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Attention: David Morrison, President and CEO

Subject: Advanced Geochemistry, Jarvis River Warm Springs and Shakwak Valley Area, Southwest Yukon

1.0 INTRODUCTION

As part of Yukon Energy Corporation's (YEC's) 2009 Yukon Geothermal Exploration Program, EBA assessed the hydrogeochemistry and isotope signature of samples from the Jarvis River Warm Springs and other surface and groundwater sources in the Shakwak valley area, southwest Yukon.

Water samples were mainly collected from the Jarvis River Warm Springs and from targets of the winter open water survey (EBA, 2009), consisting of surface water bodies and cold springs in the Shakwak valley area. The main purpose of this study was to supplement information on the geothermal potential of the Jarvis River Warm Springs and the greater Shakwak valley area from the previously completed reconnaissance study in this area (EBA, 2008).

The scope of services of Phase 022 of the 2009 Geothermal Exploration Program included:

- Water sample collection from the Jarvis River Warm Springs for inorganic chemistry, stable isotope (δ^2H, $\delta^{18}O$), tritium (^3H), radiocarbon (^{14}C), and noble gas[1] analyses;
- Water sample collection from other surface water and groundwater sources in the area of the Jarvis River Warm Springs and the greater Shakwak valley area;
- Analysis of the water chemistry data and interpretation with respect to chemical characterization of the water samples and possible sources;
- Reservoir temperature estimate using geothermometry methods for samples from thermal springs (Jarvis River Warm Springs and others if applicable); and,
- Preparation of this report summarizing the methods, results, and conclusions of this study.

[1] The results of the noble gas analysis in samples from the Jarvis River Warm Springs are presented in a separate report (EBA, 2010).

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2.0 METHODS

2.1 FIELDWORK AND SAMPLING LOCATIONS

The fieldwork for this project phase was conducted in conjunction with the fieldwork for Phases 015 (Ground follow-up for open water targets) and 019 (Detailed geological mapping, Jarvis River area) in July 2009.

The sampling locations were mainly based on the results of the winter open water survey which had identified numerous open water targets. In addition, several surface water bodies in the vicinity of the Jarvis River Warm Springs were sampled. Figure 1 shows the locations of all sampling locations. Table 1 contains further information including coordinates and field parameter measurements for each of the sampling locations.

2.2 WATER SAMPLING AND FIELD MEASUREMENTS

Field parameters measured during the site visit included: temperature, pH, electrical conductivity, total dissolved solids, and dissolved oxygen (in the case of a spring). The field instruments were calibrated on the day of sampling. Table 2 summarizes the field instruments used along with their resolution and accuracy.

TABLE 2: SUMMARY OF FIELD WATER CHEMISTRY INSTRUMENTS

Parameter	Instrument	Resolution	Accuracy
UTM Coordinates	Magellan Meridian Platinum handheld GPS	1 m	~7 m
pH	Hanna HI 991300	0.01 pH units	0.1
EC	Hanna HI 991300	0.01 µS/cm	2% full scale
TDS	Hanna HI 991300	1 ppm	2% full scale
Temperature	Hanna HI 991300	0.1°C	0.5°C
Dissolved O_2	YSI 550A	0.01 mg/L	0.1 mg/L
Alkalinity	Hach Alkalinity Test Kit AL-AP MG-L	5 mg/L (5-100 mg/L); 20 mg/L (20-400 mg/L)	10 mg/L (5-100 mg/L); 40 mg/L (20-400 mg/L)
Ferrous Iron	Hach Ferrous Iron Test Kit IR-18C	0.1 mg/L	0.2 mg/L

Water samples were analyzed for hardness, alkalinity, cations and anions, and dissolved metals. Select samples were also analyzed for environmental isotopes of oxygen (oxygen-18) and hydrogen (deuterium and tritium). One sample from the Jarvis River Warm Springs was also analyzed for radiocarbon (^{14}C).

The major ion chemistry was included in order to classify the waters and determine their general chemical character. The metals analyses were used to support geothermometer calculations, specifically using sodium (Na), potassium (K), calcium (Ca), magnesium (Mg) and silicon (Si). Silicon was used to calculate the equivalent silica (SiO_2) concentration for use in the silica-based geothermometer formulas. The stable isotopes of water were included in order to plot them against a meteoric water line to determine if the sample waters were of meteoric origin, or were fractionated to enriched oxygen-18 values which can be an isotopic characteristic of geothermal waters. The radioactive hydrogen isotope tritium (^3H) and radiocarbon (^{14}C) were included to obtain information on the subsurface residence time of the water.

Water samples were collected in new, laboratory-supplied sample containers in accordance with laboratory recommended sampling procedures. Dissolved metals samples were field-filtered through a 0.45 µm filter and preserved with nitric acid (HNO_3).

Water samples were shipped on ice by air cargo to the laboratories. Inorganic water chemistry was analyzed by Exova (formerly Bodycote Testing Group) in Surrey, British Columbia. Isotope analyses were conducted by the University of Waterloo, Environmental Isotope Laboratory in Waterloo, Ontario.

2.3 GEOTHERMOMETER

There are a wide range of empirical chemical geothermometer formulas in the literature. One group is based on the equilibrium reached among alkali elements (sodium (Na), potassium (K) and calcium (Ca); Fournier and Truesdell 1973). Another group is based on the solubility of various mineralogical forms of silica (SiO_2) in hot geothermal waters. Silica solubility is rate- dependent, so waters that gain silica at elevated temperatures only slowly release that silica as the waters cool (i.e., as they move upwards and discharge at the surface). For this reason, the silica content of discharging geothermal waters can be used to calculate the approximate maximum subsurface temperature at which the water acquired the silica content.

Some of the prominent formulas are presented in Table 3.

Because calcium is the dominant cation in all water samples collected, we have chosen to use the classic alkali formula no. 1 (Fournier and Truesdell 1973) with the constant term B = 4/3 (assuming subsurface temperatures are less than 100°C).

TABLE 3: COMMON GEOTHERMOMETER FORMULAS			
#	Formula	Source	Comment
	Alkali-based formulas		
1	T°C = {1647/ [(log(Na/K) + B(log (sqrt(Ca)/Na) + 2.06)+2.47)]} – 273.15	Fournier and Truesdell, 1973	B = 4/3 below 100°C and 1/3 above 100°C; useable for T > 70°C, best 180–300°C
2	T°C = [1217/ (log(Na/K) + 1.483)] – 273.15	Fournier 1981	Alkali formula using Na and K only
3	T°C = [876.3/ (log(Na/K) + 0.8775)] – 273.15	Diaz-Gonzalez and Santoyo, 2008	Updated using world database of geothermal fluids
4	T°C = [1289/ (log(Na/K) + 1.635)] – 273.15	Verma and Santoyo 1995	Updated using an error propagation method, with Fournier's original data
	Silica-based formulas		
5	T°C = [1309/ (5.19 – logSiO_2)] – 273.15	Fournier 1981	Silica form is quartz with no steam loss; best for T > 180°C
6	T°C = [1522/ (5.75 – logSiO_2)] – 273.15	Fournier 1981	Silica form is quartz with steam loss from reservoir; best for T > 180°C
7	T°C = [1032/ (4.69 – logSiO_2)] – 273.15	Garcher and Arehart 2008	Silica form is chalcedony; best for T = 180-140°C
8	T°C = [731/ (4.52 – logSiO_2)] – 273.15	Garcher and Arehart 2008	Form is amorphous silica; best for T < 140°C
9	T°C = -44.119 +0.24469(SiO_2) – 1.7414 E-4(SiO_2)^2 + 79.305log(SiO_2)	Verma and Santoyo 1995	Updated using an error propagation method, with Fournier's original data; useful for T = 20-210°C

Note: All concentrations in molality (mg/kg). For water with density ~1 kg/L, concentrations of mg/L can be used.

For a silica geothermometer, we chose to use formula No. 9 (Verma and Santoyo 1995) since this is an update of Fournier's original formula and is applicable for temperatures ranging from 20 to 210°C. These formulae fit the hydrochemical setting and temperature ranges expected for the samples collected, and provide a reasonable estimate of subsurface temperatures for purposes of this reconnaissance study.

In applying the silica geothermometer, we assumed that for the waters sampled in this program, silicon (Si) is always bound as silica (SiO_2). The dilute sample silicon (Si) concentrations reported by the laboratory were first multiplied by 10 to determine the undiluted silicon concentration at the sampling point. The corrected silicon concentrations were then multiplied by 2.14 which is the ratio of atomic weights of Si and SiO_2. This calculated SiO_2 value was then used in the silica geothermometer formula.

3.0 RESULTS

3.1 INORGANIC CHEMISTRY

Table 4 presents a summary of the chemistry and isotope analytical results. Figure 2 shows a Piper Plot containing all water samples collected in the Shakwak Valley area. The laboratory reports are included as Appendix B. To evaluate the quality of the analysis EBA calculated the ion balance for each sample, i.e., the balance between sum of anion and cation equivalent charges. Usually, an ion balance of within ± 5% is considered satisfactory. The calculated ion balances vary from -1.6% to 4.3%, i.e., all ion balances are smaller than 5%, which suggests that analytical errors are within acceptable limits and all major cations and anions were included in the analyses.

The water samples can be classified based on their major ion chemical composition, taking into account all major anions and cations exceeding 10 meq-%[2]. The water or hydrochemical facies is determined by listing the ions with concentrations greater than 10 meq-% in decreasing order (cations are listed first).

The chemistry results for the samples collected from the Jarvis River Warm Springs are similar to those obtained during the reconnaissance study at this site (EBA, 2008). The water can be characterized as a sodium-bicarbonate water type ($Na\text{-}HCO_3$) and is significantly different from other surface water and groundwater samples from the Shakwak valley area. The surface water and groundwater samples collected in the greater Shakwak valley area show a variety of different chemical signatures. Samples collected from cold springs are mostly dominated by calcium and bicarbonate whereas most surface water samples can be characterized as magnesium-bicarbonate or magnesium-sulphate water types.

3.2 STABLE ISOTOPES

Figure 3 presents the results of the oxygen-18 and deuterium stable isotope analyses along with the Global (GMWL) and Local (LMWL) Meteoric Water Lines. The results are expressed in per mil units (parts per thousand) relative to Standard Mean Ocean Water (SMOW). Most samples plot very close to the LMWL for Whitehorse. However, five samples show a considerable enrichment of the heavier isotopes, i.e., less negative values of δ^2H and $\delta^{18}O$ (H09S-12, H09S-10, H09S-25, H09S-26, and H09S-13).

3.3 RADIOACTIVE ISOTOPES

The tritium concentration was measured in five water samples collected from the Jarvis River Warm Springs (two samples), two cold springs in the Shakwak valley area, and one

[2] The unit meq-% represents the percentage of cations and anions calculated from their milliequivalents per litre (meq/L). The unit meq/L is the molar concentration multiplied by the charge of the ions.

surface water pond in close proximity to the warm springs. The samples from the Jarvis River Warm Springs were taken from two different pools and tritium concentrations in both samples were below the detection limit of 0.8 TU[3]. The samples from two cold springs in the Shakwak valley area contained 3.9 TU and 6.8 TU tritium. The sample collected from a pond in the wetland to the northeast of the Jarvis River Warm Springs showed a tritium concentration of 11.1 TU.

EBA also collected a water sample for radiocarbon analysis from one of the pools of the Jarvis River Warm Springs. The radiocarbon (^{14}C) concentration in the sample was 2.24±0.06 pmc[4].

4.0 ANALYSIS AND DISCUSSION

4.1 INORGANIC CHEMISTRY

The water samples collected from the Jarvis River Warm Springs show a very distinct chemical composition which is in agreement with previous observations (Figure 2; EBA, 2008). Sodium-bicarbonate type waters as those from the Jarvis River Warm Springs are often found in deeper groundwater systems with considerable water residence times. The high sodium concentration may be caused by cation exchange which is especially typical for groundwater from aquifers that contain (marine) clay minerals. The cation exchange reaction replaces calcium and magnesium cations with sodium. Furthermore, the water samples from the Jarvis River Warm Springs contain considerably more chloride compared to other surface water and groundwater samples from the Shakwak valley area. Chloride is a conservative anion, i.e., chloride usually does not undergo significant chemical reactions in groundwater, and typically accumulates in deep groundwater as a function of residence time.

Since the stable isotopic composition of the thermal water indicates a local meteoric origin of the water we can hypothesize that the initial water composition was similar to that of modern shallow groundwater in the area. The chemical composition of the water then changed along the flow path including cation exchange reactions and accumulation of chloride.

The surface water sample H09S-24 which plots very close to the samples collected from the Jarvis River Warm Springs (Figure 2) was taken from a small pond in the wetland to the southwest of the warm springs. The very similar chemistry indicates that this pond is also part of the warm springs and is being fed by the same water source.

[3] TU – Tritium Unit: 1 TU corresponds to 3H/2H = 10-18 or 1 TU = 0.1181 Bq/kg (3.193 pCi/kg)

[4] Per cent modern carbon (pmc) means absolute per cent modern relative to the NBS oxalic acid standard corrected for decay since 1950.

4.2 STABLE ISOTOPES

Most of the samples plot very close to the LMWL of Whitehorse which indicates that the water is of local meteoric origin (Figure 3). The isotopic enrichment in both heavy isotopes (^{2}H and ^{18}O) in five of the samples can be explained by isotopic fractionation due to evaporation. All five samples (H09S-12, H09S-10, H09S-25, H09S-26, and H09S-13) were collected from shallow ponds in wetlands. The stagnant water had likely been exposed to evaporation for a considerable time which caused the observed enrichment of the heavier isotopes.

Stable isotopic fractionation which can be typical for high-temperature geothermal waters with high residence times was not observed.

4.3 RADIOACTIVE ISOTOPES AND GROUNDWATER RESIDENCE TIME

The tritium concentration of about 11 TU in the sample H09S-25 collected from a pond in the wetland to the northeast of the Jarvis River Warm Springs is similar to modern tritium concentrations in precipitation (IAEA/WMO, 2006) and indicates that this water represents recent precipitation.

Both samples taken from cold springs in the Shakwak valley area (H09S-11 and H09S-17) contained tritium concentrations lower than the modern concentration in precipitation, suggesting that this water had a residence time in the order of a minimum of a few years but less than about 50 years. Note that groundwater with a residence time of more than about 50 years would not contain any detectable amount of tritium.

The tritium concentration in the samples taken from the Jarvis River Warm Springs were below detection limit indicating a residence time of the water of more than about 50 years. The virtual absence of tritium in the thermal water also suggests that the spring water did not contain any significant mixing component of shallow groundwater. Assuming a similar tritium concentration as observed in cold springs in the Shakwak valley area for shallow groundwater in the vicinity of the warm springs the maximum mixing component of shallow groundwater in the thermal water would be in the order of 10% or less.

The radiocarbon analysis yield additional information on the residence time of the thermal water of the Jarvis River Warm Springs. The measured radiocarbon concentration of 2.24 pmc is very low and corresponds to a conventional radiocarbon age of 30,440±220 years BP[5]. This radiocarbon age suggests that the thermal water represents water that was in last contact with the atmosphere during the Pleistocene about 30,000 years ago. Since the sample was taken from one of the pools a slight contamination with atmospheric CO_2 could be expected. The fact that the observed radiocarbon concentration is very low and assuming a slight contamination with modern atmospheric CO_2 suggests that the actual

[5] Before present (BP) is defined as before 1950. This time scale is usually used for radiocarbon dating using a 1950-based reference sample of oxalic acid.

residence time of the thermal water might even be larger than 30,000 years. It also supports the conclusion that the thermal water does not contain any significant admixture of younger shallow groundwater.

4.4 GEOTHERMOMETRY

EBA used geothermometer methods to estimate subsurface geothermal reservoir temperatures as described in Section 2.3. Table 5 summarizes the temperatures estimated for the different samples collected.

The different geothermometers yield very consistent temperatures for all samples from the Jarvis River Warm Springs and the artesian groundwater feeding the warm springs. The mean temperatures for the different geothermometers range from 67 to 76°C.

The sample that was previously collected from the warm springs indicated a slightly higher temperature of about 100°C to 110°C (EBA, 2008). However, EBA believes that the new data are more reliable given the comprehensive data set consisting of a total of seven samples collected from different pools of the warm springs and the artesian aquifer and the fact that all samples and different geothermometers yield very consistent results.

It is important to note that the geothermometers do not provide any information on the depth and location of these temperature conditions. Furthermore, the silica geothermometer calculations do not take into account any mixing between the geothermal water and cold, shallow groundwater, and therefore usually present a lower estimate of the reservoir temperature. However, the observed low concentrations of tritium and radiocarbon suggest that the thermal water does not contain any significant admixture of young shallow groundwater.

