	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
	Sodium (Na) (mg/L)	3.30	3.14	2.96	4.00	2.14	
	Strontium (Sr) (mg/L)	0.0245	0.0319	0.0256	0.0341	0.0291	
	Thallium (Tl)-Total (mg/L)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
	Uranium (U) (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	Vanadium (V) (mg/L)	0.00014	0.00012	0.00010	0.00019	0.00008	
	Zinc (Zn) (mg/L)	<0.0008	<0.0008	<0.0008	<0.0008	0.0011	
Dissolved Metals	Aluminum (Al) (mg/L)	0.0021	0.0015	0.0017	0.0024	0.0024	
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
	Arsenic (As) (mg/L)	0.00037	0.00036	0.00016	0.00077	0.00045	
	Barium (Ba) (mg/L)	0.00668	0.00728	0.00662	0.00634	0.00615	
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
	Boron (B) (mg/L)	0.003	0.003	0.003	0.004	0.002	
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	Calcium (Ca) (mg/L)	7.02	7.68	5.24	6.24	5.10	
	Chromium (Cr) (mg/L)	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	
	Cobalt (Co) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
	Copper (Cu) (mg/L)	0.0008	0.0007	0.0008	0.0010	0.0012	
	Iron (Fe) (mg/L)	0.009	0.012	<0.005	0.025	0.021	
	Lead (Pb) (mg/L)	0.00010	0.00007	<0.00005	<0.00005	<0.00005	
	Magnesium (Mg) (mg/L)	0.765	0.936	0.787	0.890	0.720	
	Manganese (Mn) (mg/L)	0.0006	0.0009	0.0008	0.0010	0.0011	
	Mercury (Hg)-Dissolved (mg/L)	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	
	Molybdenum (Mo) (mg/L)	0.00012	0.00010	0.00006	0.00012	<0.00006	
	Nickel (Ni) (mg/L)	0.00040	0.00030	0.00036	0.00072	0.00102	
	Potassium (K) (mg/L)	0.79	0.76	0.72	0.73	0.72	
	Selenium (Se) (mg/L)	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L658705-6 FRESH WATER 19-JUL-08 12:30 ML-MR	L658705-7 FRESH WATER 20-JUL-08 09:30 NEW-1	L658705-8 FRESH WATER 20-JUL-08 18:00 E9-8		
Grouping	Analyte						
WATER							
Total Metals	Cobalt (Co) (mg/L)	<0.0001	0.0002	<0.0001			
	Copper (Cu) (mg/L)	0.0007	0.0014	<0.0006			
	Iron (Fe) (mg/L)	0.010	0.587	<0.005			
	Lead (Pb) (mg/L)	<0.00005	<0.00005	<0.00005			
	Magnesium (Mg) (mg/L)	0.865	2.27	<0.004			
	Manganese (Mn) (mg/L)	0.0018	0.0099	<0.0001			
	Mercury (Hg)-Total (mg/L)	<0.00002	<0.00002	<0.00002			
	Molybdenum (Mo) (mg/L)	<0.00006	0.00025	<0.00006			
	Nickel (Ni) (mg/L)	0.00030	0.00183	<0.00006			
	Potassium (K) (mg/L)	0.76	1.03	<0.02			
	Selenium (Se) (mg/L)	<0.0001	0.0002	<0.0001			
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001			
	Sodium (Na) (mg/L)	3.22	9.69	<0.005			
	Strontium (Sr) (mg/L)	0.0280	0.0702	<0.0001			
	Thallium (Tl)-Total (mg/L)	<0.00003	<0.00003	<0.00003			
	Uranium (U) (mg/L)	<0.00005	0.00006	<0.00005			
	Vanadium (V) (mg/L)	0.00011	0.00040	<0.00005			
	Zinc (Zn) (mg/L)	<0.0008	<0.0008	<0.0008			
Dissolved Metals	Aluminum (Al) (mg/L)	0.0016	0.0037	<0.0003			
	Antimony (Sb) (mg/L)	<0.00003	<0.00003	<0.00003			
	Arsenic (As) (mg/L)	0.00020	0.00141	<0.00003			
	Barium (Ba) (mg/L)	0.00691	0.0108	<0.00005			
	Beryllium (Be) (mg/L)	<0.0002	<0.0002	<0.0002			
	Boron (B) (mg/L)	0.003	0.009	<0.001			
	Cadmium (Cd) (mg/L)	<0.00005	<0.00005	<0.00005			
	Calcium (Ca) (mg/L)	5.96	13.8	<0.02			
	Chromium (Cr) (mg/L)	<0.00006	0.00015	<0.00006			
	Cobalt (Co) (mg/L)	<0.0001	0.0002	<0.0001			
	Copper (Cu) (mg/L)	<0.0006	0.0013	<0.0006			
	Iron (Fe) (mg/L)	<0.005	0.269	<0.005			
	Lead (Pb) (mg/L)	<0.00005	<0.00005	<0.00005			
	Magnesium (Mg) (mg/L)	0.853	2.23	<0.004			
	Manganese (Mn) (mg/L)	0.0011	0.0087	<0.0001			
	Mercury (Hg)-Dissolved (mg/L)	<0.00002	<0.00002	<0.00002			
	Molybdenum (Mo) (mg/L)	0.00007	0.00025	<0.00006			
	Nickel (Ni) (mg/L)	0.00032	0.00180	<0.00006			
	Potassium (K) (mg/L)	0.75	1.04	<0.02			
	Selenium (Se) (mg/L)	<0.0001	0.0002	<0.0001			
	Silver (Ag) (mg/L)	<0.0001	<0.0001	<0.0001			

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658705-1	L658705-2	L658705-3	L658705-4	L658705-5
		Description	FRESH WATER	FRESH WATER	FRESH WATER	FRESH WATER	FRESH WATER
		Sampled Date	18-JUL-08	18-JUL-08	19-JUL-08	20-JUL-08	20-JUL-08
		Sampled Time	09:07	14:20	14:00	11:10	15:25
		Client ID	CONTROL	ML-SE	ML-W	DI-4	DI-1
Grouping	Analyte						
WATER							
Dissolved Metals	Sodium (Na) (mg/L)	3.25	3.16	3.07	3.97	2.10	
	Strontium (Sr) (mg/L)	0.0240	0.0322	0.0255	0.0333	0.0289	
	Thallium (Tl)-Dissolved (mg/L)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	
	Uranium (U) (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
	Vanadium (V) (mg/L)	0.00012	0.00013	0.00010	0.00012	0.00007	
	Zinc (Zn) (mg/L)	0.0011	0.0009	<0.0008	<0.0008	<0.0008	
Plant Pigments	Chlorophyll a (ug/L)	<1	<1	<1	<1	<1	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L658705-6	L658705-7	L658705-8		
		Description	FRESH WATER	FRESH WATER	FRESH WATER		
		Sampled Date	19-JUL-08	20-JUL-08	20-JUL-08		
		Sampled Time	12:30	09:30	18:00		
		Client ID	ML-MR	NEW-1	E9-8		
Grouping	Analyte						
WATER							
Dissolved Metals	Sodium (Na) (mg/L)	3.20	9.51	<0.005			
	Strontium (Sr) (mg/L)	0.0280	0.0699	<0.0001			
	Thallium (Tl)-Dissolved (mg/L)	<0.00003	<0.00003	<0.00003			
	Uranium (U) (mg/L)	<0.00005	0.00006	<0.00005			
	Vanadium (V) (mg/L)	0.00010	0.00038	<0.00005			
	Zinc (Zn) (mg/L)	<0.0008	<0.0008	<0.0008			
Plant Pigments	Chlorophyll a (ug/L)	<1	<1	<1			