TABLE 5: GEOTHERMOMETER RESULTS FOR JARVIS RIVER WARM SPRINGS

Sample	Na-K-Ca	SiO_2
	°C	
H09S-1	70	78
H09S-2	81	79
H09S-3	68	75
H09S-4	62	73
H09S-19	71	76
JR09-01-1	77	75
JR09-01-2	77	75
Mean Temperature	**72**	**76**

5.0 CONCLUSIONS

The advanced geochemical characterization of the Jarvis River Warm Springs and other surface water and groundwater sources in the Shakwak valley area improved our understanding of the warm springs and the geothermal potential of the area. The following conclusions can be made from this study:

- The chemical composition of the Jarvis River Warm Springs is significantly different from that of other surface water and groundwater samples collected in the Shakwak valley area;
- The new chemistry results for the Jarvis River Warm Springs are in agreement with results obtained from the reconnaissance study conducted in 2008 (EBA, 2008);
- The thermal water can be characterized as sodium-bicarbonate type water which is typical for deep groundwater with a significant residence time that was in contact with (marine) clay minerals;
- The stable isotopic composition of most of the samples indicates a local meteoric origin of the water samples collected in the Shakwak valley area. Isotopic fractionation and enrichment of the heavier isotopes in five samples can be explained by evaporation as all these samples were taken from shallow wetland ponds;
- Tritium and radiocarbon concentrations observed in the thermal water indicate a long residence time of the water in the order of several ten thousand years. These data also suggest that the thermal water does not contain any considerable amount of young, shallow groundwater;
- Geothermometer temperatures were found to be slightly lower than previously determined. Temperatures estimated for a total of seven samples from the warm springs and the artesian aquifer feeding the warm springs using four different geothermometer methods yield very consistent values between 60°C and 80°C;
- The winter open water survey has not identified any other thermal springs. Most of the open water targets were cold springs or areas in surface water courses that are likely influenced by local groundwater discharge;
- Direct temperature information from the subsurface would be required to confirm or reject the results of the geothermometer application. Such direct temperature measurements can only be obtained from a thermal gradient drill hole that penetrates the artesian overburden aquifer and is drilled into bedrock to a depth of several hundred meters;
- The comprehensive interpretation of all available information from surface exploration at the site indicates that the geothermal potential is likely to be low to moderate with subsurface temperatures of less than 100°C. However, the geological setting of the Jarvis River Warm Springs being fed by an artesian overburden aquifer and the lack of

information on bedrock geology in the vicinity of the warm springs complicate the geothermal exploration of the site and result in uncertainties that can only be further addressed by intrusive exploration methods.

6.0 REFERENCES

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7.0 LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Yukon Energy Corporation (YEC) and their agents. EBA does not accept any responsibility for the accuracy of any of the data, the analysis or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than YEC, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. EBA's General Conditions are provided in Appendix A of this report.

8.0 CLOSURE

We trust this report meets your present requirements. Should you have any questions or comments, please contact the undersigned at your convenience.

Respectfully submitted,

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TABLES

TABLE 1: SAMPLING LOCATIONS, SHAKWAK VALLEY AREA, SOUTHWEST YUKON									
Station	Zone	Easting	Northing	Temp C	pH	EC	TDS	DO	Comments
				[°C]	[-]	[uS/cm]	[mg/L]	[mg/L]	
H09S-1	8	338219	6755474	19.5	8.3	730	372	4.5	Second largest pool of Jarvis River Warm Springs, most active with respect to bubbling, no obvious outflow, very soft silty bottom
H09S-2	8	338237	6755486	20.3	8.07	744	376	1.2	Small pool (Jarvis River Warm Springs), very shallow (less than about 30 cm)
H09S-3	8	338234	6755457	21.7	8.07	704	369	1.44	Small pool (Jarvis River Warm Springs), grey coloured water, one main bubble vent, slight H2S odour
H09S-4	8	338245	6755448	20	8.32	703	357	3.52	Largest pool of Jarvis River Warm Springs, deeper than H09-S1, only slight gas seeps close to shore
H09S-5	8	338259	6755482	17.7	8.25	726	372	2.13	Small, shallow pool of Jarvis River Warm Springs; small outflow with very little flow volume
H09S-6	8	338251	6755465	18.3	8.26	748	381	4.05	Deep round pool of Jarvis River Warm Springs; no outflow
H09S-7	7	662393	6755610	13.3	7.8	2816	1436	1.16	Small pond at the edge of a wetland; shallow
H09S-8	7	662416	6755548	9.6	7.03	910	465		Part of a stream; is flowing
H09S-9	7	662394	6755582	11.4	8.22	2033	1029	3.75	Small pond
H09S-10	7	661327	6755884	17.4	8.24	2032	1038	4.9	Small pond
H09S-11	7	661139	6756077	4.6	7.73	792	403	12.54	Cold spring, several small spring outlets, low flow, springs feed small creek, several old, inactive spring outlets
H09S-12	8	337809	6756473	20.4	8.14	2651	1353	5.9	Small pond in open area; rusty colour; some carbonate precipitates at shore
H09S-13	8			23.9	8.62	>4000	>2000	2.4	Shallow pond in open area (wetland)
H09S-14	7	659372	6751364	10.5	7.82	315	160		Cold spring, feeding small creek; sample taken from creek
H09S-15	7	659473	6751349	2.9	8.17	315	160		Cold spring, feeding small creek; sample taken close to spring outlet
H09S-16	7	659432	6751410	6.1	8.21	306	157		Cold spring, feeding small creek; sample taken close to spring outlet
H09S-17	7	656836	6751364	6.3	8	531	270	13.7	Cold spring, feeding small creek, several spring outlets
H09S-18	7	657580	6761345	4.2	7.92	564	287	8.55	Cold spring, low flow
H09S-19	8	338258	6755465	15.7	8.31	740	377	5.3	= H09S-6
H09S-20	7	651550	6764488	3.2	7.83	451	227	3.5	Several springs on hillside flowing into lake; low to moderate flow
H09S-21	7	646375	6769379	10.9	8.05	544	277		Pool in creek, fast inflow, slow outflow
H09S-22	8	340206	6758518	17.3	6.87	88	44		On edge of small lake
H09S-23	8	343009	6757857	17.1	8.04	584	296		Small pond close to highway
H09S-24	8	338075	6755463	13.2	8.46	635	321	8.5	Pond in wetland near warm spring
H09S-25	8	338505	6755614	15.2	8.46	>4000	>2000	3.9	Small pond in open area NE of warm springs, stagnant water, H2S odour, dark red colour
H09S-26	8	337929	6759242	19.4	8.33	>4000	>2000	10.2	Small pond in wetland next to little hump (pingo?)
H09S-27	8	387598	6713248	9.3	7.86	150	73	12.7	Small creek between WP50 and WP51; no place to land close to WP 50
H09S-28	8	387618	6712858	7.3	7.19	196	99	9.7	Small creek close to WP51; rusty precipitate at shore and iron coatings on gravel
H09S-29	8	375915	6731835	14.8	7.73	243	124	11.1	Small pond in wetland just off Kathleen river; water is likely coming from lake ~300m from river
H09S-30	8	368706	6738264	7.7	8.13	236	121	13.1	Small creek flowing from hillside into wetland next to Dezadeash river; creek probably originates from spring in the area of WP 59

TABLE 4: RESULTS OF CHEMICAL ANALYSES

Analyte		Units	Sample Name	H09S-1	H09S-2	H09S-3	H09S-4	H09S-7	H09S-10	H09S-11	H09S-12	H09S-13	H09S-16	H09S-17	H09S-19	H09S-20	H09S-24	H09S-25	H09S-26	H09S-27	H09S-28	H09S-29	H09S-30	H09S-31
			Lab	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote	Bodycote
			Lab ID	693139-1	693139-2	693139-3	693139-4	693139-5	693139-6	693139-7	693139-8	693139-9	693150-1	693150-2	693139-10	693150-3	693139-11	693139-12	693139-13	693150-4	693150-5	693150-6	693150-7	693150-8
			Sample Date	13-Jul-09	7/13/2009	7/13/2009	7/13/2009	7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/14/2009	7/22/2009	7/22/2009	7/15/2009	7/22/2009	7/16/2009	7/16/2009	7/16/2009	7/22/2009	7/22/2009	7/22/2009	7/22/2009	7/22/2009
			Sample Location	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area	Jarvis Warm Springs Area
			Easting (UTM, Nad83)	338219	338237	338234	338245	662393	661327	661139	337809		659432		338258	651550	338075	338505	337929	387598	387618	375915	368706	
			Northing (UTM, Nad83)	6755474	6755486	6755457	6755448	6755610	6755884	6756077	6756473		6751410		6755465	6764488	6755463	6755614	6759242	6713248	6712858	6731835	6738264	
			Water Type	Na-HCO3	Na-HCO3	Na-HCO3	Na-HCO3	Mg-Ca-SO4-HCO3	Mg-Na-HCO3-SO4	Ca-Mg-HCO3-SO4	MG-SO4-HCO3	Mg-SO4-HCO3	Ca-Mg-HCO3-SO4	Ca-Mg-SO4-HCO3	Na-HCO3	Ca-Mg-HCO3	Na-HCO3	Mg-SO4-HCO3	Mg-SO4	Ca-HCO3	Ca-HCO3	Ca-HCO3-SO4	Ca-Mg-HCO3	Ca-Mg-HCO3
			Detection Limit	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results
Ion Balance		%	-	-1.2	-1.3	-0.8	-0.8	2.4	-1.6	-0.6	2.2	4.3	-0.3	0.2	-1.5	-0.6	0.8	3.0	4.1	-0.2	-0.7	-1.1	0.6	-0.8
Field Parameters																								
Temperature	T	°C		19.5	20.3	21.7	20	13.3	17.4	4.6	20.4	23.9	6.1	6.3	15.7	3.2	13.2	15.2	19.4	9.3	7.3	14.8	7.7	19.6
pH		pH units		8.3	8.07	8.07	8.32	8	8.24	7.73	8.14	8.62	8.21	8	8.31	7.83	8.46	8.46	8.33	7.86	7.19	7.73	8.13	7.78
Dissolved O_2	DO	mg/L		4.5	1.2	1.44	3.52	1.16	4.9	12.54	5.9	2.4			5.3	3.5	8.5	3.9	10.2	12.7	9.7	11.1	13.1	7.5
Electrical Conductivity	EC	µS/cm at 25°C		730	744.0	704	703	2816	2032	792	2651	>4000	306	531	740	451	635	>4000	>4000	150	196	243	236	330
Total Dissolved Solids	TDS	ppm	1	372	376	369	357	1436	1038	403	1353	>2000	157	270	377	227	321	>2000	>2000	73	99	124	121	156
Ferrous Iron	Fe^{2+}	mg/L	-	-	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	-	-	-
p-Alkalinity		mg/L $CaCO_3$	5	-	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	-	-	-
m-Alkalinity		mg/L $CaCO_3$		-	-	-	-	-	-	240	-	-	-	-	280	-	-	-	-	-	-	-	-	-
Physical Parameters																								
pH		pH units	-	8.30	8.25	8.21	8.37	7.89	8.2	7.94	8.19	8.49	8.12	8.08	8.39	8.04	8.42	8.34	8.27	7.95	7.77	7.97	8.15	8.13
Electrical Conductivity	EC	µS/cm at 25°C	1	733	733	713	692	2680	1970	759	2550	5700	299	509	735	419	684	4070	8730	140	192	246	233	363
Hardness		mg/L	1	92.1	75	79.8	81.2	1620	720	382	1800	4090	146	267	71	223	85.1	2230	6910	71	96	121	120	186
Dissolved Major Ions																								
Calcium	Ca	mg/L	0.2	14.3	12.6	13.2	12.7	165	51.1	79.4	118	52.8	42.1	70.4	11.3	60.8	13.6	97.6	295	23.3	31.5	40.7	36.2	53.4
Magnesium	Mg		0.2	13.7	10.5	11.4	12	293	144	44.8	367	962	9.9	22.2	10.4	17.3	12.4	482	1500	3	4.1	4.6	6.6	12.9
Sodium	Na		0.4	140	148	141	136	145	236	22.1	40.2	334	4.5	2.4	147	3.9	131	390	569	2.3	3.1	2.4	3.8	6
Potassium	K		0.4	3	3.8	2.6	2.1	8.9	12	4.5	12	42	0.6	2.5	2.6	2.4	2.7	36	26	0.9	1.3	0.5	0.6	1.1
Silicon	Si		0.05	13.4	13.6	12.3	11.9	5.49	0.68	5.61	11.9	10.8	1.74	2.44	12.8	4.79	10.9	8.36	4.2	5.22	5.11	2.32	4.44	4.67
Chloride	Cl		0.4	26.3	25	26.1	27.1	17.7	16.4	1.4	1.4	17.9	0.4	0.7	23.9	0.5	23.5	17.4	15.5	0.5	0.4	0.4	0.5	2
Fuoride	F		0.05	0.37	0.36	0.33	0.33	0.5	0.56	0.19	<0.2	<0.5	<0.05	0.11	0.34	0.07	0.34	0.4	<0.5	<0.05	0.05	<0.05	<0.05	0.07
Nitrate - N	NO_3		0.01	<0.01	<0.01	0.01	0.02	<0.05	<0.05	0.11	<0.05	<0.1	0.09	0.11	0.11	0.14	0.02	<0.05	<0.1	0.02	0.05	0.04	0.11	<0.01
Nitrite - N	NO2		0.005	<0.005	<0.005	<0.005	<0.005	<0.02	<0.02	<0.005	<0.02	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.02	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate and Nitrite - N			0.01	<0.01	<0.01	0.01	0.02	<0.07	<0.07	0.11	<0.07	<0.1	0.09	0.11	0.11	0.14	0.02	<0.07	<0.1	0.02	0.05	0.04	0.11	<0.01
Sulfate (SO4)	SO_4		0.9	30.3	32.6	31.6	35.3	1170	272	118	1080	3250	63.2	138	31	28	33.1	1680	6500	3.2	3.3	44.9	10	10
Hydroxide Alkalinity	OH		5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbonate Alkalinity	CO_3		6	<6	<6	<6	<6	<6	<6	<6	<6	79	<6	<6	<6	<6	7	11	<6	<6	<6	<6	<6	<6
Bicarbonate Alkalinity	HCO_3		5	417	418	398	379	743	1200	386	855	1290	111	158	415	253	366	1420	914	89	124	100	139	233
Total Alkalinity	$CaCO_3$		5	342	343	326	311	609	986	317	702	1190	91	130	341	207	312	1180	749	73	102	82	114	191
Metals - Dissolved																								
Aluminum	Al	mg/L	0.002	0.006	0.008	0.008	0.006	0.007	0.02	<0.005	0.008	0.06	0.013	<0.005	0.02	0.015	0.012	0.02	0.01	0.016	0.006	0.007	0.025	0.031
Antimony	Sb		0.0002	0.0003	0.0002	0.0003	0.0004	0.0006	0.001	0.0004	0.0005	0.001	0.0005	0.0003	0.0004	0.0005	0.0005	0.002	0.002	0.0004	0.0005	0.0005	0.0004	0.001
Arsenic	As		0.0002	0.0057	0.0183	0.0021	0.003	0.0024	0.0085	0.0002	0.0027	0.014	<0.0002	<0.0002	0.0108	0.0004	0.0071	0.039	0.0072	0.0003	0.0005	0.0005	0.0005	0.0025
Barium	Ba		0.001	0.063	0.07	0.073	0.058	0.035	0.046	0.028	0.02	0.01	0.066	0.03	0.057	0.069	0.056	0.02	0.03	0.03	0.034	0.005	0.012	0.018
Beryllium	Be		0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bismuth	Bi		0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	B		0.002	0.392	0.394	0.404	0.408	0.054	0.043	0.05	0.087	0.2	0.019	0.024	0.389	0.05	0.356	0.567	0.01	0.003	0.004	0.025	0.038	0.054
Cadmium	Cd		0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00002	0.00003	0.00001	0.00003	<0.00005	0.00002	0.00002	0.00002	0.00002	0.00001	<0.00005	<0.00005	<0.00001	0.00004	<0.00001	0.00001	0.00002
Chromium	Cr		0.0005	<0.0005	0.0006	0.001	0.0005	<0.001	<0.001	0.0008	<0.001	<0.002	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.002	<0.002	<0.0005	<0.0005	0.0006	0.0012	0.0006
Cobalt	Co		0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0006	0.0004	<0.0001	0.0003	0.0007	<0.0001	<0.0001	0.0001	<0.0001	0.0001	0.001	0.0009	<0.0001	0.0001	<0.0001	<0.0001	0.0001
Copper	Cu		0.001	<0.001	<0.001	<0.001	<0.001	0.005	0.003	<0.001	0.002	0.007	0.001	<0.001	<0.001	<0.001	0.001	<0.005	0.01	<0.001	0.001	<0.001	<0.001	0.001
Iron	Fe		0.01	0.03	0.03	0.01	0.02	0.4	0.12	<0.01	0.21	0.18	0.01	<0.01	0.03	<0.01	0.05	0.42	0.29	0.03	0.14	0.02	0.03	0.04
Lead	Pb		0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0061	0.001	<0.0001	0.0009	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.002	0.001	0.0001	<0.0001	<0.0001	<0.0001	0.0001
Lithium	Li		0.001	0.009	0.011	0.009	0.009	0.023	0.024	0.009	0.041	0.08	0.001	0.001	0.008	0.003	0.008	0.082	0.05	0.001	<0.001	<0.001	0.001	0.002
Manganese	Mn		0.005	0.019	0.016	0.017	0.017	0.667	0.036	<0.005	0.092	<0.02	<0.005	<0.005	0.024	<0.005	<0.005	<0.02	0.49	<0.005	0.041	0.015	<0.005	0.01
Mercury	Hg		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	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	Mo		0.001	0.019	0.02	0.021	0.021	<0.002	0.007	0.006	<0.002	<0.005	<0.001	0.002	0.019	0.003	0.02	0.009	<0.005	0.001	0.001	<0.001	0.001	0.002
Nickel	Ni		0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0243	0.01	<0.0005	0.007	0.018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.023	0.02	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Phosphorus	P		0.05	0.06	0.08	0.06	0.07	0.11	<0.05	<0.05	<0.05	0.09	0.06	<0.05	0.08	<0.05	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05
Selenium	Se		0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0004	0.0032	<0.0004	<0.001	0.0014	0.0028	<0.0002	0.001	<0.0002	<0.001	0.003	<0.0002	<0.0002	0.0014	0.0007	0.0002
Silver	Ag		0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00002	<0.00002	<0.00001	<0.00002	<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Strontium	Sr		0.001	0.25	0.264	0.223	0.28	1.13	0.635	0.45	0.922	0.46	0.205	0.43	0.211	0.213	0.267	1.34	2.94	0.076	0.102	0.316	0.317	0.31
Sulfur	S		0.3	10.1	10.9	10.5	11.8	390	90.8	39.4	359	1080	21.1	46.1	10.3	9.4	11	562	2160	1.1	1.1	15	3.4	3.3
Thallium	Tl		0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0001	<0.0001	<0.00005	<0.0001	<0.0002	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0002	<0.0002	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Tin	Sn		0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.002	<0.005	<0.001	<0.001	0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001
Titanium	Ti		0.0005	0.0007	0.0007	0.0009	0.0008	0.012	0.0043	0.0013	0.011	0.038	0.001	0.0013	0.0015	0.0009	0.0012	0.018	0.0695	0.0005	0.0005	0.0005	0.0013	0.0008
Uranium	U		0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0055	0.016	0.0018	<0.001	0.004	<0.0005	0.0007	<0.0005	0.0006	<0.0005	0.003	0.026	<0.0005	<0.0005	<0.0005	<0.0005	0.0005
Vanadium	V		0.0001	0.0019	0.0021	0.0023	0.0018	0.002	0.003	0.0015	0.001	0.004	0.0005	0.0005	0.0021	0.0008	0.0016	0.003	0.003	0.0009	0.0007	0.0007	0.0022	0.0021
Zinc	Zn		0.001	0.001	0.001	0.007	0.001	0.02	0.007	0.002	0.01	0.02	0.004	0.002	0.002	0.003	0.002	0.02	0.03	0.001	0.004	0.002	0.002	0.01
Environmental Isotopes																								
Oxygen-18[1]	$\delta^{18}O$	‰		-25.14	-	-24.66	-	-	-14.59	-21.63	-15.87	-3.96	-21.12	-21.67	-24.24	-22.2	-24.6	-10.66	-7.04	-21.18	-20.95	-20.85	-21.73	-20.89
Deuterium[1]	$\delta^{2}H$			-197.05	-	-196.33	-	-	-142.36	-172.52	-147.20	-97.79	-161.77	-165.15	-196.32	-172.78	-194.48	-121.49	-106.89	-163.94	-164.49	-160.34	-166.99	-166.38
Tritium	^{3}H	TU[2]		<0.8	-	-	-	-		3.9	-	-	-	6.8	<0.8	-	-	11.1	-	-	-	-	-	-

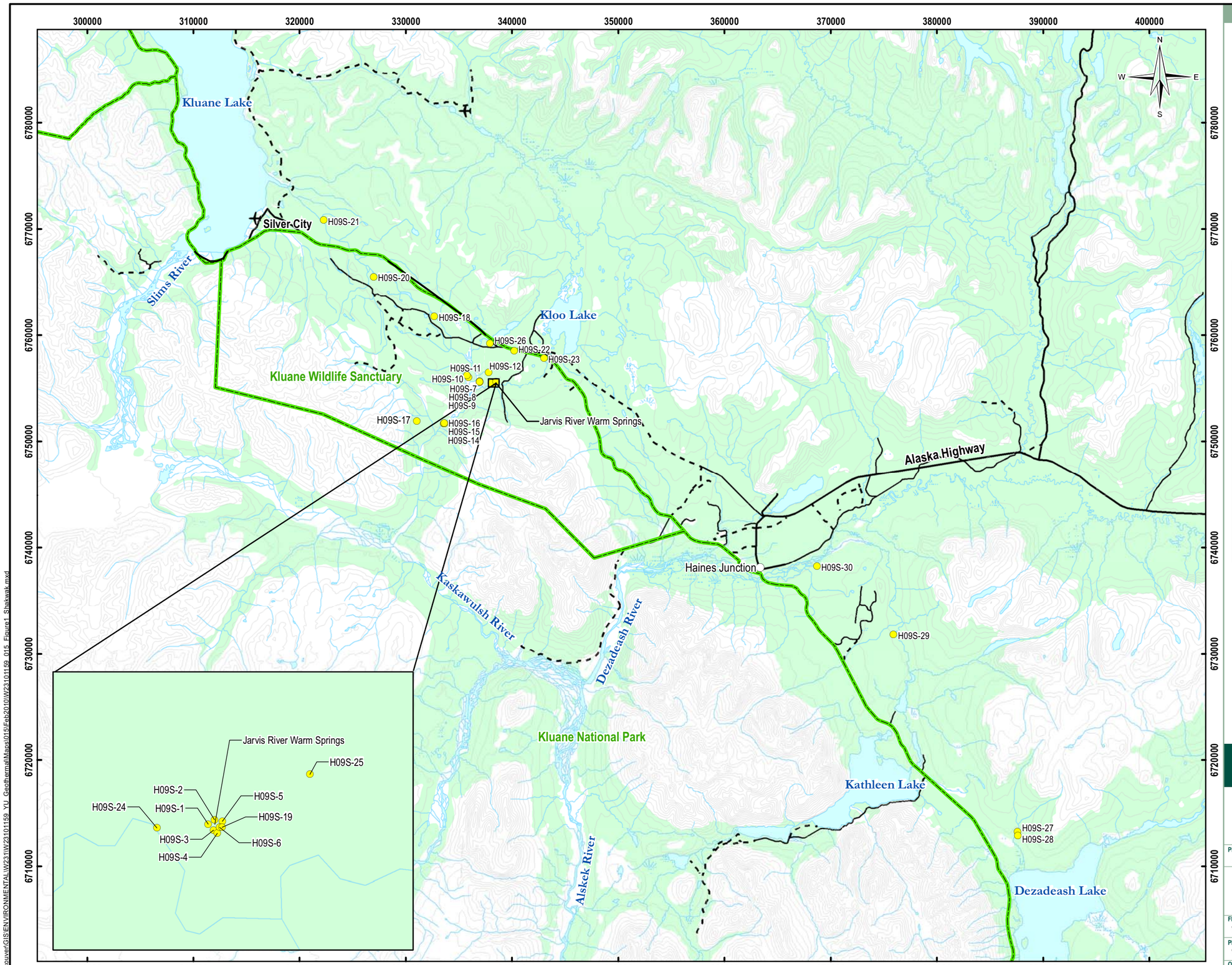
Notes:

"<" indicates less than the laboratory detection limit

"-" indicates not analyzed / no guidline established

[2] TU - Tritium Units (TTU = 0.11919 Becquerels/L per IAEA, 2000 Report; 1TU equals 1 ^{3}H atom in 10^{18} ^{1}H atoms)

FIGURES



LEGEND

- Sampling Location
- Park Boundary
- Airstrip
- Contour (100m)
- Trail
- Limited Use Road
- Road
- Watercourse
- Waterbody
- Wetland
- Vegetation

ISSUED FOR USE

NOTES
Base data source: NTDB 1:250K

2009 GEOTHERMAL ASSESSMENT PROGRAM

Shakwak Valley Water Sampling Locations, Southwest Yukon

PROJECTION	DATUM
UTM Zone 8	NAD83

Scale: 1:350,000
5 2.5 0 5
Kilometers

FILE NO.
W23101159_015_Figure1_Shakwak.mxd

PROJECT NO.	DWN	CKD	REV
W23101159.015	MEZ	SK	0

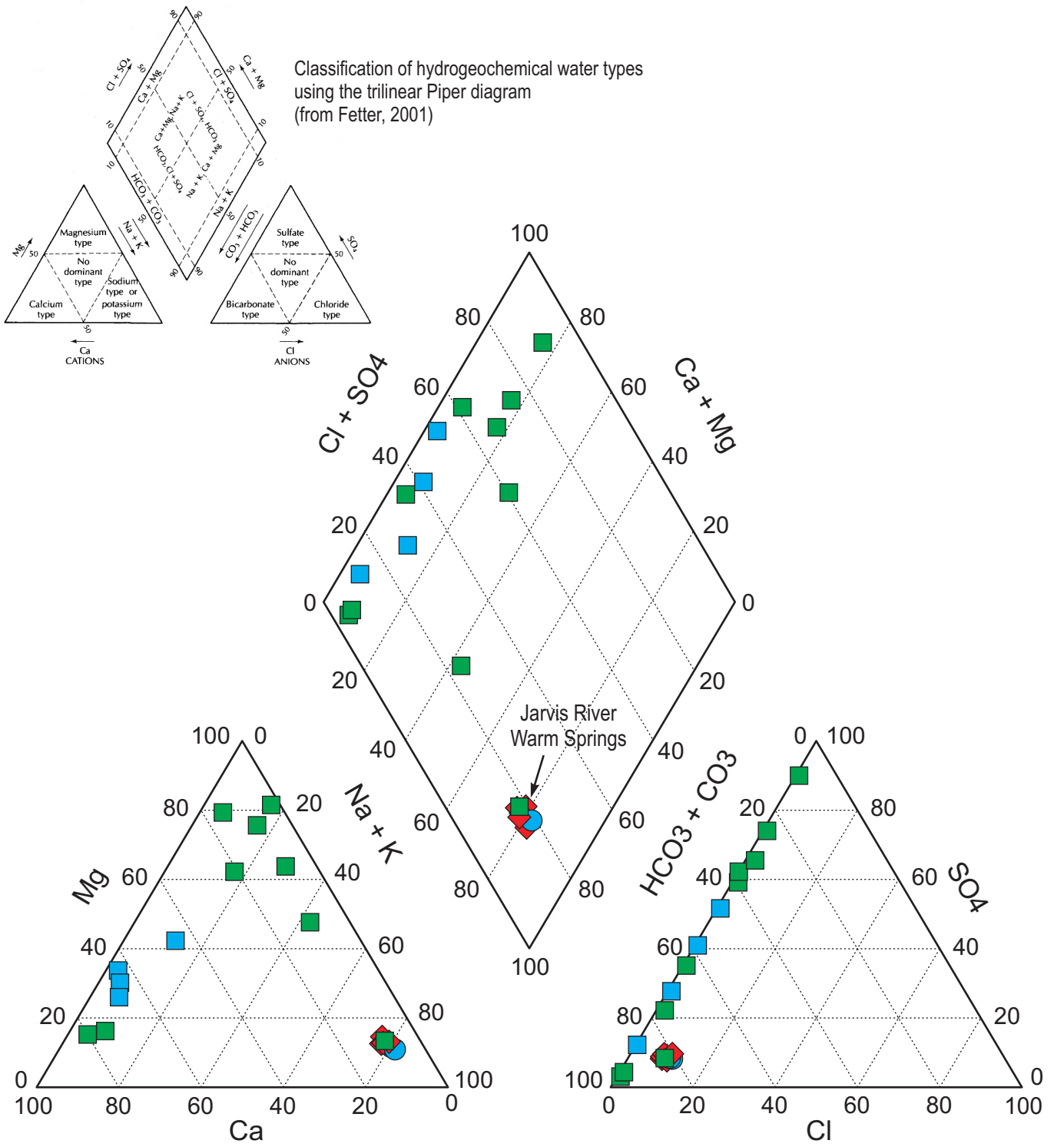
OFFICE	DATE
EBA-VANC	February 16, 2010

YUKON ENERGY

EBA Engineering Consultants Ltd.

Figure 1

G:\Vancouver\GIS\ENVIRONMENTAL\W23\W23101159_YU_Geothermal\Maps\015\Feb2010\W23101159_015_Figure1_Shakwak.mxd



ISSUED FOR USE

LEGEND

- Jarvis River Warm Springs
- Artesian Groundwater
- Surface Water
- Cold Springs

CLIENT

YUKON ENERGY

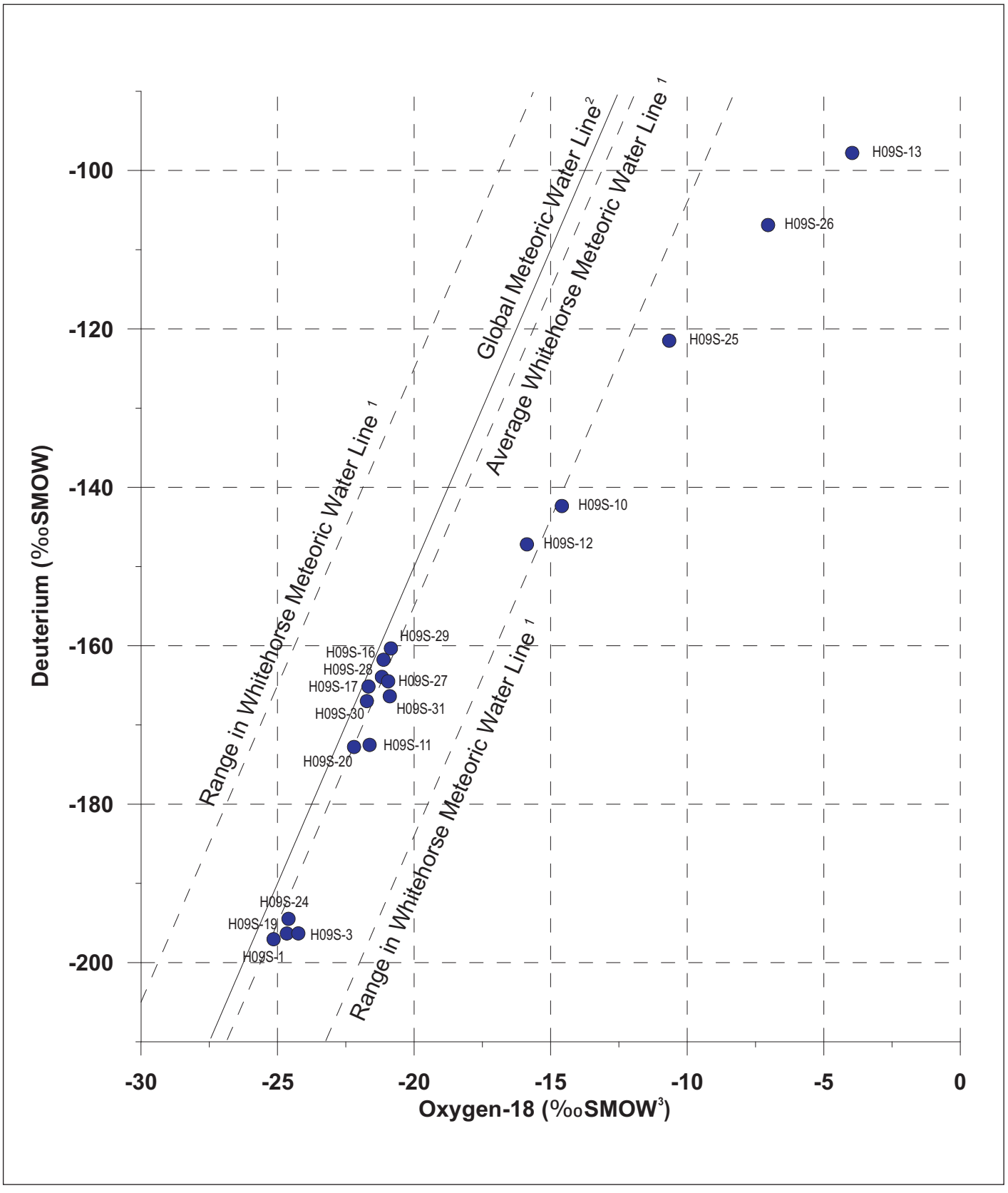
EBA Engineering Consultants Ltd.