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

Reference Information

Additional Comments for Sample Listed:

Sample Number	Matrix	Report Remarks	Sample Comment:
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Qualifiers for Individual Samples Listed:

Sample Number	Client Sample ID	Qualifier	Description
L658705-8	E9-8	SFP	Sample was Filtered and Preserved at the laboratory - DOC

Qualifiers for Individual Parameters Listed:

Qualifier	Description
RRV	Reported Result Verified By Repeat Analysis
SFPL	Sample was Filtered and Preserved at the laboratory

Samples with Qualifiers for Individual Parameters as listed above:

Sample Number	Client Sample ID	Parameters	Qualifier
L658705-1	CONTROL	Total Kjeldahl Nitrogen	RRV
L658705-8	E9-8	Dissolved Organic Carbon	SFPL

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
C-DIS-ORG-LOW-ED	Water	Dissolved Organic Carbon	APHA 5310 B-Instrumental

C-INORG-ORG-SK	Soil	Inorg/Org Carbon calc needs C-TOT-LECO	SSSA (1996) P455-456
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When carbonates are decomposed with acid in an open system, carbon dioxide is released to the atmosphere. The decrease in sample weight resulting from CO₂ loss is proportional to the carbonate content of the soil.

Reference:

Loeppert, R.H. and Suarez, D.L. 1996. Gravimetric Method for Loss of Carbon Dioxide. P. 455-456 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

C-TOT-ED	Water	Total Carbon	APHA 5310 B-Instrumental
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C-TOT-LECO-SK	Soil	Total Carbon by combustion method	SSSA (1996) - Combustion Instrument
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The sample is introduced into a quartz tube where it undergoes combustion at 900 °C in the presence of oxygen.

Combustion gases are first carried through a catalyst bed in the bottom of the combustion tube, where oxidation is completed and then carried through a reducing agent (copper), where the nitrogen oxides are reduced to elemental nitrogen.

This mixture of N₂, CO₂, and H₂O is then passed through an absorber column containing magnesium perchlorate to remove water. N₂ and CO₂ gases are then separated in a gas chromatographic column and detected by thermal conductivity.

Reference:

Nelson, D.W. and Sommers, L.E. 1996. Total Carbon, organic carbon and organic matter. P. 961-1010 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

C-TOT-ORG-ED	Water	Total Organic Carbon	APHA 5310 B-Instrumental
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C-TOT-ORG-LECO-SK	Soil	Organic Carbon by combustion method	SSSA (1996) p. 973
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Total Organic Carbon (C-TOT-ORG-LECO-SK, C-TOT-ORG-SK)

Total C and inorganic C are determined on separate samples. The total C is determined by combustion and thermal conductivity detection, while inorganic C is determined by weight loss after addition of hydrochloric acid. Organic C is calculated by the difference between these two determinations.

Reference for Total C:

Nelson, D.W. and Sommers, L.E. 1996. Total Carbon, organic carbon and organic matter. P. 961-1010 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

Reference for Inorganic C:

Loeppert, R.H. and Suarez, D.L. 1996. Gravimetric Method for Loss of Carbon Dioxide. P. 455-456 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
CHLOROPHYLL A-FM			
	Water	Chlorophyll-a	APHA 10200H, 1998
CL-ED			
	Water	Chloride (Cl)	APHA 4500 Cl E-Colorimetry
CN-TOT-WP			
	Water	Cyanide, Total	APHA 4500 CN-O
Total Cyanide in Water: Simple cyanides are converted to hydrogen cyanide (HCN) by distillation. Complex cyanides are not easily decomposed. Low power UV radiation is used to break down organic, metallic and alkali complexed compounds to free cyanide. The disillation step isolates HCN from simple cyanides under specific acidic conditions. The liberated HCN is converted to cyanogen chloride with chloramine-T. This further reacts with barbituric acid and isonicotinic acid to form a highly coloured complex.			
CN-TOT-WP			
	Soil	Cyanide, Total	EPA 9013A
Total Cyanides in Soil, Vegetation and Tissue: The sample is extracted with a strong base for 16 hours, then filtered. The filtrate is then analyzed for total cyanide as follows: Simple cyanides are converted to hydrogen cyanide (HCN) by distillation. Complex cyanides are not easily decomposed. Low power UV radiation is used to break down organic, metallic and alkali complexed compounds to free cyanide. The distillation step isolates HCN from simple cyanides under specific acidic conditions. The liberated HCN is converted to cyanogen chloride with chloramine-T. This further reacts with barbituric acid and isonicotinic acid to form a highly coloured complex.			
ETL-ROUTINE-ICP-ED			
	Water	ICP metals and SO4 for routine water	APHA 3120 B-ICP-OES
HG-ULT-CV-ED			
	Water	Mercury (Hg)	EPA 245.7 / EPA 245.1
HG-ULT-DIS-CV-ED			
	Water	Mercury (Hg) - Dissolved	EPA 245.7 / EPA 245.1
IONBALANCE-ED			
	Water	Ion Balance Calculation	APHA 1030E
MET1-ULTRA-DIS-ED			
	Water	Ultra-Low Metals - Dissolved	EPA 6020
MET1-ULTRA-ED			
	Water	Ultra-Low Metals	EPA 6020
MET2-ULTRA-DIS-ED			
	Water	Major Metals - Dissolved	EPA 200.7
MET2-ULTRA-ED			
	Water	Major Metals	EPA 200.7
METAL-CCME-ED			
	Soil	Metals in Soil - CCME List	EPA 6020
N-TOT-LECO-SK			
	Soil	Total Nitrogen by combustion method	SSSA (1996) p. 973-974
The sample is introduced into a quartz tube where it undergoes combustion at 900 C in the presence of oxygen. Combustion gases are first carried through a catalyst bed in the bottom of the combustion tube, where oxidation is completed and then carried through a reducing agent (copper), where the nitrogen oxides are reduced to elemental nitrogen. This mixture of N2, CO2, and H2O is then passed through an absorber column containing magnesium perchlorate to remove water. N2 and CO2 gases are then separated in a gas chromatographic column and detected by thermal conductivity.			
Reference: Bremner, J.M. 1996. Nitrogen - Total (Dumas Methods). P. 1088 In: J.M. Bartels et al. (ed.) Methods of soil analysis: Part 3 Chemical methods. (3rd ed.) ASA and SSSA, Madison, WI. Book series no. 5			
N-TOTKJ-ED			
	Water	Total Kjeldahl Nitrogen	APHA 4500N-C -Dig.-Auto-Colorimetry
N2N3-ED			
	Water	Nitrate+Nitrite-N	APHA 4500 NO3-H - COLORIMETRY
NH4-ED			
	Water	Ammonia-N	APHA4500NH3F Colorimetry
NO2-ED			
	Water	Nitrite-N	APHA 4500 NO2B-Colorimetry
NO3-ED			
	Water	Nitrate-N	APHA 4500 NO3H-Colorimetry
P-TOTAL-LOW-ED			
	Water	Phosphorus, Total	APHA 4500 P B,E-Auto-Colorimetry
P-TOTALDIS-LOW-ED			
	Water	Phosphorus, Dissolved	APHA 4500 P B,E - AUTO-COLORIMETRY
PH/EC/ALK-ED			
	Water	pH, Conductivity and Total Alkalinity	APHA 4500-H, 2510, 2320

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
PO4-LOW-ED	Water	Orthophosphate (PO4-P)	APHA 4500 P B,E-Auto-Colorimetry

PSA-1-SK Soil Particle Size Analysis: Hydrometer CSSS (1993) P.508-509

The hydrometer method is based on Stokes' Law which relates the radius of soil particles to the velocity of their sedimentation. Air-dried soil is wetted with a dispersing agent and then mixed with water in a sedimentation cylinder. The soil is allowed to settle and particle density readings(g/L) are taken after 40 seconds and 6 hours. These readings correspond to silt + clay and clay content respectively. Sand content is calculated by difference.

Reference:

Carter, M.R., 1993. Soil sampling and methods of analysis. Can. Soc. Soil Sci. Ottawa Ont. 508-509

Kalra, Y.P., Maynard, D.G. 1991. Methods manual for forest soil and plant analysis. Forestry Canada. p. 42-45.

SOLIDS-TDS-ED	Water	Total Dissolved Solids	APHA 2540 C
SOLIDS-TOTSUS-ED	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
TL-ULTRA-DIS-ED	Water	Thallium (Tl)-Dissolved	EPA 6020
TL-ULTRA-ED	Water	Thallium (Tl)	EPA 6020

**** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies. The last two letters of the above ALS Test Code column indicate the laboratory that performed analytical analysis for that test. Refer to the list below:**

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
ED	ALS LABORATORY GROUP - EDMONTON, ALBERTA, CANADA	FM	ALS LABORATORY GROUP - FORT MCMURRAY, ALBERTA, CANADA

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Analytical Method Reference(Based On)
SK		ALS LABORATORY GROUP - SASKATOON, SASKATCHEWAN, CANADA	WP ALS LABORATORY GROUP - WINNIPEG, MANITOBA, CANADA

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

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.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.



Environmental Division

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 1 of 17

Client: GOLDER ASSOCIATES LTD
195 PEMBERTON AVE
NORTH VANCOUVER BC V7P 2R4
KERRIE SERBEN

Contact:

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-DIS-ORG-LOW-ED Water								
Batch	R696995							
WG804130-1	LCS							
Dissolved Organic Carbon			93		%		88-108	21-JUL-08
WG804130-4	LCS							
Dissolved Organic Carbon			112		%		63-138	21-JUL-08
WG804130-2	MB							
Dissolved Organic Carbon			<0.5		mg/L		0.5	21-JUL-08
C-TOT-ED Water								
Batch	R698304							
WG805409-5	DUP	L658705-8						
Total Carbon		<1	<1	RPD-NA	mg/L	N/A	16	23-JUL-08
WG805409-2	LCS							
Total Carbon			102		%		90-109	22-JUL-08
WG805409-1	MB							
Total Carbon			<1		mg/L		1	22-JUL-08
WG805409-4	MS	L658105-3						
Total Carbon			105		%		71-123	22-JUL-08
WG805409-6	MS	L658705-8						
Total Carbon			109		%		71-123	23-JUL-08
WG805409-8	MS	L660317-11						
Total Carbon			N/A	MS-B	%		-	25-JUL-08
C-TOT-ORG-ED Water								
Batch	R696995							
WG804130-30	DUP	L658705-8						
Total Organic Carbon		<1	<1	RPD-NA	mg/L	N/A	10	27-JUL-08
WG804130-1	LCS							
Total Organic Carbon			93		%		88-108	21-JUL-08
WG804130-4	LCS							
Total Organic Carbon			112		%		94-135	21-JUL-08
WG804130-2	MB							
Total Organic Carbon			<1		mg/L		1	21-JUL-08
WG804130-3	MB							
Total Organic Carbon			<1		mg/L		1	21-JUL-08
WG804130-11	MS	L654945-5						
Total Organic Carbon			102		%		77-116	22-JUL-08
WG804130-13	MS	L657417-1						
Total Organic Carbon			95		%		77-116	22-JUL-08
WG804130-15	MS	L657452-4						
Total Organic Carbon			105		%		77-116	23-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 2 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-TOT-ORG-ED		Water						
Batch	R696995							
WG804130-17 MS		L658040-1						
Total Organic Carbon			97		%		77-116	23-JUL-08
WG804130-19 MS		L658105-3						
Total Organic Carbon			103		%		77-116	24-JUL-08
WG804130-21 MS		L656178-6						
Total Organic Carbon			104		%		77-116	24-JUL-08
WG804130-25 MS		L658154-6						
Total Organic Carbon			94		%		77-116	25-JUL-08
WG804130-27 MS		L661085-1						
Total Organic Carbon			99		%		77-116	26-JUL-08
WG804130-29 MS		L655460-6						
Total Organic Carbon			106		%		77-116	25-JUL-08
WG804130-31 MS		L658705-8						
Total Organic Carbon			101		%		77-116	27-JUL-08
WG804130-33 MS		L658808-13						
Total Organic Carbon			101		%		77-116	27-JUL-08
WG804130-7 MS		L656683-22						
Total Organic Carbon			106		%		77-116	21-JUL-08
WG804130-9 MS		L656927-1						
Total Organic Carbon			102		%		77-116	22-JUL-08
CHLOROPHYLL A-FM		Water						
Batch	R699667							
WG806655-2 LCS								
Chlorophyll a			124		%		63-138	25-JUL-08
WG806655-1 MB								
Chlorophyll a			<1		ug/L		1	25-JUL-08
Batch	R700256							
WG808199-3 DUP		L658705-8						
Chlorophyll a		<1	<1	RPD-NA	ug/L	N/A	33	28-JUL-08
WG808199-2 LCS								
Chlorophyll a			123		%		63-138	28-JUL-08
WG808199-1 MB								
Chlorophyll a			<1		ug/L		1	28-JUL-08
CL-ED		Water						
Batch	R698270							
WG805459-2 LCS								
Chloride (Cl)			103		%		94-109	23-JUL-08
WG805459-3 LCS								