2009 GEOTHERMAL EXPLORATION
SHAKWAK VALLEY, YUKON

Piper Diagram

PROJECT NO.	DWN	CKD	REV
W23101159.022	SK	RMM	0
OFFICE: EBA-WHSE	DATE: March 2010		

Figure 2



NOTES

1) LMWL - Local (Whitehorse) Meteoric Water Line from Birks, Edwards, Gibson, Michel, Drimmie, and MacTavish, Canadian Network for Isotopes in Precipitation, Univeristy of Waterloo/ Meteorological Service of Canada 2003.
2) GMWL - Global Meteoric Water Line from Fetter (1994) citing Craig (1961).
3) SMOW = Standard Mean Ocean Water

CLIENT

YUKON ENERGY

EBA Engineering Consultants Ltd.

2009 GEOTHERMAL EXPLORATION PROGRAM
SHAKWAK VALLEY, YUKON

Plot of Stable Isotope Data with Meteoric Water Line

PROJECT NO.	DWN	CKD	REV
W23101159.022	SK	RMM	0
OFFICE: EBA-WHSE	DATE: March 2010		

Figure 3

APPENDIX

APPENDIX A GENERAL CONDITIONS

GEO-ENVIRONMENTAL REPORT – GENERAL CONDITIONS

This report incorporates and is subject to these "General Conditions".

1.0 USE OF REPORT AND OWNERSHIP

This report pertains to a specific site, a specific development, and a specific scope of work. It is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site or proposed development would necessitate a supplementary investigation and assessment.

This report and the assessments and recommendations contained in it are intended for the sole use of EBA's client. EBA does not accept any responsibility for the accuracy of any of the data, the analysis or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than EBA's Client unless otherwise authorized in writing by EBA. Any unauthorized use of the report is at the sole risk of the user.

This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of EBA. Additional copies of the report, if required, may be obtained upon request.

2.0 ALTERNATE REPORT FORMAT

Where EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed EBA's instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by EBA shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of EBA's instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except EBA. The Client warrants that EBA's instruments of professional service will be used only and exactly as submitted by EBA.

Electronic files submitted by EBA have been prepared and submitted using specific software and hardware systems. EBA makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

3.0 NOTIFICATION OF AUTHORITIES

In certain instances, the discovery of hazardous substances or conditions and materials may require that regulatory agencies and other persons be informed and the client agrees that notification to such bodies or persons as required may be done by EBA in its reasonably exercised discretion.

APPENDIX

APPENDIX B LABORATORY REPORT

Bodycote TESTING GROUP

Report Transmission Cover Page

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Approval Status:	Approved
Invoice Frequency:	by Lot
COD Status:	
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Contact & Affiliation	Address	Delivery Commitments
Stephan Klump EBA Engineering - Edmonton	Unit 6, 151 Industrial Road, Calcite Business Whitehorse, Yukon Territory Y1A 2V3 Phone: (867) 668-2071 Fax: (867) 668-4349 Email: sklump@eba.ca	On [Lot Verification] send (COA) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Report Approval] send (Test Report) by Email - Single Report On [Lot Approval and Final Test Report Approval] send (COC, Test Report, Invoice) by Post M

Notes To Clients:

Bodycote TESTING GROUP

Sample Custody

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Sample Disposal Date: October 20, 2009

All samples will be stored until this date unless other instructions are received. Please indicate other requirements below and return this form to the address or fax number on the bottom of this page.

☐ Extend Sample Storage Until _____ (MM/DD/YY)

The following charges apply to extended sample storage:

Storage for 1 to 5 samples per month	$ 10.00
Storage for 6 to 20 samples per month	$ 15.00
Storage for 21 to 50 samples per month	$ 30.00
Storage for 51 to 200 samples per month	$ 60.00
Storage for more than 200 samples per month	$ 110.00

☐ Return Sample, collect, to the address below via:

- ☐ Greyhound
- ☐ Loomis
- ☐ Purolator
- ☐ Other (specify) _____

Name _____

Company _____

Address _____

_____

Phone _____

Fax _____

Signature _____

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Reference Number	693139-1	693139-2	693139-3
Sample Date	Jul 13, 2009	Jul 13, 2009	Jul 13, 2009
Sample Time	NA	NA	NA
Sample Location			
Sample Description	H09S-1	H09S-2	H09S-3
Matrix	Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Phosphorus	Dissolved	mg/L	0.06	0.08	0.06	0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	13.4	13.6	12.3	0.05
Sulfur	Dissolved	mg/L	10.1	10.9	10.5	0.3
Mercury	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Aluminum	Dissolved	mg/L	0.006	0.008	0.008	0.002
Antimony	Dissolved	mg/L	0.0003	0.0002	0.0003	0.0002
Arsenic	Dissolved	mg/L	0.0057	0.0183	0.0021	0.0002
Barium	Dissolved	mg/L	0.063	0.070	0.073	0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron	Dissolved	mg/L	0.392	0.394	0.404	0.002
Cadmium	Dissolved	mg/L	<0.00001	<0.00001	<0.00001	0.00001
Chromium	Dissolved	mg/L	<0.0005	0.0006	0.0010	0.0005
Cobalt	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Lead	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Lithium	Dissolved	mg/L	0.009	0.011	0.009	0.001
Molybdenum	Dissolved	mg/L	0.019	0.020	0.021	0.001
Nickel	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Selenium	Dissolved	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Silver	Dissolved	mg/L	<0.00001	<0.00001	<0.00001	0.00001
Strontium	Dissolved	mg/L	0.250	0.264	0.223	0.001
Thallium	Dissolved	mg/L	<0.00005	<0.00005	<0.00005	0.00005
Tin	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Titanium	Dissolved	mg/L	0.0007	0.0007	0.0009	0.0005
Uranium	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Vanadium	Dissolved	mg/L	0.0019	0.0021	0.0023	0.0001
Zinc	Dissolved	mg/L	0.001	0.001	0.007	0.001
Subsample	Field Filtered		Field Filtered	Field Filtered	Field Filtered	
Routine Water						
pH			8.30	8.25	8.21	
Temperature of observed pH		°C	21.2	21.2	21.0	
Electrical Conductivity		µS/cm at 25 C	733	733	713	1
Calcium	Dissolved	mg/L	14.3	12.6	13.2	0.2
Magnesium	Dissolved	mg/L	13.7	10.5	11.4	0.2

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Reference Number	693139-1	693139-2	693139-3
Sample Date	Jul 13, 2009	Jul 13, 2009	Jul 13, 2009
Sample Time	NA	NA	NA
Sample Location			
Sample Description	H09S-1	H09S-2	H09S-3
Matrix	Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Routine Water - Continued						
Sodium	Dissolved	mg/L	140	148	141	0.4
Potassium	Dissolved	mg/L	3.0	3.8	2.6	0.4
Iron	Dissolved	mg/L	0.03	0.03	0.01	0.01
Manganese	Dissolved	mg/L	0.019	0.016	0.017	0.005
Chloride	Dissolved	mg/L	26.3	25.0	26.1	0.4
Fluoride		mg/L	0.37	0.36	0.33	0.05
Nitrate - N		mg/L	<0.01	<0.01	0.01	0.01
Nitrite - N		mg/L	<0.005	<0.005	<0.005	0.005
Nitrate and Nitrite - N		mg/L	<0.01	<0.01	0.01	0.01
Sulfate (SO4)	Dissolved	mg/L	30.3	32.6	31.6	0.9
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	417	418	398	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	342	343	326	5
Total Dissolved Solids	Calculated	mg/L	433	439	422	1
Hardness	Dissolved as CaCO3	mg/L	92.1	75.0	79.8	
Ionic Balance	Dissolved	%	98	98	98	

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Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

	Reference Number	693139-4	693139-5	693139-6	
	Sample Date	Jul 13, 2009	Jul 14, 2009	Jul 14, 2009	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	H09S-4	H09S-7	H09S-10	
	Matrix	Water	Water	Water	
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Phosphorus	Dissolved	mg/L	0.07	0.11	<0.05	0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	11.9	5.49	0.68	0.05
Sulfur	Dissolved	mg/L	11.8	390	90.8	0.3
Mercury	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Aluminum	Dissolved	mg/L	0.006	0.007	0.02	0.002
Antimony	Dissolved	mg/L	0.0004	0.0006	0.001	0.0002
Arsenic	Dissolved	mg/L	0.0030	0.0024	0.0085	0.0002
Barium	Dissolved	mg/L	0.058	0.035	0.046	0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0002	<0.0002	0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.001	<0.001	0.0005
Boron	Dissolved	mg/L	0.408	0.054	0.043	0.002
Cadmium	Dissolved	mg/L	<0.00001	<0.00002	0.00003	0.00001
Chromium	Dissolved	mg/L	0.0005	<0.001	<0.001	0.0005
Cobalt	Dissolved	mg/L	<0.0001	0.0006	0.0004	0.0001
Copper	Dissolved	mg/L	<0.001	0.005	0.003	0.001
Lead	Dissolved	mg/L	<0.0001	0.0061	0.001	0.0001
Lithium	Dissolved	mg/L	0.009	0.023	0.024	0.001
Molybdenum	Dissolved	mg/L	0.021	<0.002	0.007	0.001
Nickel	Dissolved	mg/L	<0.0005	0.0243	0.010	0.0005
Selenium	Dissolved	mg/L	<0.0002	0.0005	<0.0004	0.0002
Silver	Dissolved	mg/L	<0.00001	<0.00002	<0.00002	0.00001
Strontium	Dissolved	mg/L	0.280	1.13	0.635	0.001
Thallium	Dissolved	mg/L	<0.00005	<0.0001	<0.0001	0.00005
Tin	Dissolved	mg/L	<0.001	<0.002	<0.002	0.001
Titanium	Dissolved	mg/L	0.0008	0.012	0.0043	0.0005
Uranium	Dissolved	mg/L	<0.0005	0.0055	0.016	0.0005
Vanadium	Dissolved	mg/L	0.0018	0.002	0.0030	0.0001
Zinc	Dissolved	mg/L	0.001	0.02	0.007	0.001
Subsample	Field Filtered		Field Filtered	Field Filtered	Field Filtered	
Routine Water						
pH			8.37	7.89	8.20	
Temperature of observed pH		°C	20.9	21.0	21.3	
Electrical Conductivity		µS/cm at 25 C	692	2680	1970	1
Calcium	Dissolved	mg/L	12.7	165	51.1	0.2
Magnesium	Dissolved	mg/L	12.0	293	144	0.2

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

		Reference Number	693139-4	693139-5	693139-6
		Sample Date	Jul 13, 2009	Jul 14, 2009	Jul 14, 2009
		Sample Time	NA	NA	NA
		Sample Location			
		Sample Description	H09S-4	H09S-7	H09S-10
		Matrix	Water	Water	Water
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Routine Water - Continued						
Sodium	Dissolved	mg/L	136	145	236	0.4
Potassium	Dissolved	mg/L	2.1	8.9	12	0.4
Iron	Dissolved	mg/L	0.02	0.40	0.12	0.01
Manganese	Dissolved	mg/L	0.017	0.667	0.036	0.005
Chloride	Dissolved	mg/L	27.1	17.7	16.4	0.4
Fluoride		mg/L	0.33	0.5	0.56	0.05
Nitrate - N		mg/L	0.02	<0.05	<0.05	0.01
Nitrite - N		mg/L	<0.005	<0.02	<0.02	0.005
Nitrate and Nitrite - N		mg/L	0.02	<0.07	<0.07	0.01
Sulfate (SO4)	Dissolved	mg/L	35.3	1170	272	0.9
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	379	743	1200	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	311	609	986	5
Total Dissolved Solids	Calculated	mg/L	412	2160	1320	1
Hardness	Dissolved as CaCO3	mg/L	81.2	1620	720	
Ionic Balance	Dissolved	%	99	105	97	

Bodycote TESTING GROUP

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	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

		Reference Number	693139-7	693139-8	693139-9
		Sample Date	Jul 14, 2009	Jul 14, 2009	Jul 14, 2009
		Sample Time	NA	NA	NA
		Sample Location			
		Sample Description	H09S-11	H09S-12	H09S-13
		Matrix	Water	Water	Water
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Phosphorus	Dissolved	mg/L	<0.05	<0.05	0.09	0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	5.61	11.9	10.8	0.05
Sulfur	Dissolved	mg/L	39.4	359	1080	0.3
Mercury	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Aluminum	Dissolved	mg/L	<0.005	0.008	0.060	0.002
Antimony	Dissolved	mg/L	0.0004	0.0005	0.001	0.0002
Arsenic	Dissolved	mg/L	0.0002	0.0027	0.014	0.0002
Barium	Dissolved	mg/L	0.028	0.02	0.01	0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0002	<0.0005	0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.001	<0.002	0.0005
Boron	Dissolved	mg/L	0.050	0.087	0.20	0.002
Cadmium	Dissolved	mg/L	0.00001	0.00003	<0.00005	0.00001
Chromium	Dissolved	mg/L	0.0008	<0.001	<0.002	0.0005
Cobalt	Dissolved	mg/L	<0.0001	0.0003	0.0007	0.0001
Copper	Dissolved	mg/L	<0.001	0.002	0.007	0.001
Lead	Dissolved	mg/L	<0.0001	0.0009	0.001	0.0001
Lithium	Dissolved	mg/L	0.009	0.041	0.080	0.001
Molybdenum	Dissolved	mg/L	0.006	<0.002	<0.005	0.001
Nickel	Dissolved	mg/L	<0.0005	0.0070	0.018	0.0005
Selenium	Dissolved	mg/L	0.0032	<0.0004	<0.001	0.0002
Silver	Dissolved	mg/L	<0.00001	<0.00002	<0.00005	0.00001
Strontium	Dissolved	mg/L	0.450	0.922	0.46	0.001
Thallium	Dissolved	mg/L	<0.00005	<0.0001	<0.0002	0.00005
Tin	Dissolved	mg/L	<0.001	<0.002	<0.005	0.001
Titanium	Dissolved	mg/L	0.0013	0.011	0.038	0.0005
Uranium	Dissolved	mg/L	0.0018	<0.001	0.004	0.0005
Vanadium	Dissolved	mg/L	0.0015	0.001	0.004	0.0001
Zinc	Dissolved	mg/L	0.002	0.01	0.02	0.001
Subsample	Field Filtered		Field Filtered	Field Filtered	Field Filtered	
Routine Water						
pH			7.94	8.19	8.49	
Temperature of observed pH		°C	21.7	21.4	21.3	
Electrical Conductivity		µS/cm at 25 C	759	2550	5700	1
Calcium	Dissolved	mg/L	79.4	118	52.8	0.2
Magnesium	Dissolved	mg/L	44.8	367	962	0.2

Bodycote TESTING GROUP

Analytical Report

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	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Reference Number		693139-7	693139-8	693139-9
Sample Date		Jul 14, 2009	Jul 14, 2009	Jul 14, 2009
Sample Time		NA	NA	NA
Sample Location				
Sample Description		H09S-11	H09S-12	H09S-13
Matrix		Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Routine Water - Continued						
Sodium	Dissolved	mg/L	22.1	40.2	334	0.4
Potassium	Dissolved	mg/L	4.5	12	42	0.4
Iron	Dissolved	mg/L	<0.01	0.21	0.18	0.01
Manganese	Dissolved	mg/L	<0.005	0.092	<0.02	0.005
Chloride	Dissolved	mg/L	1.4	1.4	17.9	0.4
Fluoride		mg/L	0.19	<0.2	<0.5	0.05
Nitrate - N		mg/L	0.11	<0.05	<0.1	0.01
Nitrite - N		mg/L	<0.005	<0.02	<0.05	0.005
Nitrate and Nitrite - N		mg/L	0.11	<0.07	<0.1	0.01
Sulfate (SO4)	Dissolved	mg/L	118	1080	3250	0.9
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	79	6
Bicarbonate		mg/L	386	855	1290	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	66	5
T-Alkalinity	as CaCO3	mg/L	317	702	1190	5
Total Dissolved Solids	Calculated	mg/L	460	2030	5380	1
Hardness	Dissolved as CaCO3	mg/L	382	1800	4090	
Ionic Balance	Dissolved	%	99	105	106	

Bodycote TESTING GROUP

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	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

		Reference Number	693139-10	693139-11	693139-12
		Sample Date	Jul 15, 2009	Jul 16, 2009	Jul 16, 2009
		Sample Time	NA	NA	NA
		Sample Location			
		Sample Description	H09S-19	H09S-24	H09S-25
		Matrix	Water	Water	Water

Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Phosphorus	Dissolved	mg/L	0.08	<0.05	<0.05	0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	12.8	10.9	8.36	0.05
Sulfur	Dissolved	mg/L	10.3	11.0	562	0.3
Mercury	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Aluminum	Dissolved	mg/L	0.020	0.012	0.02	0.002
Antimony	Dissolved	mg/L	0.0004	0.0005	0.002	0.0002
Arsenic	Dissolved	mg/L	0.0108	0.0071	0.039	0.0002
Barium	Dissolved	mg/L	0.057	0.056	0.02	0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0001	<0.0005	0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.0005	<0.002	0.0005
Boron	Dissolved	mg/L	0.389	0.356	0.567	0.002
Cadmium	Dissolved	mg/L	0.00002	0.00001	<0.00005	0.00001
Chromium	Dissolved	mg/L	<0.0005	<0.0005	<0.002	0.0005
Cobalt	Dissolved	mg/L	0.0001	0.0001	0.001	0.0001
Copper	Dissolved	mg/L	<0.001	0.001	<0.005	0.001
Lead	Dissolved	mg/L	<0.0001	<0.0001	0.002	0.0001
Lithium	Dissolved	mg/L	0.008	0.008	0.082	0.001
Molybdenum	Dissolved	mg/L	0.019	0.020	0.009	0.001
Nickel	Dissolved	mg/L	<0.0005	<0.0005	0.023	0.0005
Selenium	Dissolved	mg/L	<0.0002	<0.0002	<0.001	0.0002
Silver	Dissolved	mg/L	<0.00001	<0.00001	<0.00005	0.00001
Strontium	Dissolved	mg/L	0.211	0.267	1.34	0.001
Thallium	Dissolved	mg/L	<0.00005	<0.00005	<0.0002	0.00005
Tin	Dissolved	mg/L	0.001	<0.001	<0.005	0.001
Titanium	Dissolved	mg/L	0.0015	0.0012	0.018	0.0005
Uranium	Dissolved	mg/L	<0.0005	<0.0005	0.003	0.0005
Vanadium	Dissolved	mg/L	0.0021	0.0016	0.003	0.0001
Zinc	Dissolved	mg/L	0.002	0.002	0.02	0.001
Subsample	Field Filtered		Field Filtered	Field Filtered	Field Filtered	
Routine Water						
pH			8.39	8.42	8.34	
Temperature of observed pH		°C	21.1	20.8	20.9	
Electrical Conductivity		µS/cm at 25 C	735	684	4070	1
Calcium	Dissolved	mg/L	11.3	13.6	97.6	0.2
Magnesium	Dissolved	mg/L	10.4	12.4	482	0.2

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Reference Number		693139-10	693139-11	693139-12
Sample Date		Jul 15, 2009	Jul 16, 2009	Jul 16, 2009
Sample Time		NA	NA	NA
Sample Location				
Sample Description		H09S-19	H09S-24	H09S-25
Matrix		Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Routine Water - Continued						
Sodium	Dissolved	mg/L	147	131	390	0.4
Potassium	Dissolved	mg/L	2.6	2.7	36	0.4
Iron	Dissolved	mg/L	0.03	0.05	0.42	0.01
Manganese	Dissolved	mg/L	0.024	<0.005	<0.02	0.005
Chloride	Dissolved	mg/L	23.9	23.5	17.4	0.4
Fluoride		mg/L	0.34	0.34	0.4	0.05
Nitrate - N		mg/L	0.11	0.02	<0.05	0.01
Nitrite - N		mg/L	<0.005	<0.005	<0.02	0.005
Nitrate and Nitrite - N		mg/L	0.11	0.02	<0.07	0.01
Sulfate (SO4)	Dissolved	mg/L	31.0	33.1	1680	0.9
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	7	11	6
Bicarbonate		mg/L	415	366	1420	5
P-Alkalinity	as CaCO3	mg/L	<5	6	10	5
T-Alkalinity	as CaCO3	mg/L	341	312	1180	5
Total Dissolved Solids	Calculated	mg/L	431	403	3420	1
Hardness	Dissolved as CaCO3	mg/L	71.0	85.1	2230	
Ionic Balance	Dissolved	%	97	98	106	

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Reference Number	693139-13
Sample Date	Jul 16, 2009
Sample Time	NA
Sample Location	
Sample Description	H09S-26
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Phosphorus	Dissolved	mg/L	0.10			0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	4.2			0.05
Sulfur	Dissolved	mg/L	2160			0.3
Mercury	Dissolved	mg/L	<0.0001			0.0001
Aluminum	Dissolved	mg/L	0.01			0.002
Antimony	Dissolved	mg/L	0.002			0.0002
Arsenic	Dissolved	mg/L	0.0072			0.0002
Barium	Dissolved	mg/L	0.03			0.001
Beryllium	Dissolved	mg/L	<0.0005			0.0001
Bismuth	Dissolved	mg/L	<0.002			0.0005
Boron	Dissolved	mg/L	0.01			0.002
Cadmium	Dissolved	mg/L	<0.00005			0.00001
Chromium	Dissolved	mg/L	<0.002			0.0005
Cobalt	Dissolved	mg/L	0.0009			0.0001
Copper	Dissolved	mg/L	0.01			0.001
Lead	Dissolved	mg/L	0.001			0.0001
Lithium	Dissolved	mg/L	0.05			0.001
Molybdenum	Dissolved	mg/L	<0.005			0.001
Nickel	Dissolved	mg/L	0.020			0.0005
Selenium	Dissolved	mg/L	0.003			0.0002
Silver	Dissolved	mg/L	<0.00005			0.00001
Strontium	Dissolved	mg/L	2.94			0.001
Thallium	Dissolved	mg/L	<0.0002			0.00005
Tin	Dissolved	mg/L	<0.005			0.001
Titanium	Dissolved	mg/L	0.0695			0.0005
Uranium	Dissolved	mg/L	0.026			0.0005
Vanadium	Dissolved	mg/L	0.003			0.0001
Zinc	Dissolved	mg/L	0.03			0.001
Subsample	Field Filtered		Field Filtered			

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Analytical Report

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Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

	Reference Number	693139-13	693139-14	693139-15	
	Sample Date	Jul 16, 2009	Jul 13, 2009	Jul 13, 2009	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	H09S-26	H09S-1D	H09S-2D	
	Matrix	Water	Water	Water	
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Routine Water						
pH			8.27			
Temperature of observed pH		°C	20.9			
Electrical Conductivity		µS/cm at 25 C	8730			1
Calcium	Dissolved	mg/L	295			0.2
Magnesium	Dissolved	mg/L	1500			0.2
Sodium	Dissolved	mg/L	569			0.4
Potassium	Dissolved	mg/L	26			0.4
Iron	Dissolved	mg/L	0.29			0.01
Manganese	Dissolved	mg/L	0.49			0.005
Chloride	Dissolved	mg/L	15.5			0.4
Fluoride		mg/L	<0.5			0.05
Nitrate - N		mg/L	<0.1			0.01
Nitrite - N		mg/L	<0.05			0.005
Nitrate and Nitrite - N		mg/L	<0.1			0.01
Sulfate (SO4)	Dissolved	mg/L	6500			0.9
Hydroxide		mg/L	<5			5
Carbonate		mg/L	<6			6
Bicarbonate		mg/L	914			5
P-Alkalinity	as CaCO3	mg/L	<5			5
T-Alkalinity	as CaCO3	mg/L	749			5
Total Dissolved Solids	Calculated	mg/L	9350			1
Hardness	Dissolved as CaCO3	mg/L	6910			
Ionic Balance	Dissolved	%	109			
Silicon	Dissolved	mg/L		1.96	1.20	0.05

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Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

		Reference Number	693139-16	693139-17	693139-18	
		Sample Date	Jul 13, 2009	Jul 13, 2009	Jul 14, 2009	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	H09S-3D	H09S-4D	H09S-7D	
		Matrix	Water	Water	Water	
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Routine Water						
Silicon	Dissolved	mg/L	1.48	1.25	0.65	0.05

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Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Reference Number		693139-19	693139-20	693139-21	
Sample Date		Jul 14, 2009	Jul 14, 2009	Jul 14, 2009	
Sample Time		NA	NA	NA	
Sample Location					
Sample Description		H09S-10D	H09S-11D	H09S-12D	
Matrix		Water	Water	Water	
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Routine Water						
Silicon	Dissolved	mg/L	0.18	0.69	1.48	0.05

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Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

		Reference Number	693139-22	693139-23	693139-24
		Sample Date	Jul 14, 2009	Jul 15, 2009	Jul 16, 2009
		Sample Time	NA	NA	NA
		Sample Location			
		Sample Description	H09S-13D	H09S-19D	H09S-24D
		Matrix	Water	Water	Water
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Routine Water						
Silicon	Dissolved	mg/L	1.48	1.53	1.04	0.05

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Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Reference Number	693139-25	693139-26	
Sample Date	Jul 16, 2009	Jul 16, 2009	
Sample Time	NA	NA	
Sample Location			
Sample Description	H09S-25D	H09S-26D	
Matrix	Water	Water	

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Routine Water						
Silicon	Dissolved	mg/L	1.27	0.50		0.05

Approved by: Andrew Garrard

Andrew Garrard, BSc
General Manager

Bodycote TESTING GROUP

Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Inorganic Nonmetallic Parameters

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Phosphorus	mg/L	<0.05	-0.05	0.11	yes
Date Acquired:	July 21, 2009				

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Phosphorus	mg/L	0.06	0.06	10	0.20	yes
Date Acquired:	July 21, 2009					

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Phosphorus	mg/L	7.96	7.67	8.45	yes
Date Acquired:	July 21, 2009				
Phosphorus	mg/L	1.99	1.82	2.12	yes
Date Acquired:	July 21, 2009				

Metals Dissolved

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Silicon	mg/L	<0.05	-0.04	0.05	yes
Sulfur	mg/L	<0.3	-0.3	0.3	yes
Mercury	mg/L	<0.0001	-0.0598	0.0602	yes
Aluminum	ug/L	<2	-5	5	yes
Antimony	ug/L	<0.2	-0.2	0.2	yes
Arsenic	ug/L	<0.2	-0.2	0.2	yes
Barium	ug/L	<1	-1	1	yes
Beryllium	ug/L	<0.1	-0.0	0.1	yes
Bismuth	ug/L	<0.5	-1.5	1.5	yes
Boron	ug/L	<2	-2	2	yes
Cadmium	ug/L	<0.01	-0.01	0.01	yes
Chromium	ug/L	<0.5	-0.3	0.3	yes
Cobalt	ug/L	<0.1	-0.1	0.1	yes
Copper	ug/L	<1	-1	1	yes
Lead	ug/L	<0.1	-0.1	0.1	yes
Lithium	ug/L	<1	-1	1	yes
Molybdenum	ug/L	<1	-1	1	yes
Nickel	ug/L	<0.5	-0.5	0.5	yes
Selenium	ug/L	<0.2	-0.2	0.2	yes
Silver	ug/L	<0.01	-0.10	0.10	yes
Strontium	ug/L	<1	-1	1	yes
Thallium	ug/L	<0.05	-0.05	0.05	yes
Tin	ug/L	<1	-1	1	yes
Titanium	ug/L	<0.5	-0.5	0.5	yes
Uranium	ug/L	<0.5	-0.5	0.5	yes
Vanadium	ug/L	<0.1	-0.1	0.1	yes

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Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Metals Dissolved - Continued

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Zinc	ug/L	<1	-0	2	yes
Date Acquired:	July 21, 2009				

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Silicon	mg/L	10.8	10.7	10	0.01	yes
Sulfur	mg/L	90	80	10	0.1	yes
Mercury	mg/L	<0.0001	<0.0001	10	0.0003	yes
Aluminum	ug/L	13	11	10	11	yes
Antimony	ug/L	0.5	0.5	10	0.4	yes
Arsenic	ug/L	<0.2	<0.2	10	0.4	yes
Barium	ug/L	66	68	10	2	yes
Beryllium	ug/L	<0.1	<0.1	10	0.2	yes
Bismuth	ug/L	<0.5	<0.5	10	1.1	yes
Boron	ug/L	19	19	10	4	yes
Cadmium	ug/L	0.02	0.02	10	0.02	yes
Chromium	ug/L	<0.5	0.5	10	1.1	yes
Cobalt	ug/L	<0.1	<0.1	10	0.2	yes
Copper	ug/L	1	1	10	2	yes
Lead	ug/L	<0.1	<0.1	10	0.2	yes
Lithium	ug/L	1	<1	10	2	yes
Molybdenum	ug/L	<1	<1	10	2	yes
Nickel	ug/L	<0.5	<0.5	10	1.1	yes
Selenium	ug/L	1.4	1.4	10	0.4	yes
Silver	ug/L	<0.01	<0.01	10	0.22	yes
Strontium	ug/L	205	198	10	2	yes
Thallium	ug/L	<0.05	<0.05	10	0.11	yes
Tin	ug/L	<1	<1	10	2	yes
Titanium	ug/L	1.0	1	10	1.1	yes
Uranium	ug/L	<0.5	<0.5	10	1.1	yes
Vanadium	ug/L	0.5	0.4	10	0.2	yes
Zinc	ug/L	4	4	10	2	yes
Date Acquired:	July 21, 2009					

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Mercury	mg/L	0.0007	0.0007	0.0009	yes
Date Acquired:	July 21, 2009				
Mercury	mg/L	0.0030	0.0025	0.0034	yes
Date Acquired:	July 21, 2009				
Mercury	mg/L	0.0008	0.0007	0.0009	yes
Aluminum	ug/L	911	851	1091	yes
Antimony	ug/L	41.6	38.6	44.2	yes
Arsenic	ug/L	37.9	37.1	43.7	yes

Bodycote TESTING GROUP

Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Metals Dissolved - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Barium	ug/L	199	184	214	yes
Beryllium	ug/L	18.5	17.2	22.6	yes
Bismuth	ug/L	102	90.6	111.0	yes
Boron	ug/L	361	348	444	yes
Cadmium	ug/L	2.07	1.75	2.35	yes
Chromium	ug/L	94.7	92.1	107.1	yes
Cobalt	ug/L	20.0	17.4	23.4	yes
Copper	ug/L	188	165	225	yes
Lead	ug/L	20.4	17.2	23.2	yes
Lithium	ug/L	196	169	229	yes
Molybdenum	ug/L	191	171	231	yes
Nickel	ug/L	93.4	83.7	113.7	yes
Selenium	ug/L	37.7	34.0	46.0	yes
Silver	ug/L	20.7	17.80	23.80	yes
Strontium	ug/L	185	166	226	yes
Thallium	ug/L	10.7	8.77	11.77	yes
Tin	ug/L	188	176	206	yes
Titanium	ug/L	92.4	85.1	115.1	yes
Uranium	ug/L	98.3	83.4	113.4	yes
Vanadium	ug/L	18.7	16.3	22.3	yes
Zinc	ug/L	187	182	218	yes
Date Acquired:	July 21, 2009				
Aluminum	ug/L	50	45	58	yes
Antimony	ug/L	2.1	1.9	2.3	yes
Arsenic	ug/L	1.9	1.7	2.3	yes
Barium	ug/L	10	1	19	yes
Beryllium	ug/L	0.9	0.8	1.1	yes
Bismuth	ug/L	4.8	4.5	5.7	yes
Boron	ug/L	18	17	23	yes
Cadmium	ug/L	0.09	0.08	0.12	yes
Chromium	ug/L	4.8	4.4	5.6	yes
Cobalt	ug/L	1.1	0.9	1.2	yes
Copper	ug/L	10	9	12	yes
Lead	ug/L	1.0	0.9	1.2	yes
Lithium	ug/L	10	9	12	yes
Molybdenum	ug/L	10	9	12	yes
Nickel	ug/L	4.8	4.2	5.7	yes
Selenium	ug/L	1.8	1.7	2.3	yes
Silver	ug/L	0.87	0.87	1.17	yes
Strontium	ug/L	10	9	12	yes
Thallium	ug/L	0.54	0.47	0.56	yes
Tin	ug/L	10	8	11	yes