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 3 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-ED		Water						
Batch	R698270							
WG805459-3	LCS							
Chloride (Cl)			100		%		93-113	23-JUL-08
WG805459-1	MB							
Chloride (Cl)			<1		mg/L		1	23-JUL-08
WG805459-11	MS	L658719-8						
Chloride (Cl)			98		%		87-117	23-JUL-08
WG805459-13	MS	L658737-3						
Chloride (Cl)			110		%		87-117	23-JUL-08
WG805459-5	MS	L658692-24						
Chloride (Cl)			95		%		87-117	23-JUL-08
WG805459-7	MS	L658808-13						
Chloride (Cl)			105		%		87-117	23-JUL-08
WG805459-9	MS	L658688-1						
Chloride (Cl)			100		%		87-117	23-JUL-08
CN-TOT-WP		Water						
Batch	R701958							
WG810211-3	CCV							
Cyanide, Total			100		%		90-110	29-JUL-08
WG810211-2	CVS							
Cyanide, Total			93		%		80-120	29-JUL-08
WG810211-5	IRM	61-CN						
Cyanide, Total			89.32		%		75-125	29-JUL-08
WG810211-1	MB							
Cyanide, Total			<0.002		mg/L		0.002	29-JUL-08
ETL-ROUTINE-ICP-ED		Water						
Batch	R699163							
WG806659-3	CRM	ION-915_WATER						
Calcium (Ca)			104		%		96-116	24-JUL-08
Magnesium (Mg)			107		%		91-113	24-JUL-08
Sulfate (SO4)			98		%		87-118	24-JUL-08
WG806659-2	LCS							
Calcium (Ca)			104		%		86-106	24-JUL-08
Potassium (K)			100		%		86-106	24-JUL-08
Magnesium (Mg)			107		%		88-108	24-JUL-08
Sodium (Na)			102		%		86-106	24-JUL-08
WG806659-1	MB							
Calcium (Ca)			<0.5		mg/L		2.5	24-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 4 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ETL-ROUTINE-ICP-ED		Water						
Batch	R699163							
WG806659-1	MB							
Potassium (K)			<0.5		mg/L		2.5	24-JUL-08
Magnesium (Mg)			<0.1		mg/L		0.5	24-JUL-08
Sodium (Na)			<1		mg/L		5	24-JUL-08
Sulfate (SO4)			<0.5		mg/L		2.5	24-JUL-08
WG806659-5	MS	L659207-2						
Calcium (Ca)			101		%		88-116	24-JUL-08
Potassium (K)			93		%		83-115	24-JUL-08
Magnesium (Mg)			105		%		91-117	24-JUL-08
Sodium (Na)			97		%		81-116	24-JUL-08
Sulfate (SO4)			90		%		82-111	24-JUL-08
WG806659-7	MS	L659396-5						
Calcium (Ca)			102		%		88-116	24-JUL-08
Potassium (K)			97		%		83-115	24-JUL-08
Magnesium (Mg)			105		%		91-117	24-JUL-08
Sodium (Na)			102		%		81-116	24-JUL-08
Sulfate (SO4)			90		%		82-111	24-JUL-08
WG806659-9	MS	L659729-1						
Calcium (Ca)			102		%		88-116	24-JUL-08
Potassium (K)			97		%		83-115	24-JUL-08
Magnesium (Mg)			106		%		91-117	24-JUL-08
Sodium (Na)			109		%		81-116	24-JUL-08
Sulfate (SO4)			100		%		82-111	24-JUL-08
HG-ULT-CV-ED		Water						
Batch	R700559							
WG808414-2	LCS							
Mercury (Hg)-Total			90		%		63-135	28-JUL-08
WG808414-3	LCSD	WG808414-2						
Mercury (Hg)-Total		90	94		%	4.9	20	28-JUL-08
WG808414-1	MB							
Mercury (Hg)-Total			<0.00002		mg/L		0.00002	28-JUL-08
WG808414-5	MS	L658705-7						
Mercury (Hg)-Total			94		%		71-131	28-JUL-08
HG-ULT-DIS-CV-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 5 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-ULT-DIS-CV-ED								
Water								
Batch	R700559							
WG808414-4	DUP	L658705-7						
Mercury (Hg)-Dissolved		<0.00002	<0.00002	RPD-NA	mg/L	N/A	16	28-JUL-08
WG808414-2	LCS							
Mercury (Hg)-Dissolved			90		%		63-135	28-JUL-08
WG808414-3	LCSD	WG808414-2						
Mercury (Hg)-Dissolved		90	94		%	4.9	20	28-JUL-08
WG808414-1	MB							
Mercury (Hg)-Dissolved			<0.00002		mg/L		0.00002	28-JUL-08
MET1-ULTRA-DIS-ED								
Water								
Batch	R701819							
WG808814-2	CRM	1643E_WATER						
Aluminum (Al)			106		%		85-125	30-JUL-08
Arsenic (As)			96		%		88-109	30-JUL-08
Boron (B)			95		%		80-116	30-JUL-08
Barium (Ba)			93		%		88-109	30-JUL-08
Beryllium (Be)			95		%		74-116	30-JUL-08
Calcium (Ca)			91		%		82-106	30-JUL-08
Cadmium (Cd)			102		%		93-112	30-JUL-08
Cobalt (Co)			100		%		90-110	30-JUL-08
Chromium (Cr)			97		%		83-118	30-JUL-08
Copper (Cu)			98		%		89-112	30-JUL-08
Potassium (K)			92		%		88-120	30-JUL-08
Magnesium (Mg)			90		%		86-109	30-JUL-08
Manganese (Mn)			97		%		81-120	30-JUL-08
Molybdenum (Mo)			98		%		91-112	30-JUL-08
Sodium (Na)			92		%		86-105	30-JUL-08
Nickel (Ni)			99		%		88-110	30-JUL-08
Lead (Pb)			102		%		89-114	30-JUL-08
Antimony (Sb)			96		%		89-112	30-JUL-08
Selenium (Se)			96		%		76-112	30-JUL-08
Strontium (Sr)			100		%		87-109	30-JUL-08
Vanadium (V)			95		%		89-112	30-JUL-08
Zinc (Zn)			99		%		84-129	30-JUL-08
WG808814-1	MB							
Silver (Ag)			<0.0001		mg/L		0.0005	30-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 6 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-DIS-ED		Water						
Batch	R701819							
WG808814-1	MB							
Aluminum (Al)			<0.0003		mg/L		0.0015	30-JUL-08
Arsenic (As)			<0.00003		mg/L		0.00015	30-JUL-08
Boron (B)			<0.001		mg/L		0.005	30-JUL-08
Barium (Ba)			<0.00005		mg/L		0.00025	30-JUL-08
Beryllium (Be)			<0.0002		mg/L		0.0002	30-JUL-08
Calcium (Ca)			<0.02		mg/L		0.02	30-JUL-08
Cadmium (Cd)			<0.00005		mg/L		0.00025	30-JUL-08
Cobalt (Co)			<0.0001		mg/L		0.0005	30-JUL-08
Chromium (Cr)			<0.00006		mg/L		0.0003	30-JUL-08
Copper (Cu)			<0.0006		mg/L		0.003	30-JUL-08
Potassium (K)			<0.02		mg/L		0.1	30-JUL-08
Magnesium (Mg)			<0.004		mg/L		0.02	30-JUL-08
Manganese (Mn)			<0.0001		mg/L		0.0005	30-JUL-08
Molybdenum (Mo)			<0.00006		mg/L		0.0003	30-JUL-08
Sodium (Na)			<0.005		mg/L		0.025	30-JUL-08
Nickel (Ni)			<0.00006		mg/L		0.0003	30-JUL-08
Lead (Pb)			<0.00005		mg/L		0.00025	30-JUL-08
Antimony (Sb)			<0.00003		mg/L		0.00015	30-JUL-08
Selenium (Se)			<0.0001		mg/L		0.0005	30-JUL-08
Strontium (Sr)			<0.0001		mg/L		0.0005	30-JUL-08
Uranium (U)			<0.00005		mg/L		0.00025	30-JUL-08
Vanadium (V)			<0.00005		mg/L		0.00025	30-JUL-08
Zinc (Zn)			<0.0008		mg/L		0.004	30-JUL-08
MET1-ULTRA-ED		Water						
Batch	R701819							
WG808814-2	CRM	1643E_WATER						
Silver (Ag)			84		%		80-108	30-JUL-08
Aluminum (Al)			106		%		90-122	30-JUL-08
Arsenic (As)			96		%		84-105	30-JUL-08
Boron (B)			95		%		80-116	30-JUL-08
Barium (Ba)			93		%		88-109	30-JUL-08
Beryllium (Be)			95		%		77-110	30-JUL-08
Calcium (Ca)			91		%		82-106	30-JUL-08
Cadmium (Cd)			102		%		87-109	30-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 7 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-ED		Water						
Batch	R701819							
WG808814-2	CRM	1643E_WATER						
Cadmium (Cd)			102		%		87-109	30-JUL-08
Cobalt (Co)			100		%		90-110	30-JUL-08
Chromium (Cr)			97		%		84-118	30-JUL-08
Copper (Cu)			98		%		89-112	30-JUL-08
Potassium (K)			92		%		88-119	30-JUL-08
Magnesium (Mg)			90		%		86-109	30-JUL-08
Manganese (Mn)			97		%		81-120	30-JUL-08
Molybdenum (Mo)			98		%		88-111	30-JUL-08
Sodium (Na)			92		%		86-105	30-JUL-08
Nickel (Ni)			99		%		88-110	30-JUL-08
Lead (Pb)			102		%		89-110	30-JUL-08
Antimony (Sb)			96		%		86-108	30-JUL-08
Selenium (Se)			96		%		76-112	30-JUL-08
Strontium (Sr)			100		%		87-109	30-JUL-08
Vanadium (V)			95		%		87-109	30-JUL-08
Zinc (Zn)			99		%		65-133	30-JUL-08
WG808814-8	DUP	L658705-5						
Silver (Ag)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	33	30-JUL-08
Aluminum (Al)		0.0038	0.0037		mg/L	3.5	20	30-JUL-08
Arsenic (As)		0.00052	0.00054		mg/L	2.7	11	30-JUL-08
Boron (B)		0.002	0.002	J	mg/L	0.000	0.004	30-JUL-08
Barium (Ba)		0.00613	0.00628		mg/L	2.3	10	30-JUL-08
Beryllium (Be)		<0.0002	<0.0002	RPD-NA	mg/L	N/A	26	30-JUL-08
Calcium (Ca)		5.07	5.08		mg/L	0.13	9.8	30-JUL-08
Cadmium (Cd)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	31	30-JUL-08
Cobalt (Co)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	12	30-JUL-08
Chromium (Cr)		<0.00006	<0.00006	RPD-NA	mg/L	N/A	18	30-JUL-08
Copper (Cu)		0.0018	0.0018	J	mg/L	0.0000	0.0024	30-JUL-08
Potassium (K)		0.71	0.70		mg/L	0.61	9.8	30-JUL-08
Magnesium (Mg)		0.728	0.728		mg/L	0.029	9.8	30-JUL-08
Manganese (Mn)		0.0015	0.0015		mg/L	0.41	10	30-JUL-08
Molybdenum (Mo)		<0.00006	<0.00006	RPD-NA	mg/L	N/A	10	30-JUL-08
Sodium (Na)		2.14	2.15		mg/L	0.25	9.8	30-JUL-08
Nickel (Ni)		0.00103	0.00096		mg/L	7.0	10	30-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 8 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET1-ULTRA-ED		Water						
Batch	R701819							
WG808814-8	DUP	L658705-5						
Lead (Pb)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	12	30-JUL-08
Antimony (Sb)		<0.00003	<0.00003	RPD-NA	mg/L	N/A	10	30-JUL-08
Selenium (Se)		<0.0001	<0.0001	RPD-NA	mg/L	N/A	21	30-JUL-08
Strontium (Sr)		0.0291	0.0289		mg/L	0.74	20	30-JUL-08
Uranium (U)		<0.00005	<0.00005	RPD-NA	mg/L	N/A	10	30-JUL-08
Vanadium (V)		0.00008	0.00008	J	mg/L	0.00000	0.0002	30-JUL-08
Zinc (Zn)		0.0011	0.0010	J	mg/L	0.0001	0.0032	30-JUL-08
WG808814-1	MB							
Silver (Ag)			<0.0001		mg/L		0.0005	30-JUL-08
Aluminum (Al)			<0.0003		mg/L		0.0015	30-JUL-08
Arsenic (As)			<0.00003		mg/L		0.00015	30-JUL-08
Boron (B)			<0.001		mg/L		0.005	30-JUL-08
Barium (Ba)			<0.00005		mg/L		0.00025	30-JUL-08
Beryllium (Be)			<0.0002		mg/L		0.001	30-JUL-08
Calcium (Ca)			<0.02		mg/L		0.1	30-JUL-08
Cadmium (Cd)			<0.00005		mg/L		0.00025	30-JUL-08
Cobalt (Co)			<0.0001		mg/L		0.0005	30-JUL-08
Chromium (Cr)			<0.00006		mg/L		0.0003	30-JUL-08
Copper (Cu)			<0.0006		mg/L		0.003	30-JUL-08
Potassium (K)			<0.02		mg/L		0.1	30-JUL-08
Magnesium (Mg)			<0.004		mg/L		0.02	30-JUL-08
Manganese (Mn)			<0.0001		mg/L		0.0005	30-JUL-08
Molybdenum (Mo)			<0.00006		mg/L		0.0003	30-JUL-08
Sodium (Na)			<0.005		mg/L		0.025	30-JUL-08
Nickel (Ni)			<0.00006		mg/L		0.0003	30-JUL-08
Lead (Pb)			<0.00005		mg/L		0.00025	30-JUL-08
Antimony (Sb)			<0.00003		mg/L		0.00015	30-JUL-08
Selenium (Se)			<0.0001		mg/L		0.0005	30-JUL-08
Strontium (Sr)			<0.0001		mg/L		0.0005	30-JUL-08
Uranium (U)			<0.00005		mg/L		0.00025	30-JUL-08
Vanadium (V)			<0.00005		mg/L		0.00025	30-JUL-08
Zinc (Zn)			<0.0008		mg/L		0.004	30-JUL-08
MET2-ULTRA-DIS-ED		Water						