Bodycote TESTING GROUP

Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Metals Dissolved - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Titanium	ug/L	4.8	4.3	5.8	yes
Uranium	ug/L	5.2	4.4	5.9	yes
Vanadium	ug/L	1	0.9	1.2	yes
Zinc	ug/L	10	9	12	yes
Date Acquired:	July 21, 2009				
Silicon	mg/L	10.1	9.01	10.99	yes
Sulfur	mg/L	49.6	45.0	55.0	yes
Date Acquired:	July 21, 2009				
Silicon	mg/L	0.20	0.18	0.22	yes
Sulfur	mg/L	1	0.9	1.1	yes
Date Acquired:	July 21, 2009				

Routine Water

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Silicon	mg/L	<0.05	-0.03	0.03	yes
Date Acquired:	July 21, 2009				
Silicon	mg/L	<0.05	-0.06	0.06	yes
Date Acquired:	July 21, 2009				
Calcium	mg/L	<0.2	-0.1	0.2	yes
Magnesium	mg/L	<0.2	-0.1	0.1	yes
Sodium	mg/L	<0.4	-0.4	0.4	yes
Potassium	mg/L	<0.4	-0.4	0.4	yes
Iron	mg/L	<0.01	-0.01	0.01	yes
Manganese	mg/L	<0.005	-0.003	0.005	yes
Chloride	mg/L	<0.4	-0.4	0.4	yes
Fluoride	mg/L	<0.05	-0.05	0.05	yes
Nitrate - N	mg/L	<0.01	-0.01	0.01	yes
Nitrite - N	mg/L	<0.005	-0.005	0.005	yes
Date Acquired:	July 21, 2009				

Calibration Check	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
Silicon	mg/L	96.74	90	110	yes
Date Acquired:	July 21, 2009				

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
pH		6.18	6.25	10	0.10	yes
Electrical Conductivity	dS/m at 25 C	0.107	0.108	10	0.002	yes
Calcium	mg/L	52.8	52.3	10	0.6	yes
Magnesium	mg/L	962	952	10	0.7	yes
Sodium	mg/L	334	330	10	1.2	yes

Bodycote TESTING GROUP

Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Routine Water - Continued

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Potassium	mg/L	42	41	10	1.2	yes
Iron	mg/L	0.18	0.17	10	0.05	yes
Manganese	mg/L	<0.02	<0.02	10	0.010	yes
Chloride	mg/L	2.0	1.9	10	0.5	yes
Fluoride	mg/L	0.4	0.4	10	0.05	yes
Nitrate - N	mg/L	1.78	1.82	10	0.01	yes
Nitrite - N	mg/L	<0.02	<0.02	10	0.010	yes
Hydroxide	mg/L	<5	<5	10		yes
Carbonate	mg/L	<6	<6	10		yes
Bicarbonate	mg/L	27	32	10		yes
P-Alkalinity	mg/L	<5	<5	10	5	yes
T-Alkalinity	mg/L	22	26	10	5	yes
Date Acquired: July 21, 2009						
Silicon	mg/L	1.96	1.98	30	0.15	yes
Date Acquired: July 21, 2009						

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Chloride	mg/L	2070	1900.0	2230.0	yes
Date Acquired: July 22, 2009					
pH		9.18	9.07	9.27	yes
Electrical Conductivity	dS/m at 25 C	2.78	2.620	2.860	yes
Calcium	mg/L	240	225.1	274.9	yes
Magnesium	mg/L	96.9	88.0	108.0	yes
Sodium	mg/L	240	225.1	274.9	yes
Potassium	mg/L	241	225.1	274.9	yes
Iron	mg/L	9.46	9.01	10.99	yes
Manganese	mg/L	2.39	2.251	2.749	yes
Chloride	mg/L	82.0	76.1	85.1	yes
Fluoride	mg/L	10.1	9.31	10.81	yes
Nitrate - N	mg/L	10.1	9.60	10.58	yes
Nitrite - N	mg/L	9.94	9.510	10.530	yes
Nitrate and Nitrite - N	mg/L	20.2	18.09	22.11	yes
P-Alkalinity	mg/L	525	419	551	yes
T-Alkalinity	mg/L	1050	900	1100	yes
Date Acquired: July 21, 2009					
pH		6.90	6.77	6.97	yes
Electrical Conductivity	dS/m at 25 C	0.081	0.070	0.082	yes
Calcium	mg/L	5.1	4.6	5.5	yes
Magnesium	mg/L	2.0	1.8	2.2	yes
Sodium	mg/L	5.0	4.5	5.5	yes
Potassium	mg/L	5.0	4.6	5.6	yes

Bodycote TESTING GROUP

Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Routine Water - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Iron	mg/L	0.20	0.02	0.38	yes
Manganese	mg/L	0.051	0.045	0.055	yes
Chloride	mg/L	15.2	13.6	16.6	yes
Fluoride	mg/L	0.50	0.38	0.62	yes
Nitrate - N	mg/L	0.51	0.46	0.55	yes
Nitrite - N	mg/L	0.527	0.452	0.548	yes
Nitrate and Nitrite - N	mg/L	1.03	0.79	1.19	yes
P-Alkalinity	mg/L	48	22	82	yes
T-Alkalinity	mg/L	134	112	138	yes

Date Acquired: July 21, 2009

Bodycote TESTING GROUP

Methodology and Notes

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	W23101159.022
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693139**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236162

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510	21-Jul-09	BTG Edmonton
Alkalinity, pH, and EC in water	APHA	*	Electrometric Method, 4500-H+ B	21-Jul-09	BTG Edmonton
Alkalinity, pH, and EC in water	APHA	*	Titration Method, 2320 B	21-Jul-09	BTG Edmonton
Anions (Routine) by Ion Chromatography	APHA	*	Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	21-Jul-09	BTG Edmonton
Approval-Edmonton	APHA		Checking Correctness of Analyses, 1030 E	21-Jul-09	BTG Edmonton
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	22-Jul-09	BTG Edmonton
Kjeldahl Nitrogen & Phosphorus (Dissolved) in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	21-Jul-09	BTG Edmonton
Mercury (Dissolved) in water	APHA	*	Cold Vapour Atomic Absorption Spectrometric Method, 3112 B	21-Jul-09	BTG Edmonton
Metals ICP-MS (Dissolved) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	21-Jul-09	BTG Edmonton
Metals SemiTrace (Dissolved) in water	US EPA	*	Metals & Trace Elements by ICP-AES, 6010B	21-Jul-09	BTG Surrey
Metals Trace (Dissolved) in water	APHA		Hardness by Calculation, 2340 B	21-Jul-09	BTG Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	21-Jul-09	BTG Edmonton

** Bodycote method(s) based on reference method*

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted.

Bodycote TESTING GROUP

LOT: _____ Control Number _____

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis
See reverse for your nearest Bodycote location and proper sampling protocol

Billing Address:			**Copy of Report To:**		Copy of invoice:
Company:	EBA Engineering Consulting Ltd.		Company:	EBA Engineering Consulting Ltd.	Mail invoice to this address for approval ☐
Address:	Unit 6, 151 Industrial Rd Whitehorse, YT Y1A 2V3	QA/QC Report [x]	Address:	Unit 6, 151 Industrial Rd Whitehorse, YT Y1A 2V3	
		Report Result:			Report Result:
Attention:	Stephan Klump	Fax ☐	Attention:		Fax ☐
Phone:	867-668-3068	Mail [x]	Phone:	867-668-3068	Mail ☐
Fax:	867-668-4349	Courier ☐	Fax:	867-668-4349	Courier ☐
Cell:		e-mail [x]	Cell:		e-mail ☐
e-mail:	sklump@eba.ca	e-Service ☐	e-mail:		e-Service ☐

Information to be included on Report and Invoice

Project ID: W23101159.022
Project Name: Geothermal
Project Location: Yukon
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID:

RUSH **Please contact the laboratory to confirm rush dates and times before submitting samples.**

Upon filling out this section, client accepts that surcharges will be attached to this analysis

RUSH required on: All Analysis ☐ or As indicated ☐
Date Required: _____
Signature: _____
Bodycote Authorization: _____

Sample Custody (Please Print)
Sampled by: SK
Company EBA Signature
I authorize Bodycote to proceed with the work work indicated on this form:
Date: 17-Jul Initial:
Received by: MN Sample Temp. 7
Waybill #: 287 216 7262 Date 2009
Company Air North Time 18

RECEIVED

Special Instructions / Comments
All "Dissolved Metals" samples (200 ml) are field-filtered and preserved (HNO3).

FOR LAB USE ONLY
Condiftion of containers/coolers upon arrival at lab

☐ Check here if Bodycote is required to report results directly to a regulatory body (Please include contact information)

☐ Check here if you are testing POTABLE WATER for **HUMAN CONSUMPTION**

Please indicate which regulations you are required to meet:

	Sample Identification	Location	Depth IN CM M	Date/Time Sampled	Matrix	Sampling Method	↓	Number of Containers: TW33F	TDP	F	Enter tests above (✓ relevant samples below)
1	H09S-1	Jarvis		13-Jul-09	Water	Grab		☒	☒	☒	
2	H09S-2	Jarvis		13-Jul-09	Water	Grab		☒	☒	☒	
3	H09S-3	Jarvis		13-Jul-09	Water	Grab		☒	☒	☒	
4	H09S-4	Jarvis		13-Jul-09	Water	Grab		☒	☒	☒	
5	H09S-7	Jarvis		14-Jul-09	Water	Grab		☒	☒	☒	
6	H09S-10	Jarvis		14-Jul-09	Water	Grab		☒	☒	☒	
7	H09S-11	Jarvis		14-Jul-09	Water	Grab		☒	☒	☒	
8	H09S-12	Jarvis		14-Jul-09	Water	Grab		☒	☒	☒	
9	H09S-13	Jarvis		14-Jul-09	Water	Grab		☒	☒	☒	
10	H09S-19	Jarvis		15-Jul-09	Water	Grab		☒	☒	☒	
11	H09S-24	Jarvis		16-Jul-09	Water	Grab		☒	☒	☒	
12	H09S-25	Jarvis		16-Jul-09	Water	Grab		☒	☒	☒	
13	H09S-26	Jarvis		16-Jul-09	Water	Grab		☒	☒	☒	
14											
15											

NOTE: All hazardous samples must be labelled according to WHIMIS guidelines.

Bodycote TESTING GROUP

LOT: _____ Control Number _____

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

See reverse for your nearest Bodycote location and proper sampling protocol

Billing Address:			**Copy of Report To:**			Copy of invoice:
Company:	EBA Engineering Consulting Ltd.		Company:	EBA Engineering Consulting Ltd.	Mail invoice to this address for approval	☐
Address:	Unit 6, 151 Industrial Rd Whitehorse, YT Y1A 2V3	QA/QC Report [x]	Address:	Unit 6, 151 Industrial Rd Whitehorse, YT Y1A 2V3		
		Report Result:				Report Result:
Attention:	Stephan Klump	Fax [ ]	Attention:			Fax [ ]
Phone:	867-668-3068	Mail [x]	Phone:	867-668-3068		Mail [ ]
Fax:	867-668-4349	Courier [ ]	Fax:	867-668-4349		Courier [ ]
Cell:		e-mail [x]	Cell:			e-mail [ ]
e-mail:	sklump@eba.ca	e-Service [ ]	e-mail:			e-Service [ ]

Information to be included on Report and Invoice

Project ID: W23101159.022
Project Name: Geothermal
Project Location: Yukon
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID:

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

RUSH required on: All Analysis ☐ or As indicated ☐

Date Required: _____

Signature: _____

Bodycote Authorization: _____

Sample Custody (Please Print)
Sampled by: SK
Company EBA Signature

I authorize Bodycote to proceed with the work work indicated on this form:
Date: 17-Jul Initial:

Received by:	Sample Temp.
Waybill #:	Date
Company	Time

Special Instructions / Comments
All samples for Si analysis (H09S-XXD) are field-filtered and preserved (HNO3).

FOR LAB USE ONLY
Condiftion of containers/coolers upon arrival at lab

☐ Check here if Bodycote is required to report results directly to a regulatory body (Please include contact information)

☐ Check here if you are testing POTABLE WATER for **HUMAN CONSUMPTION**

Please indicate which regulations you are required to meet:

	Sample Identification	Location	Depth IN CM M	Date/Time Sampled	Matrix	Sampling Method	↓	Number of Containers: Si
								Enter tests above (✓ relevant samples below)
1	H09S-1D	Jarvis		13-Jul-09	Water	Grab		☒
2	H09S-2D	Jarvis		13-Jul-09	Water	Grab		☒
3	H09S-3D	Jarvis		13-Jul-09	Water	Grab		☒
4	H09S-4D	Jarvis		13-Jul-09	Water	Grab		☒
5	H09S-7D	Jarvis		14-Jul-09	Water	Grab		☒
6	H09S-10D	Jarvis		14-Jul-09	Water	Grab		☒
7	H09S-11D	Jarvis		14-Jul-09	Water	Grab		☒
8	H09S-12D	Jarvis		14-Jul-09	Water	Grab		☒
9	H09S-13D	Jarvis		14-Jul-09	Water	Grab		☒
10	H09S-19D	Jarvis		15-Jul-09	Water	Grab		☒
11	H09S-24D	Jarvis		16-Jul-09	Water	Grab		☒
12	H09S-25D	Jarvis		16-Jul-09	Water	Grab		☒
13	H09S-26D	Jarvis		16-Jul-09	Water	Grab		☒
14								
15								

NOTE: All hazardous samples must be labelled according to WHIMIS guidelines.

Bodycote TESTING GROUP

Report Transmission Cover Page

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Approval Status:	Approved
Invoice Frequency:	by Lot
COD Status:	
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Contact & Affiliation	Address	Delivery Commitments
Stephan Klump EBA Engineering - Edmonton	Unit 6, 151 Industrial Road, Calcite Business Whitehorse, Yukon Territory Y1A 2V3 Phone: (867) 668-2071 Fax: (867) 668-4349 Email: sklump@eba.ca	On [Lot Verification] send (COA) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Report Approval] send (Test Report) by Email - Single Report On [Lot Approval and Final Test Report Approval] send (COC, Test Report, Invoice) by Post M

Notes To Clients:

Bodycote TESTING GROUP

Sample Custody

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Sample Disposal Date: October 20, 2009

All samples will be stored until this date unless other instructions are received. Please indicate other requirements below and return this form to the address or fax number on the bottom of this page.