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 9 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET2-ULTRA-DIS-ED		Water						
Batch	R701822							
WG809943-10	DUP	L658705-8						
Iron (Fe)		<0.005	<0.005	RPD-NA	mg/L	N/A	9.8	31-JUL-08
WG809943-8	DUP	L658705-3						
Iron (Fe)		<0.005	<0.005	RPD-NA	mg/L	N/A	9.8	31-JUL-08
WG809943-1	MB							
Iron (Fe)			<0.005		mg/L		0.025	30-JUL-08
WG809943-11	MS	L658705-8						
Iron (Fe)			103		%		88-111	31-JUL-08
WG809943-9	MS	L658705-3						
Iron (Fe)			105		%		88-111	31-JUL-08
MET2-ULTRA-ED		Water						
Batch	R701822							
WG809943-1	MB							
Iron (Fe)			<0.005		mg/L		0.025	30-JUL-08
WG809943-3	MS	L658105-3						
Iron (Fe)			103		%		78-117	30-JUL-08
WG809943-5	MS	L658692-7						
Iron (Fe)			104		%		78-117	30-JUL-08
WG809943-7	MS	L658692-25						
Iron (Fe)			103		%		78-117	30-JUL-08
N-TOTKJ-ED		Water						
Batch	R698889							
WG806312-6	DUP	L658705-1						
Total Kjeldahl Nitrogen		0.3	0.3	J	mg/L	0.0	0.8	24-JUL-08
WG806312-2	LCS							
Total Kjeldahl Nitrogen			91		%		81-114	24-JUL-08
WG806312-3	LCS							
Total Kjeldahl Nitrogen			87		%		69-131	24-JUL-08
WG806312-4	LCS							
Total Kjeldahl Nitrogen			98		%		83-118	24-JUL-08
WG806312-1	MB							
Total Kjeldahl Nitrogen			<0.2		mg/L		0.2	24-JUL-08
N2N3-ED		Water						
Batch	R698423							
WG805413-4	DUP	L658705-4						
Nitrate+Nitrite-N		<0.1	<0.1	RPD-NA	mg/L	N/A	6.9	23-JUL-08
WG805413-3	LCS							

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 10 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
N2N3-ED	Water							
Batch	R698423							
WG805413-3	LCS							
Nitrate+Nitrite-N			93		%		87-113	23-JUL-08
WG805413-2	MB							
Nitrate+Nitrite-N			<0.1		mg/L		0.1	23-JUL-08
WG805413-10	MS	L658649-7						
Nitrate+Nitrite-N			87		%		84-118	23-JUL-08
WG805413-8	MS	L659025-1						
Nitrate+Nitrite-N			94		%		84-118	23-JUL-08
NH4-ED	Water							
Batch	R697972							
WG805219-5	DUP	L658705-3						
Ammonia-N		<0.05	<0.05	RPD-NA	mg/L	N/A	10	23-JUL-08
WG805219-2	LCS							
Ammonia-N			99		%		91-112	23-JUL-08
WG805219-1	MB							
Ammonia-N			<0.05		mg/L		0.05	23-JUL-08
WG805219-4	MS	L658129-4						
Ammonia-N			103		%		75-122	23-JUL-08
WG805219-6	MS	L659012-7						
Ammonia-N			112		%		75-122	23-JUL-08
NO2-ED	Water							
Batch	R698423							
WG805413-4	DUP	L658705-4						
Nitrite-N		<0.05	<0.05	RPD-NA	mg/L	N/A	6.5	23-JUL-08
WG805413-3	LCS							
Nitrite-N			98		%		94-114	23-JUL-08
WG805413-2	MB							
Nitrite-N			<0.05		mg/L		0.05	23-JUL-08
WG805413-10	MS	L658649-7						
Nitrite-N			97		%		88-113	23-JUL-08
WG805413-8	MS	L659025-1						
Nitrite-N			92		%		88-113	23-JUL-08
P-TOTAL-LOW-ED	Water							
Batch	R702508							
WG810066-3	LCS							
Phosphorus, Total			100		%		80-116	31-JUL-08
WG810066-2	MB						0.001	

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 11 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-TOTAL-LOW-ED		Water						
Batch	R702508							
WG810066-2	MB							
Phosphorus, Total			<0.001		mg/L		0.001	31-JUL-08
WG810066-10	MS	L658719-1						
Phosphorus, Total			104		%		70-130	31-JUL-08
WG810066-11	MS	L658719-3						
Phosphorus, Total			105		%		70-130	31-JUL-08
WG810066-8	MS	L655898-7						
Phosphorus, Total			105		%		70-130	31-JUL-08
WG810066-9	MS	L657288-7						
Phosphorus, Total			104		%		70-130	31-JUL-08
P-TOTALDIS-LOW-ED		Water						
Batch	R702508							
WG810066-3	LCS							
Phosphorus, Total Dissolved			100		%		80-116	31-JUL-08
WG810066-2	MB							
Phosphorus, Total Dissolved			<0.001		mg/L		0.001	31-JUL-08
PH/EC/ALK-ED		Water						
Batch	R698176							
WG804437-6	DUP	L658705-8						
pH		5.7	5.5	J	pH	0.2	0.2	23-JUL-08
Conductivity (EC)		3.9	3.0	J	uS/cm	0.9	10	23-JUL-08
Bicarbonate (HCO3)		<5	<5	RPD-NA	mg/L	N/A	26	23-JUL-08
Carbonate (CO3)		<5	<5	RPD-NA	mg/L	N/A	26	23-JUL-08
Hydroxide (OH)		<5	<5	RPD-NA	mg/L	N/A	26	23-JUL-08
Alkalinity, Total (as CaCO3)		<5	<5	RPD-NA	mg/L	N/A	6.5	23-JUL-08
WG804437-2	LCS							
Conductivity (EC)			104		%		94-106	23-JUL-08
WG804437-3	LCS							
pH			7.0		pH		6.9-7.1	23-JUL-08
WG804437-4	LCS							
Alkalinity, Total (as CaCO3)			103		%		90-110	23-JUL-08
WG804437-1	MB							
Bicarbonate (HCO3)			<5		mg/L		5	23-JUL-08
Carbonate (CO3)			<5		mg/L		5	23-JUL-08
Hydroxide (OH)			<5		mg/L		5	23-JUL-08
Alkalinity, Total (as CaCO3)			<5		mg/L		5	23-JUL-08

PO4-LOW-ED Water

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 12 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PO4-LOW-ED								
Water								
Batch	R698646							
WG805953-4	DUP	L658705-8						
Orthophosphate (PO4-P)		<0.001	<0.001	RPD-NA	mg/L	N/A	11	23-JUL-08
WG805953-3	LCS							
Orthophosphate (PO4-P)			98		%		91-108	23-JUL-08
WG805953-2	MB							
Orthophosphate (PO4-P)			<0.001		mg/L		0.001	23-JUL-08
WG805953-10	MS	L658692-2						
Orthophosphate (PO4-P)			96		%		82-116	23-JUL-08
WG805953-12	MS	L658692-17						
Orthophosphate (PO4-P)			91		%		82-116	23-JUL-08
WG805953-14	MS	L658692-31						
Orthophosphate (PO4-P)			95		%		82-116	23-JUL-08
WG805953-16	MS	L658719-1						
Orthophosphate (PO4-P)			98		%		82-116	23-JUL-08
WG805953-5	MS	L658705-8						
Orthophosphate (PO4-P)			99		%		82-116	23-JUL-08
WG805953-8	MS	L658688-3						
Orthophosphate (PO4-P)			96		%		82-116	23-JUL-08
SOLIDS-TDS-ED								
Water								
Batch	R698757							
WG805499-2	LCS							
Total Dissolved Solids			101		%		87-112	24-JUL-08
WG805499-1	MB							
Total Dissolved Solids			<5		mg/L		5	24-JUL-08
Batch	R700411							
WG807000-2	LCS							
Total Dissolved Solids			100		%		87-112	28-JUL-08
WG807000-1	MB							
Total Dissolved Solids			<5		mg/L		5	28-JUL-08
SOLIDS-TOTSUS-ED								
Water								
Batch	R698881							
WG806054-2	LCS							
Total Suspended Solids			106		%		82-111	24-JUL-08
WG806054-3	LCS							
Total Suspended Solids			94		%		82-111	24-JUL-08
WG806054-1	MB							
Total Suspended Solids			<3		mg/L		3	24-JUL-08
Water								

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 13 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
TL-ULTRA-DIS-ED		Water							
Batch	R701819								
WG808814-2	CRM	1643E_WATER							
Thallium (Tl)-Dissolved			102		%		79-126	30-JUL-08	
WG808814-1	MB								
Thallium (Tl)-Dissolved			<0.00003		mg/L		0.00015	30-JUL-08	
TL-ULTRA-ED		Water							
Batch	R701819								
WG808814-2	CRM	1643E_WATER							
Thallium (Tl)-Total			102		%		90-110	30-JUL-08	
WG808814-8	DUP	L658705-5							
Thallium (Tl)-Total			<0.00003	<0.00003	RPD-NA	mg/L	N/A	26	29-JUL-08
WG808814-1	MB								
Thallium (Tl)-Total			<0.00003		mg/L		0.00015	30-JUL-08	
C-INORG-ORG-SK		Soil							
Batch	R702823								
WG809329-1	DUP	L658705-24							
Inorganic Carbon		<0.1	<0.1	RPD-NA	%	N/A	12	31-JUL-08	
CaCO3 Equivalent		1.4	1.6	J	%	0.2	2.8	31-JUL-08	
WG809329-2	DUP	L658705-35							
Inorganic Carbon		<0.1	0.1	RPD-NA	%	N/A	12	31-JUL-08	
CaCO3 Equivalent		3.0	3.1	J	%	0.1	2.8	31-JUL-08	
WG809329-3	IRM	0.4%IC							
Inorganic Carbon			0.4		%		0.3-0.5	31-JUL-08	
C-TOT-LECO-SK		Soil							
Batch	R702750								
WG809332-1	DUP	L658705-29							
Total Carbon by Combustion		1.5	1.5	J	%	0.0	0.2	31-JUL-08	
WG809332-2	IRM	1.6%C							
Total Carbon by Combustion			1.5		%		1.3-1.7	31-JUL-08	
CN-TOT-WP		Soil							
Batch	R703933								
WG812457-3	CCV								
Cyanide, Total			103		%		90-110	01-AUG-08	
WG812457-2	CVS								
Cyanide, Total			107		%		80-120	01-AUG-08	
METAL-CCME-ED		Soil							