☐ Extend Sample Storage Until _____ (MM/DD/YY)

The following charges apply to extended sample storage:

Storage for 1 to 5 samples per month	$ 10.00
Storage for 6 to 20 samples per month	$ 15.00
Storage for 21 to 50 samples per month	$ 30.00
Storage for 51 to 200 samples per month	$ 60.00
Storage for more than 200 samples per month	$ 110.00

☐ Return Sample, collect, to the address below via:

- ☐ Greyhound
- ☐ Loomis
- ☐ Purolator
- ☐ Other (specify) _____

Name _____

Company _____

Address _____

_____

Phone _____

Fax _____

Signature _____

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Reference Number	693150-1	693150-2	693150-3
Sample Date	Jul 14, 2009	Jul 14, 2009	Jul 15, 2009
Sample Time	NA	NA	NA
Sample Location			
Sample Description	H09S-16	H09S-17	H09S-20
Matrix	Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Phosphorus	Dissolved	mg/L	0.06	<0.05	<0.05	0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	1.74	2.44	4.79	0.05
Sulfur	Dissolved	mg/L	21.1	46.1	9.4	0.3
Mercury	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Aluminum	Dissolved	mg/L	0.013	<0.005	0.015	0.002
Antimony	Dissolved	mg/L	0.0005	0.0003	0.0005	0.0002
Arsenic	Dissolved	mg/L	<0.0002	<0.0002	0.0004	0.0002
Barium	Dissolved	mg/L	0.066	0.030	0.069	0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron	Dissolved	mg/L	0.019	0.024	0.050	0.002
Cadmium	Dissolved	mg/L	0.00002	0.00002	0.00002	0.00001
Chromium	Dissolved	mg/L	<0.0005	<0.0005	0.0006	0.0005
Cobalt	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Copper	Dissolved	mg/L	0.001	<0.001	<0.001	0.001
Lead	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Lithium	Dissolved	mg/L	0.001	0.001	0.003	0.001
Molybdenum	Dissolved	mg/L	<0.001	0.002	0.003	0.001
Nickel	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Selenium	Dissolved	mg/L	0.0014	0.0028	0.0010	0.0002
Silver	Dissolved	mg/L	<0.00001	<0.00001	<0.00001	0.00001
Strontium	Dissolved	mg/L	0.205	0.430	0.213	0.001
Thallium	Dissolved	mg/L	<0.00005	<0.00005	<0.00005	0.00005
Tin	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Titanium	Dissolved	mg/L	0.0010	0.0013	0.0009	0.0005
Uranium	Dissolved	mg/L	<0.0005	0.0007	0.0006	0.0005
Vanadium	Dissolved	mg/L	0.0005	0.0005	0.0008	0.0001
Zinc	Dissolved	mg/L	0.004	0.002	0.003	0.001
Subsample	Field Filtered		Field Filtered	Field Filtered	Field Filtered	
Routine Water						
pH			8.12	8.08	8.04	
Temperature of observed pH		°C	20.6	21.3	21.4	
Electrical Conductivity		µS/cm at 25 C	299	509	419	1
Calcium	Dissolved	mg/L	42.1	70.4	60.8	0.2
Magnesium	Dissolved	mg/L	9.9	22.2	17.3	0.2

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

		Reference Number	693150-1	693150-2	693150-3
		Sample Date	Jul 14, 2009	Jul 14, 2009	Jul 15, 2009
		Sample Time	NA	NA	NA
		Sample Location			
		Sample Description	H09S-16	H09S-17	H09S-20
		Matrix	Water	Water	Water
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Routine Water - Continued						
Sodium	Dissolved	mg/L	4.5	2.4	3.9	0.4
Potassium	Dissolved	mg/L	0.6	2.5	2.4	0.4
Iron	Dissolved	mg/L	0.01	<0.01	<0.01	0.01
Manganese	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005
Chloride	Dissolved	mg/L	0.4	0.7	0.5	0.4
Fluoride		mg/L	<0.05	0.11	0.07	0.05
Nitrate - N		mg/L	0.09	0.11	0.14	0.01
Nitrite - N		mg/L	<0.005	<0.005	<0.005	0.005
Nitrate and Nitrite - N		mg/L	0.09	0.11	0.14	0.01
Sulfate (SO4)	Dissolved	mg/L	63.2	138	28	0.9
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	111	158	253	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	91	130	207	5
Total Dissolved Solids	Calculated	mg/L	175	314	240	1
Hardness	Dissolved as CaCO3	mg/L	146	267	223	
Ionic Balance	Dissolved	%	99	100	99	

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Reference Number		693150-4	693150-5	693150-6
Sample Date		Jul 16, 2009	Jul 16, 2009	Jul 16, 2009
Sample Time		NA	NA	NA
Sample Location				
Sample Description		H09S-27	H09S-28	H09S-29
Matrix		Water	Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Phosphorus	Dissolved	mg/L	<0.05	<0.05	<0.05	0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	5.22	5.11	2.32	0.05
Sulfur	Dissolved	mg/L	1.1	1.1	15.0	0.3
Mercury	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Aluminum	Dissolved	mg/L	0.016	0.006	0.007	0.002
Antimony	Dissolved	mg/L	0.0004	0.0005	0.0005	0.0002
Arsenic	Dissolved	mg/L	0.0003	0.0005	0.0005	0.0002
Barium	Dissolved	mg/L	0.030	0.034	0.005	0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron	Dissolved	mg/L	0.003	0.004	0.025	0.002
Cadmium	Dissolved	mg/L	<0.00001	0.00004	<0.00001	0.00001
Chromium	Dissolved	mg/L	<0.0005	<0.0005	0.0006	0.0005
Cobalt	Dissolved	mg/L	<0.0001	0.0001	<0.0001	0.0001
Copper	Dissolved	mg/L	<0.001	0.001	<0.001	0.001
Lead	Dissolved	mg/L	0.0001	<0.0001	<0.0001	0.0001
Lithium	Dissolved	mg/L	0.001	<0.001	<0.001	0.001
Molybdenum	Dissolved	mg/L	0.001	0.001	<0.001	0.001
Nickel	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Selenium	Dissolved	mg/L	<0.0002	<0.0002	0.0014	0.0002
Silver	Dissolved	mg/L	<0.00001	<0.00001	<0.00001	0.00001
Strontium	Dissolved	mg/L	0.076	0.102	0.316	0.001
Thallium	Dissolved	mg/L	<0.00005	<0.00005	<0.00005	0.00005
Tin	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Titanium	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Uranium	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Vanadium	Dissolved	mg/L	0.0009	0.0007	0.0007	0.0001
Zinc	Dissolved	mg/L	0.001	0.004	0.002	0.001
Subsample	Field Filtered		Field Filtered	Field Filtered	Field Filtered	
Routine Water						
pH			7.95	7.77	7.97	
Temperature of observed pH		°C	21.6	21.8	21.9	
Electrical Conductivity		µS/cm at 25 C	140	192	246	1
Calcium	Dissolved	mg/L	23.3	31.5	40.7	0.2
Magnesium	Dissolved	mg/L	3.0	4.1	4.6	0.2

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

		Reference Number	693150-4	693150-5	693150-6
		Sample Date	Jul 16, 2009	Jul 16, 2009	Jul 16, 2009
		Sample Time	NA	NA	NA
		Sample Location			
		Sample Description	H09S-27	H09S-28	H09S-29
		Matrix	Water	Water	Water
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Routine Water - Continued						
Sodium	Dissolved	mg/L	2.3	3.1	2.4	0.4
Potassium	Dissolved	mg/L	0.9	1.3	0.5	0.4
Iron	Dissolved	mg/L	0.03	0.14	0.02	0.01
Manganese	Dissolved	mg/L	<0.005	0.041	0.015	0.005
Chloride	Dissolved	mg/L	0.5	0.4	0.4	0.4
Fluoride		mg/L	<0.05	0.05	<0.05	0.05
Nitrate - N		mg/L	0.02	0.05	0.04	0.01
Nitrite - N		mg/L	<0.005	<0.005	<0.005	0.005
Nitrate and Nitrite - N		mg/L	0.02	0.05	0.04	0.01
Sulfate (SO4)	Dissolved	mg/L	3.2	3.3	44.9	0.9
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	89	124	100	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	73	102	82	5
Total Dissolved Solids	Calculated	mg/L	77	105	143	1
Hardness	Dissolved as CaCO3	mg/L	71	96	121	
Ionic Balance	Dissolved	%	100	98	98	

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Analytical Report

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Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Reference Number		693150-7	693150-8
Sample Date		Jul 16, 2009	Jul 16, 2009
Sample Time		NA	NA
Sample Location			
Sample Description		H09S-30	H09S-31
Matrix		Water	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Phosphorus	Dissolved	mg/L	<0.05	<0.05		0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	4.44	4.67		0.05
Sulfur	Dissolved	mg/L	3.4	3.3		0.3
Mercury	Dissolved	mg/L	<0.0001	<0.0001		0.0001
Aluminum	Dissolved	mg/L	0.025	0.031		0.002
Antimony	Dissolved	mg/L	0.0004	0.0010		0.0002
Arsenic	Dissolved	mg/L	0.0005	0.0025		0.0002
Barium	Dissolved	mg/L	0.012	0.018		0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0001		0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.0005		0.0005
Boron	Dissolved	mg/L	0.038	0.054		0.002
Cadmium	Dissolved	mg/L	0.00001	0.00002		0.00001
Chromium	Dissolved	mg/L	0.0012	0.0006		0.0005
Cobalt	Dissolved	mg/L	<0.0001	0.0001		0.0001
Copper	Dissolved	mg/L	<0.001	0.001		0.001
Lead	Dissolved	mg/L	<0.0001	0.0001		0.0001
Lithium	Dissolved	mg/L	0.001	0.002		0.001
Molybdenum	Dissolved	mg/L	0.001	0.002		0.001
Nickel	Dissolved	mg/L	<0.0005	<0.0005		0.0005
Selenium	Dissolved	mg/L	0.0007	0.0002		0.0002
Silver	Dissolved	mg/L	<0.00001	<0.00001		0.00001
Strontium	Dissolved	mg/L	0.317	0.310		0.001
Thallium	Dissolved	mg/L	<0.00005	<0.00005		0.00005
Tin	Dissolved	mg/L	<0.001	<0.001		0.001
Titanium	Dissolved	mg/L	0.0013	0.0008		0.0005
Uranium	Dissolved	mg/L	<0.0005	0.0005		0.0005
Vanadium	Dissolved	mg/L	0.0022	0.0021		0.0001
Zinc	Dissolved	mg/L	0.002	0.010		0.001
Subsample	Field Filtered		Field Filtered	Field Filtered		

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

	Reference Number	693150-7	693150-8	693150-9	
	Sample Date	Jul 16, 2009	Jul 16, 2009	Jul 14, 2009	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	H09S-30	H09S-31	H09S-16D	
	Matrix	Water	Water	Water	
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Routine Water						
pH			8.15	8.13		
Temperature of observed pH		°C	22.2	22.6		
Electrical Conductivity		µS/cm at 25 C	233	363		1
Calcium	Dissolved	mg/L	36.2	53.4		0.2
Magnesium	Dissolved	mg/L	6.6	12.9		0.2
Sodium	Dissolved	mg/L	3.8	6.0		0.4
Potassium	Dissolved	mg/L	0.6	1.1		0.4
Iron	Dissolved	mg/L	0.03	0.04		0.01
Manganese	Dissolved	mg/L	<0.005	0.01		0.005
Chloride	Dissolved	mg/L	0.5	2.0		0.4
Fluoride		mg/L	<0.05	0.07		0.05
Nitrate - N		mg/L	0.11	<0.01		0.01
Nitrite - N		mg/L	<0.005	<0.005		0.005
Nitrate and Nitrite - N		mg/L	0.11	<0.01		0.01
Sulfate (SO4)	Dissolved	mg/L	10	10		0.9
Hydroxide		mg/L	<5	<5		5
Carbonate		mg/L	<6	<6		6
Bicarbonate		mg/L	139	233		5
P-Alkalinity	as CaCO3	mg/L	<5	<5		5
T-Alkalinity	as CaCO3	mg/L	114	191		5
Total Dissolved Solids	Calculated	mg/L	130	200		1
Hardness	Dissolved as CaCO3	mg/L	120	186		
Ionic Balance	Dissolved	%	101	99		
Silicon	Dissolved	mg/L			0.27	0.05

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Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

		Reference Number	693150-10	693150-11	693150-12	
		Sample Date	Jul 14, 2009	Jul 15, 2009	Jul 16, 2009	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	H09S-17D	H09S-20D	H09S-27D	
		Matrix	Water	Water	Water	
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Routine Water						
Silicon	Dissolved	mg/L	0.36	0.62	0.59	0.05

Bodycote TESTING GROUP

Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

		Reference Number	693150-13	693150-14	693150-15	
		Sample Date	Jul 16, 2009	Jul 16, 2009	Jul 16, 2009	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	H09S-28D	H09S-29D	H09S-30D	
		Matrix	Water	Water	Water	
Analyte		**Units**	**Results**	**Results**	**Results**	Nominal Detection Limit
Routine Water						
Silicon	Dissolved	mg/L	0.55	0.23	0.50	0.05

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Analytical Report

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Reference Number	693150-16
Sample Date	Jul 16, 2009
Sample Time	NA
Sample Location	
Sample Description	H09S-31D
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Routine Water						
Silicon	Dissolved	mg/L	0.48			0.05

Approved by:

Andrew Garrard, BSc
General Manager

Bodycote TESTING GROUP

Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Inorganic Nonmetallic Parameters

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Phosphorus	mg/L	<0.05	-0.05	0.11	yes
Date Acquired:	July 21, 2009				

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Phosphorus	mg/L	0.06	0.06	10	0.20	yes
Date Acquired:	July 21, 2009					

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Phosphorus	mg/L	7.96	7.67	8.45	yes
Date Acquired:	July 21, 2009				
Phosphorus	mg/L	1.99	1.82	2.12	yes
Date Acquired:	July 21, 2009				

Metals Dissolved

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Silicon	mg/L	<0.05	-0.04	0.05	yes
Sulfur	mg/L	<0.3	-0.3	0.3	yes
Mercury	mg/L	<0.0001	-0.0598	0.0602	yes
Aluminum	ug/L	<2	-5	5	yes
Antimony	ug/L	<0.2	-0.2	0.2	yes
Arsenic	ug/L	<0.2	-0.2	0.2	yes
Barium	ug/L	<1	-1	1	yes
Beryllium	ug/L	<0.1	-0.0	0.1	yes
Bismuth	ug/L	<0.5	-1.5	1.5	yes
Boron	ug/L	<2	-2	2	yes
Cadmium	ug/L	<0.01	-0.01	0.01	yes
Chromium	ug/L	<0.5	-0.3	0.3	yes
Cobalt	ug/L	<0.1	-0.1	0.1	yes
Copper	ug/L	<1	-1	1	yes
Lead	ug/L	<0.1	-0.1	0.1	yes
Lithium	ug/L	<1	-1	1	yes
Molybdenum	ug/L	<1	-1	1	yes
Nickel	ug/L	<0.5	-0.5	0.5	yes
Selenium	ug/L	<0.2	-0.2	0.2	yes
Silver	ug/L	<0.01	-0.10	0.10	yes
Strontium	ug/L	<1	-1	1	yes
Thallium	ug/L	<0.05	-0.05	0.05	yes
Tin	ug/L	<1	-1	1	yes
Titanium	ug/L	<0.5	-0.5	0.5	yes
Uranium	ug/L	<0.5	-0.5	0.5	yes
Vanadium	ug/L	<0.1	-0.1	0.1	yes

Bodycote TESTING GROUP

Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Metals Dissolved - Continued

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Zinc	ug/L	<1	-0	2	yes
Date Acquired:	July 21, 2009				

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Silicon	mg/L	10.8	10.7	10	0.01	yes
Sulfur	mg/L	90	80	10	0.1	yes
Mercury	mg/L	<0.0001	<0.0001	10	0.0003	yes
Aluminum	ug/L	13	11	10	11	yes
Antimony	ug/L	0.5	0.5	10	0.4	yes
Arsenic	ug/L	<0.2	<0.2	10	0.4	yes
Barium	ug/L	66	68	10	2	yes
Beryllium	ug/L	<0.1	<0.1	10	0.2	yes
Bismuth	ug/L	<0.5	<0.5	10	1.1	yes
Boron	ug/L	19	19	10	4	yes
Cadmium	ug/L	0.02	0.02	10	0.02	yes
Chromium	ug/L	<0.5	0.5	10	1.1	yes
Cobalt	ug/L	<0.1	<0.1	10	0.2	yes
Copper	ug/L	1	1	10	2	yes
Lead	ug/L	<0.1	<0.1	10	0.2	yes
Lithium	ug/L	1	<1	10	2	yes
Molybdenum	ug/L	<1	<1	10	2	yes
Nickel	ug/L	<0.5	<0.5	10	1.1	yes
Selenium	ug/L	1.4	1.4	10	0.4	yes
Silver	ug/L	<0.01	<0.01	10	0.22	yes
Strontium	ug/L	205	198	10	2	yes
Thallium	ug/L	<0.05	<0.05	10	0.11	yes
Tin	ug/L	<1	<1	10	2	yes
Titanium	ug/L	1.0	1	10	1.1	yes
Uranium	ug/L	<0.5	<0.5	10	1.1	yes
Vanadium	ug/L	0.5	0.4	10	0.2	yes
Zinc	ug/L	4	4	10	2	yes
Date Acquired:	July 21, 2009					

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Mercury	mg/L	0.0007	0.0007	0.0009	yes
Date Acquired:	July 21, 2009				
Mercury	mg/L	0.0030	0.0025	0.0034	yes
Date Acquired:	July 21, 2009				
Mercury	mg/L	0.0008	0.0007	0.0009	yes
Aluminum	ug/L	911	851	1091	yes
Antimony	ug/L	41.6	38.6	44.2	yes
Arsenic	ug/L	37.9	37.1	43.7	yes