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 14 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
METAL-CCME-ED		Soil						
Batch	R700376							
WG807713-2	CRM	2702_SOIL						
Silver (Ag)			125		%		47-158	28-JUL-08
Arsenic (As)			98		%		92-111	28-JUL-08
Barium (Ba)			108		%		90-123	28-JUL-08
Beryllium (Be)			92		%		80-126	28-JUL-08
Cadmium (Cd)			101		%		87-117	28-JUL-08
Cobalt (Co)			105		%		90-120	28-JUL-08
Chromium (Cr)			97		%		86-119	28-JUL-08
Copper (Cu)			105		%		91-118	28-JUL-08
Mercury (Hg)			152		%		37-185	28-JUL-08
Molybdenum (Mo)			100		%		87-124	28-JUL-08
Nickel (Ni)			103		%		89-121	28-JUL-08
Lead (Pb)			98		%		90-126	28-JUL-08
Selenium (Se)			102		%		78-123	28-JUL-08
Tin (Sn)			117		%		73-139	28-JUL-08
Uranium (U)			92		%		89-128	28-JUL-08
Vanadium (V)			100		%		86-116	28-JUL-08
Zinc (Zn)			92		%		81-112	28-JUL-08
WG807713-1	MB							
Silver (Ag)			<1		mg/kg		5	28-JUL-08
Arsenic (As)			<0.2		mg/kg		1	28-JUL-08
Barium (Ba)			<5		mg/kg		25	28-JUL-08
Beryllium (Be)			<1		mg/kg		1	28-JUL-08
Cadmium (Cd)			<0.5		mg/kg		2.5	28-JUL-08
Cobalt (Co)			<1		mg/kg		5	28-JUL-08
Chromium (Cr)			1.4		mg/kg		2.5	28-JUL-08
Copper (Cu)			<2		mg/kg		10	28-JUL-08
Mercury (Hg)			<0.05		mg/kg		0.25	28-JUL-08
Molybdenum (Mo)			<1		mg/kg		5	28-JUL-08
Nickel (Ni)			<2		mg/kg		10	28-JUL-08
Lead (Pb)			<5		mg/kg		25	28-JUL-08
Antimony (Sb)			<0.2		mg/kg		1	28-JUL-08
Selenium (Se)			<0.2		mg/kg		1	28-JUL-08
Tin (Sn)			<5		mg/kg		25	28-JUL-08
Thallium (Tl)			<1		mg/kg		5	28-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 15 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
METAL-CCME-ED		Soil						
Batch	R700376							
WG807713-1	MB							
Uranium (U)			<2		mg/kg		2	28-JUL-08
Vanadium (V)			<1		mg/kg		5	28-JUL-08
Zinc (Zn)			<10		mg/kg		50	28-JUL-08
WG807713-4	MS	L660044-1						
Silver (Ag)			20		%		18-114	28-JUL-08
Arsenic (As)			101		%		91-114	28-JUL-08
Barium (Ba)			143	E	%		56-151	28-JUL-08
Beryllium (Be)			94		%		82-121	28-JUL-08
Cadmium (Cd)			102		%		92-117	28-JUL-08
Cobalt (Co)			99		%		87-112	28-JUL-08
Chromium (Cr)			102		%		85-117	28-JUL-08
Copper (Cu)			99		%		80-116	28-JUL-08
Mercury (Hg)			98		%		48-138	28-JUL-08
Molybdenum (Mo)			104		%		91-122	28-JUL-08
Nickel (Ni)			99		%		83-112	28-JUL-08
Lead (Pb)			96		%		83-119	28-JUL-08
Antimony (Sb)			102		%		90-118	28-JUL-08
Selenium (Se)			101		%		90-120	28-JUL-08
Tin (Sn)			101		%		92-118	28-JUL-08
Thallium (Tl)			100		%		83-126	28-JUL-08
Uranium (U)			93		%		86-117	28-JUL-08
Vanadium (V)			103		%		84-117	28-JUL-08
Zinc (Zn)			98		%		85-118	28-JUL-08
MOISTURE-WP		Soil						
Batch	R722802							
WG834625-3	DUP	L658705-36						
% Moisture		74	75		%	1.3	39	13-SEP-08
N-TOT-LECO-SK		Soil						
Batch	R702544							
WG809345-2	CRM	SO2_SOIL						
Total Nitrogen by LECO			0.26		%		0.19-0.26	31-JUL-08
WG809345-1	DUP	L658705-27						
Total Nitrogen by LECO		0.20	0.19	J	%	0.00	0.068	31-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 16 of 17

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PSA-1-SK		Soil						
Batch	R703175							
WG809308-2	DUP	L658705-14						
% Sand (2.0mm - 0.05mm)		58	60	J	%	2	3.1	01-AUG-08
% Silt (0.05mm - 2um)		37	36	J	%	1	3.1	01-AUG-08
% Clay (<2um)		5	4	J	%	1	4	01-AUG-08
WG809308-3	DUP	L658705-36						
% Sand (2.0mm - 0.05mm)		48	47	J	%	1	3.1	01-AUG-08
% Silt (0.05mm - 2um)		47	47	J	%	0	3.1	01-AUG-08
% Clay (<2um)		6	6	J	%	0	4	01-AUG-08
WG809308-4	IRM	FARM98						
% Sand (2.0mm - 0.05mm)			47		%		40-51	01-AUG-08
% Silt (0.05mm - 2um)			29		%		26-33	01-AUG-08

ALS Laboratory Group Quality Control Report

Workorder: L658705

Report Date: 22-SEP-08

Page 17 of 17

Legend:

Limit	99% Confidence Interval (Laboratory Control Limits)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
E	Matrix Spike recovery outside ALS DQO due to analyte background in sample.
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

REPORT TO:			REPORT FORMAT / DISTRIBUTION			SERVICE REQUESTED															
COMPANY: <u>Colder Associates</u>			STANDARD ☒ OTHER _____			REGULAR SERVICE (DEFAULT) ☒															
CONTACT: <u>Kerrie Serben</u>			PDF ☒ EXCEL ☒ CUSTOM _____ FAX _____			RUSH SERVICE (2-3 DAYS)															
ADDRESS: <u>195 Pemberton Ave</u> <u>North Vancouver, BC</u>			EMAIL 1: <u>KSerben@coldr.com</u>			PRIORITY SERVICE (1 DAY or ASAP)															
PHONE: <u>604-986-4331</u> FAX: <u>604-661-8548</u>			EMAIL 2: <u>A de Bruin @ coldr.com</u>			EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS															
INVOICE TO: SAME AS REPORT? YES ☒ NO ☐			INDICATE BOTTLES: FILTERED / PRESERVED (F/P) _____			ANALYSIS REQUEST															
COMPANY: <u>Comaplex Minerals Corp</u>			CLIENT / PROJECT INFORMATION:																		
CONTACT: <u>Sandy Barham</u>			JOB #: <u>07-1373-0055 Phase 6030</u>																		
ADDRESS: <u>Suite 401, 1015 - 4th St. SW</u> <u>Calgary, AB T2R 1S4</u>			PO / A/E:																		
PHONE: _____ FAX: _____			Legal Site Description: <u>multiple sites</u>																		
Lab Work Order # (lab use only)			QUOTE #:																		
SAMPLER (Initials): <u>TAZ</u>																					
Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	TOTAL TOX-ED.	SOIL TOXUS-ED.	CYANIDE	NH ₄ -ED, N-TOT-ED, P-TOTAL-ED, R-TOTAL-ED	P-TOTAL-DIS-COW-ED	C-TOT-URG-ED, C-TOT-ED	C-DIS-COW-ED	MET-ULTRA-ED	MET-ULTRA-DIG-ED	CHLOROFORM	HAZARDOUS?	HIGHLY CONTAMINATED?	NUMBER OF CONTAINERS				
	ML-MR	19-July-2008	12:30	Freshwater	X	X	X	X	X	X	X	X	X	X			10				
	NEW-1	20-July-2008	09:30	↓	X	X	X	X	X	X	X	X	X	X			10				
	E 9-8	20 July-2008	18:00	↓	X	X	X	X	X	X	X	X	X	X			10				
GUIDELINES / REGULATIONS			SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS																		
<u>CCME AWG and CCME DWG</u>			<u>Water samples. Refrigerate + contact Kerrie Serben, if any questions.</u>																		
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 reverse page of the white report copy.																					
RELINQUISHED BY: <u>Thalia Zis</u>		DATE & TIME: <u>July 21, 07:30</u>		RECEIVED BY:		DATE & TIME:		SAMPLE CONDITION (lab use only)													
RELINQUISHED BY:		DATE & TIME:		RECEIVED BY:		DATE & TIME:		TEMPERATURE		SAMPLES RECEIVED IN GOOD CONDITION? YES / NO (If no provide details)											

TOTAL OF 5 coolers this shipment

GENF14.00

TOTAL OF 5 COOLERS THIS SHIPMENT



Environmental Division

REPORT TO:		REPORT FORMAT / DISTRIBUTION		SERVICE REQUESTED																
COMPANY: <u>Golder Associates</u>		STANDARD ☒ OTHER ☐		REGULAR SERVICE (DEFAULT) ☒																
CONTACT: <u>Kerrie Serben</u>		PDF ☒ EXCEL ☒ CUSTOM ☐ FAX ☐		RUSH SERVICE (2-3 DAYS)																
ADDRESS: <u>195 Pemberton Ave</u>		EMAIL 1:		PRIORITY SERVICE (1 DAY or ASAP)																
<u>North Vancouver</u>		EMAIL 2:		EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS																
PHONE: <u>604.986.4378</u> FAX:				ANALYSIS REQUEST																
INVOICE TO: SAME AS REPORT? YES ☐ NO ☒		INDICATE BOTTLES: FILTERED / PRESERVED (F/P) ☐																		
COMPANY: <u>Complex Meliadine Corp</u>		CLIENT / PROJECT INFORMATION:																		
CONTACT: <u>Sandy Barham</u>		JOB #: <u>02-1372 0055, Phase 6010</u>																		
ADDRESS: <u>Calgary, AB</u>		PO / AFE:																		
PHONE: FAX:		Legal Site Description: <u>mul tiplexites</u>																		
QUOTE #:																				
Lab Work Order # (lab use only)		SAMPLER (Initials): <u>TA-2</u>																		
Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	CN-TOT-WT	METAL-CUM-ED	C-TOT-ORG-LEW-SK	NTL-TIL-TOT-TOM	PSA-1-SK									HAZARDOUS?	HIGHLY CONTAMINATED?	NUMBER OF CONTAINERS
	ML-B-2a	19-July-2008	09:30	sediment	X	X	X	X												2
	ML-B-2b		09:30		X	X	X	X												2
	ML-S-1a		11:05		X	X	X	X												2
	ML-S-1b		11:05		X	X	X	X												2
	ML-S-2a		12:20		X	X	X	X												2
	ML-S-2b		12:20		X	X	X	X												2
	ML-W-1a		15:15		X	X	X	X												2
	ML-W-1b		15:15		X	X	X	X												2
	ML-W-2a		16:00		X	X	X	X												2
	ML-W-2b		16:00		X	X	X	X												2
GUIDELINES / REGULATIONS				SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS																
<u>CLME AWG for sediment</u>				<u>Refrigerate + contact Kerrie Serben if any questions</u>																
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 reverse page of the white report copy.																				
RELINQUISHED BY:		DATE & TIME:		RECEIVED BY:		DATE & TIME:		SAMPLE CONDITION (lab use only)												
<u>Thalia Zis</u>		<u>21-July 07 30</u>						TEMPERATURE												
								SAMPLES RECEIVED IN GOOD CONDITION? YES / NO (If no provide details)												



Environmental Division

REPORT TO:		REPORT FORMAT / DISTRIBUTION		SERVICE REQUESTED	
COMPANY: <u>Golder Associates</u>		STANDARD ☒ OTHER ☐		REGULAR SERVICE (DEFAULT) ☒	
CONTACT: <u>Kerrie Serben</u>		PDF ☒ EXCEL ☒ CUSTOM ☐ FAX ☐		RUSH SERVICE (2-3 DAYS)	
ADDRESS: <u>195 Pemberton Ave</u>		EMAIL 1: <u>Kserben@golder.com</u>		PRIORITY SERVICE (1 DAY or ASAP)	
<u>North Vancouver, BC</u>		EMAIL 2: <u>Adi Bangs@golder.com</u>		EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS	
PHONE: <u>604-486-4331</u> FAX: <u></u>		ANALYSIS REQUEST			
INVOICE TO: SAME AS REPORT? YES / <u>NO</u>		INDICATE BOTTLES: FILTERED / PRESERVED (F/P) <u>...</u>			
COMPANY: <u>Cornplex Meliadine Corp</u>		CLIENT / PROJECT INFORMATION:		CN-TOT-WT METAL-UNED C-TOT-ORG-LEO-PK NITR-TOTAL-TOM PSA-1-SK HAZARDOUS? HIGHLY CONTAMINATED? NUMBER OF CONTAINERS	
CONTACT: <u>Sandy Burham</u>		JOB #: <u>07-1773-0055, Phase 6030</u>			
ADDRESS: <u>Suite 901, 1015 4th St SW</u>		PO / AFE:			
<u>Calgary, AB</u>		Legal Site Description: <u>multiple sites</u>			
PHONE: <u></u> FAX: <u></u>		QUOTE #:			
Lab Work Order # (lab use only)		SAMPLER (Initials): <u>TAZ</u>			
Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	
	DI-1-1a	20-July-2008	16:00	Sediment	X X X X
	DI-1-1b		16:00		X X X X
	DI-1-2a		16:20		X X X X
	DI-1-2b		16:20		X X X X
	DI-4-1a		12:00		X X X X
	DI-4-1b		12:00		X X X X
	DI-4-2a		13:35		X X X X
	DI-4-2b		13:35		X X X X
GUIDELINES / REGULATIONS		SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS			
<u>CME PWG for sediment</u>		<u>Sediment samples. Refrigerate + contact Kerrie Serben (Golder) if any questions</u>			
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RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:	SAMPLE CONDITION (lab use only)	
<u>Thalia Zis</u>	<u>21-July 07:30</u>			TEMPERATURE	SAMPLES RECEIVED IN GOOD CONDITION? YES / NO
					(If no provide details)