Bodycote TESTING GROUP

Quality Control

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Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Metals Dissolved - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Barium	ug/L	199	184	214	yes
Beryllium	ug/L	18.5	17.2	22.6	yes
Bismuth	ug/L	102	90.6	111.0	yes
Boron	ug/L	361	348	444	yes
Cadmium	ug/L	2.07	1.75	2.35	yes
Chromium	ug/L	94.7	92.1	107.1	yes
Cobalt	ug/L	20.0	17.4	23.4	yes
Copper	ug/L	188	165	225	yes
Lead	ug/L	20.4	17.2	23.2	yes
Lithium	ug/L	196	169	229	yes
Molybdenum	ug/L	191	171	231	yes
Nickel	ug/L	93.4	83.7	113.7	yes
Selenium	ug/L	37.7	34.0	46.0	yes
Silver	ug/L	20.7	17.80	23.80	yes
Strontium	ug/L	185	166	226	yes
Thallium	ug/L	10.7	8.77	11.77	yes
Tin	ug/L	188	176	206	yes
Titanium	ug/L	92.4	85.1	115.1	yes
Uranium	ug/L	98.3	83.4	113.4	yes
Vanadium	ug/L	18.7	16.3	22.3	yes
Zinc	ug/L	187	182	218	yes
Date Acquired:	July 21, 2009				
Aluminum	ug/L	50	45	58	yes
Antimony	ug/L	2.1	1.9	2.3	yes
Arsenic	ug/L	1.9	1.7	2.3	yes
Barium	ug/L	10	1	19	yes
Beryllium	ug/L	0.9	0.8	1.1	yes
Bismuth	ug/L	4.8	4.5	5.7	yes
Boron	ug/L	18	17	23	yes
Cadmium	ug/L	0.09	0.08	0.12	yes
Chromium	ug/L	4.8	4.4	5.6	yes
Cobalt	ug/L	1.1	0.9	1.2	yes
Copper	ug/L	10	9	12	yes
Lead	ug/L	1.0	0.9	1.2	yes
Lithium	ug/L	10	9	12	yes
Molybdenum	ug/L	10	9	12	yes
Nickel	ug/L	4.8	4.2	5.7	yes
Selenium	ug/L	1.8	1.7	2.3	yes
Silver	ug/L	0.87	0.87	1.17	yes
Strontium	ug/L	10	9	12	yes
Thallium	ug/L	0.54	0.47	0.56	yes
Tin	ug/L	10	8	11	yes

Bodycote TESTING GROUP

Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Metals Dissolved - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Titanium	ug/L	4.8	4.3	5.8	yes
Uranium	ug/L	5.2	4.4	5.9	yes
Vanadium	ug/L	1	0.9	1.2	yes
Zinc	ug/L	10	9	12	yes
Date Acquired:	July 21, 2009				
Silicon	mg/L	10.1	9.01	10.99	yes
Sulfur	mg/L	49.6	45.0	55.0	yes
Date Acquired:	July 21, 2009				
Silicon	mg/L	0.20	0.18	0.22	yes
Sulfur	mg/L	1	0.9	1.1	yes
Date Acquired:	July 21, 2009				

Routine Water

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Silicon	mg/L	<0.05	-0.03	0.03	yes
Date Acquired:	July 21, 2009				
Silicon	mg/L	<0.05	-0.06	0.06	yes
Date Acquired:	July 21, 2009				
Calcium	mg/L	<0.2	-0.1	0.2	yes
Magnesium	mg/L	<0.2	-0.1	0.1	yes
Sodium	mg/L	<0.4	-0.4	0.4	yes
Potassium	mg/L	<0.4	-0.4	0.4	yes
Iron	mg/L	<0.01	-0.01	0.01	yes
Manganese	mg/L	<0.005	-0.003	0.005	yes
Chloride	mg/L	<0.4	-0.4	0.4	yes
Fluoride	mg/L	<0.05	-0.05	0.05	yes
Nitrate - N	mg/L	<0.01	-0.01	0.01	yes
Nitrite - N	mg/L	<0.005	-0.005	0.005	yes
Date Acquired:	July 21, 2009				

Calibration Check	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
Silicon	mg/L	96.74	90	110	yes
Date Acquired:	July 21, 2009				

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
pH		8.12	8.09	10	0.10	yes
Electrical Conductivity	dS/m at 25 C	0.299	0.300	10	0.002	yes
Calcium	mg/L	52.8	52.3	10	0.6	yes
Magnesium	mg/L	962	952	10	0.7	yes
Sodium	mg/L	334	330	10	1.2	yes

Bodycote TESTING GROUP

Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Routine Water - Continued

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Potassium	mg/L	42	41	10	1.2	yes
Iron	mg/L	0.18	0.17	10	0.05	yes
Manganese	mg/L	<0.02	<0.02	10	0.010	yes
Chloride	mg/L	2.0	1.9	10	0.5	yes
Fluoride	mg/L	0.4	0.4	10	0.05	yes
Nitrate - N	mg/L	<0.05	<0.05	10	0.01	yes
Nitrite - N	mg/L	<0.02	<0.02	10	0.010	yes
Hydroxide	mg/L	<5	<5	10		yes
Carbonate	mg/L	<6	<6	10		yes
Bicarbonate	mg/L	27	32	10		yes
P-Alkalinity	mg/L	<5	<5	10	5	yes
T-Alkalinity	mg/L	91	91	10	5	yes
Date Acquired: July 21, 2009						
Silicon	mg/L	1.96	1.98	30	0.15	yes
Date Acquired: July 21, 2009						

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Chloride	mg/L	2070	1900.0	2230.0	yes
Date Acquired: July 22, 2009					
pH		9.18	9.07	9.27	yes
Electrical Conductivity	dS/m at 25 C	2.78	2.620	2.860	yes
Calcium	mg/L	240	225.1	274.9	yes
Magnesium	mg/L	96.9	88.0	108.0	yes
Sodium	mg/L	240	225.1	274.9	yes
Potassium	mg/L	241	225.1	274.9	yes
Iron	mg/L	9.46	9.01	10.99	yes
Manganese	mg/L	2.39	2.251	2.749	yes
Chloride	mg/L	82.1	76.1	85.1	yes
Fluoride	mg/L	10.1	9.31	10.81	yes
Nitrate - N	mg/L	10.1	9.60	10.58	yes
Nitrite - N	mg/L	9.94	9.510	10.530	yes
Nitrate and Nitrite - N	mg/L	20.2	18.09	22.11	yes
P-Alkalinity	mg/L	525	419	551	yes
T-Alkalinity	mg/L	1050	900	1100	yes
Date Acquired: July 21, 2009					
pH		6.90	6.77	6.97	yes
Electrical Conductivity	dS/m at 25 C	0.081	0.070	0.082	yes
Calcium	mg/L	5.1	4.6	5.5	yes
Magnesium	mg/L	2.0	1.8	2.2	yes
Sodium	mg/L	5.0	4.5	5.5	yes
Potassium	mg/L	5.0	4.6	5.6	yes

Bodycote TESTING GROUP

Quality Control

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Routine Water - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Iron	mg/L	0.20	0.02	0.38	yes
Manganese	mg/L	0.051	0.045	0.055	yes
Chloride	mg/L	15.2	13.6	16.6	yes
Fluoride	mg/L	0.50	0.38	0.62	yes
Nitrate - N	mg/L	0.51	0.46	0.55	yes
Nitrite - N	mg/L	0.527	0.452	0.548	yes
Nitrate and Nitrite - N	mg/L	1.03	0.79	1.19	yes
P-Alkalinity	mg/L	48	22	82	yes
T-Alkalinity	mg/L	134	112	138	yes

Date Acquired: July 21, 2009

Bodycote TESTING GROUP

Methodology and Notes

Bill To:	EBA Engineering Consulting Lt	Project:	
Report To:	EBA Engineering Consulting Lt	ID:	w23101159.015
	Calcite Business Centre	Name:	Geothermal
	Unit 6, 151 Industrial Road	Location:	Yukon
	Whitehorse, YT, Canada	LSD:	
	Y1A 2V3	P.O.:	
Attn:	Stephan Klump	Acct code:	
Sampled By:	SK		
Company:	EBA		

Lot ID:	**693150**
Control Number:	
Date Received:	Jul 20, 2009
Date Reported:	Jul 22, 2009
Report Number:	1236179

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510	21-Jul-09	BTG Edmonton
Alkalinity, pH, and EC in water	APHA	*	Electrometric Method, 4500-H+ B	21-Jul-09	BTG Edmonton
Alkalinity, pH, and EC in water	APHA	*	Titration Method, 2320 B	21-Jul-09	BTG Edmonton
Anions (Routine) by Ion Chromatography	APHA	*	Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	21-Jul-09	BTG Edmonton
Approval-Edmonton	APHA		Checking Correctness of Analyses, 1030 E	21-Jul-09	BTG Edmonton
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	22-Jul-09	BTG Edmonton
Kjeldahl Nitrogen & Phosphorus (Dissolved) in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	21-Jul-09	BTG Edmonton
Mercury (Dissolved) in water	APHA	*	Cold Vapour Atomic Absorption Spectrometric Method, 3112 B	21-Jul-09	BTG Edmonton
Metals ICP-MS (Dissolved) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	21-Jul-09	BTG Edmonton
Metals SemiTrace (Dissolved) in water	US EPA	*	Metals & Trace Elements by ICP-AES, 6010B	21-Jul-09	BTG Surrey
Metals Trace (Dissolved) in water	APHA		Hardness by Calculation, 2340 B	21-Jul-09	BTG Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	21-Jul-09	BTG Edmonton

** Bodycote method(s) based on reference method*

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted.

Bodycote TESTING GROUP

LOT: _____ Control Number _____

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

See reverse for your nearest Bodycote location and proper sampling protocol

Billing Address:			**Copy of Report To:**		Copy of invoice:
Company:	EBA Engineering Consulting Ltd.		Company:	EBA Engineering Consulting Ltd.	Mail invoice to this
Address:	Unit 6, 151 Industrial Rd Whitehorse, YT Y1A 2V3	QA/QC Report [x]	Address:	Unit 6, 151 Industrial Rd Whitehorse, YT Y1A 2V3	address for approval [ ]
		Report Result:			Report Result:
Attention:	Stephan Klump	Fax [ ]	Attention:		Fax [ ]
Phone:	867-668-3068	Mail [x]	Phone:	867-668-3068	Mail [ ]
Fax:	867-668-4349	Courier [ ]	Fax:	867-668-4349	Courier [ ]
Cell:		e-mail [x]	Cell:		e-mail [ ]
e-mail:	sklump@eba.ca	e-Service [ ]	e-mail:		e-Service [ ]

Information to be included on Report and Invoice

Project ID: W23101159.015
Project Name: Geothermal
Project Location: Yukon
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID:

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

RUSH required on: All Analysis [ ] or As indicated [ ]
Date Required: _____
Signature: _____
Bodycote Authorization: _____

Sample Custody (Please Print)
Sampled by: SK
Company EBA Signature

I authorize Bodycote to proceed with the work work indicated on this form:
Date: 17-Jul Initial:

Received by: MN Sample Temp. 7
Waybill# 216772628 Date 20 2009
Company Air North Time 110

Special Instructions / Comments
All "Dissolved Metals" samples (200 ml) are field-filtered and preserved (HNO3).
All samples for Si analysis (H09S-XXD) are field-filtered and preserved (HNO3).

FOR LAB USE ONLY
Condiftion of containers/coolers upon arrival at lab

[ ] Check here if Bodycote is required to report results directly to a regulatory body (Please include contact information)

[ ] Check here if you are testing POTABLE WATER for HUMAN CONSUMPTION

Please indicate which regulations you are required to meet:

	Sample Identification	Location	Depth IN	Depth CM	Depth M	Date/Time Sampled	Matrix	Sampling Method	Number of Containers	TM33F	TDP	F	Si	Enter tests above (✓ relevant samples below)
1	H09S-16	Jarvis				14-Jul-09	Water	Grab		☒	☒	☒		
2	H09S-17	Jarvis				14-Jul-09	Water	Grab		☒	☒	☒		
3	H09S-20	Jarvis				15-Jul-09	Water	Grab		☒	☒	☒		
4	H09S-27	Jarvis				16-Jul-09	Water	Grab		☒	☒	☒		
5	H09S-28	Jarvis				16-Jul-09	Water	Grab		☒	☒	☒		
6	H09S-29	Jarvis				16-Jul-09	Water	Grab		☒	☒	☒		
7	H09S-30	Jarvis				16-Jul-09	Water	Grab		☒	☒	☒		
8	H09S-31	Jarvis				16-Jul-09	Water	Grab		☒	☒	☒		
9	H09S-16D	Jarvis				14-Jul-09	Water	Grab					☒	
10	H09S-17D	Jarvis				14-Jul-09	Water	Grab					☒	
11	H09S-20D	Jarvis				15-Jul-09	Water	Grab					☒	
12	H09S-27D	Jarvis				16-Jul-09	Water	Grab					☒	
13	H09S-28D	Jarvis				16-Jul-09	Water	Grab					☒	
14	H09S-29D	Jarvis				16-Jul-09	Water	Grab					☒	
15	H09S-30D	Jarvis				16-Jul-09	Water	Grab					☒	

NOTE: All hazardous samples must be labelled according to WHIMIS guidelines.

Bodycote TESTING GROUP

LOT: _____ Control Number _____

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

See reverse for your nearest Bodycote location and proper sampling protocol

Billing Address:			**Copy of Report To:**			Copy of invoice:
Company:	EBA Engineering Consulting Ltd.		Company:	EBA Engineering Consulting Ltd.	Mail invoice to this address for approval	☐
Address:	Unit 6, 151 Industrial Rd Whitehorse, YT Y1A 2V3	QA/QC Report x	Address:	Unit 6, 151 Industrial Rd Whitehorse, YT Y1A 2V3		
		Report Result:				Report Result:
Attention:	Stephan Klump	Fax ☐	Attention:			Fax ☐
Phone:	867-668-3068	Mail x	Phone:	867-668-3068		Mail ☐
Fax:	867-668-4349	Courier ☐	Fax:	867-668-4349		Courier ☐
Cell:		e-mail x	Cell:			e-mail ☐
e-mail:	sklump@eba.ca	e-Service ☐	e-mail:			e-Service ☐

Information to be included on Report and Invoice

Project ID: W23101159.015
Project Name: Geothermal
Project Location: Yukon
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID:

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

RUSH required on: All Analysis ☐ or As indicated ☐

Date Required: _____

Signature: _____

Bodycote Authorization: _____

Sample Custody (Please Print)

Sampled by: SK

Company EBA Signature

I authorize Bodycote to proceed with the work work indicated on this form:

Date: 17-Jul Initial:

Received by:	Sample Temp.
Waybill #:	Date
Company	Time

Special Instructions / Comments

All samples for Si analysis (H09S-XXD) are field-filtered and preserved (HNO3).

FOR LAB USE ONLY

Condition of containers/coolers upon arrival at lab

☐ Check here if Bodycote is required to report results directly to a regulatory body (Please include contact information)

☐ Check here if you are testing POTABLE WATER for HUMAN CONSUMPTION

Please indicate which regulations you are required to meet:

	Sample Identification	Location	Depth IN CM M	Date/Time Sampled	Matrix	Sampling Method	Number of Containers (5)	Enter tests above (✓ relevant samples below)
1	H09S-31D	Jarvis		16-Jul-09	Water	Grab		☒
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

NOTE: All hazardous samples must be labelled according to WHIMIS guidelines.

RAFTER
GNS SCIENCE

NZA	**33112**
R	32268
Job No	99786
Measured	03-Nov-09
Issued	10-Nov-09

Accelerator Mass Spectrometry Result

Sample ID 213646
Description CO2 Gas
Submitter Robert Drimmie University of Waterloo, Environmental Isotope Laboratory, Department of Earth Sciences

*** Radiocarbon Age**		**30440 ± 220 BP**		**$\delta^{13}C$ =**	-10.6 ‰
**** Per cent modern =**	2.24 ± 0.06	**$\delta^{14}C$ =**	-976.9 ± 0.6 ‰	**$\Delta^{14}C$ =**	-977.6 ± 0.6 ‰

* Reported age is the conventional radiocarbon age before present (BP)
** Per cent modern means absolute per cent modern relative to the NBS oxalic acid standard (HOxI) corrected for decay since 1950.
Age, $\Delta^{14}C$, $\delta^{14}C$ and absolute per cent modern are as defined by Stuiver Polach, Radiocarbon 19:355-363 (1977)

The reported errors comprise statistical errors in sample and standard determinations, combined in quadrature with a system error component based on the analysis of an ongoing series of measurements on an oxalic acid standard.
For the present result the system error component is conservatively estimated as 0% (= ± 0 radiocarbon years).

National Isotope Centre, Institute of Geological and Nuclear Sciences Ltd (GNS Science)
PO Box 31-312 Lower Hutt, New Zealand Fax +64 4 570 4657 Phone +64 4 570 4644
www.RafterRadiocarbon.co.nz