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TECHNICAL MEMO

ISSUED FOR USE

TO:	Josée Perron, Project Manager	**DATE:**	September 4, 2013
C:	Jeff Moore, Project Officer	**MEMO NO.:**	W14103179.002-1
FROM:	Sarah Sternbergh	**EBA FILE:**	W14103179.002

SUBJECT: ARD/ML Assessment for Spillway Repair Riprap - Mount Nansen, Yukon

1.0 INTRODUCTION

EBA, A Tetra Tech Company operating as EBA Engineering Consultants Ltd. (EBA) was commissioned by Josée Perron, Project Manager for the Government of Yukon (YG) – Mount Nansen Project, to undertake a geochemical characterization for riprap material associated with a repair of the existing spillway at the Mount Nansen Tailings Facility. EBA has prepared this memo to summarize the results of acid base accounting (ABA) characterization for a composite rock sample collected by Richard Trimble of EBA from a stockpile at the Mount Nansen site. The purpose of this testing was to establish the potential suitability of the rock for use as riprap for repair of the existing spillway at the Mount Nansen site tailings facility. EBA understands that the same rock was originally used to construct the spillway, and the size of material used is in the cobble to boulder range (greater than 75 mm).

This memo is intended to provide the results of the characterization of riprap with respect to acid rock drainage (ARD) and metal leaching (ML) potential and to comment on the suitability of the material for use in a small riprap repair job (<10,000 metric tonnes) under the specific conditions at the Mount Nansen site. Analysis and interpretation in this memo is presented in accordance with the Prediction Manual for Drainage Chemistry from Sulphidic Materials – MEND Report 1.20.1 (Price, 2009).

2.0 SAMPLE DESCRIPTION AND ANALYSIS

About 10 kg of sample of mixed rock types was collected from the stockpile at the Mount Nansen Site. Samples were collected by Richard Trimble of EBA on June 21, 2013. The rock in the stockpile has all been exposed for several years and can be considered weathered.

EBA reviewed the samples collected to determine rock type, mineralogy and physical characteristics. The rock type in the stockpile consisted of a medium to course grained granodiorite with variable quartz, pyrite and calcite alteration. The 10 kg sample was divided into three separate samples based on alteration type and submitted to the lab. Each sample is described in detail in Table 1. The samples were submitted for ABA testing and whole rock metals analysis at ALS Mineralogy in Vancouver, B.C and ALS Environmental in Burnaby, BC for Shake Flask Extraction (SFE) analysis.

Table 1: Geological Assessment of Rock Samples

Sample MN1	**Description**	Weathered granodiorite, medium grained
	Alteration	Sulphide/oxide staining observed
	Sulphide Mineralization	Disseminated sulphides (pyrite grains) observed, very fine grained pyrite.
	Rock Unit	
	Acid Test	'No fizz
Sample MN2	**Description**	Weathered granodiorite, medium grained
	Alteration	Oxidized/weathered sample
	Sulphide Mineralization	Little to no oxide staining, no sulphides observed
	Rock Unit	
	Acid Test	No fizz
Sample MN3	**Description**	Silica altered granodiorite
	Alteration	Silica and calcite alteration, quartz veins and magnetite observed in samples
	Sulphide Mineralization	No sulphide mineralization observed, no oxide staining
	Rock Unit	
	Acid Test	Slight fizz

3.0 LABORATORY TESTING AND ANALYSIS METHODOLOGY

ABA Analysis

The ABA testing was completed in accordance with Chapter 14 of the MEND Guidelines (Price, 2009).

Neutralization potential (NP) was measured using the Modified Sobek NP method, which accounts for NP supplied by carbonate materials as well as from highly reactive silicate materials. Carbonate NP, which accounts for NP supplied only by carbonates and which assumes that all carbonates present react as calcite, was calculated based on values of inorganic carbon reported by the laboratory.

Acid generation potential is evaluated based on the sulphur content of the sample. Acid potential (AP) is calculated on the basis of measured sulphide sulphur present in the material. Maximum possible acidity (MPA) is measured from the total sulphur content of the sample. MPA is the more conservative measure. As the sulphur balance becomes more dominated by sulphide sulphur, the value of AP approaches the MPA value. The lab reports values of MPA and therefore uses this in subsequent calculations including the net neutralization potential (NNP) and neutralization potential ratio (NPR).

After establishing the potential for a material to generate and neutralize acids, a ratio of neutralization potential to acid generation potential (NP:MPA) is calculated. The ratio of these two factors is known as the NPR.

As recommend by Price (2009), both the Sobek NPR (Modified Sobek NP to MPA) and Carbonate NPR (Carbonate NP to MPA) values are presented for comparison and analysis of the results (see summary in Table 3).

According to the Price (2009) ABA method, acid generation potential of geologic materials is classified in one of three categories, as summarized in Table 2. Material with a NPR less than one is classified as potentially acid generating (PAG). Material with a NPR between one and two is classified as having uncertain acid-generating potential, with acid generation occurring if the neutralization potential is insufficiently reactive or is depleted faster than the sulphides. Material with an NPR greater than two is classified as non-acid generating (NAG). Materials classified as NAG are considered to be very unlikely to generate ARD unless the characteristics of the material are such that the sulphide mineralization is highly reactive and the neutralization potential is non-reactive.

Table 2: ARD Classification System for Materials (MEND 2009)

NPR	ARD Potential	Classification
NPR <1	Potentially	Likely acid generating unless sulphides are non-reactive.
1< NPR <2	Uncertain	Possibly acid generating if NP insufficiently reactive or is depleted faster than sulphides.
NPR > 2	Very Unlikely	Very little ARD concern

Whole Rock Metals

The solid phase metal content of the samples are determined using several total rock digest methods including lithium borate fusion, four acid digest and an aqua-regia digest. All three of the samples were analyzed for whole rock metals content.

Samples were analyzed for a standard suite of 48 elements (ALS analysis code CCP-PKG1). Values are reported as part per million (ppm) or as %.

Solid phase metal content is compared to global crustal abundance to metals which may be present in high concentrations.

Results of the total rock metals analysis are included in Table 4 and in the attached laboratory certificates. The total rock metals characterization was used to determine the appropriate parameters for the shake flask analysis.

Shake Flask Extraction

SFE analysis to assess ML potential was carried out according to the method outlined in Price (1997). Test work consisted of mixing 250 g of sample with 750 mL of de-ionized water followed by 24 hours of continuous agitation on an orbital shaker table to extract a liquid concentrate (leachate) solution from a crushed rock sample. After this step, the extract is allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analyzed using cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7) for Hg, ICPMS/ICPOES for Metals, Ion Chromatography for Anions, Fluorescence for Ammonia, & Titration for Alkalinity and Acidity.

All three samples were submitted for SFE testing to assess ML potential. The analytical results for metals in the SFE leachate are compared to the CCME FAL guidelines and the site Water Licence standards.

4.0 RESULTS OF LABORATORY ANALYSIS

4.1 Acid Base Accounting (ABA) Results

Laboratory results from the ABA testing are summarized in Table 3 with the laboratory report attached. The sample results show that total sulphur, elemental sulphur, sulphate sulphur and sulphide sulphur in Samples MN2 and MN3 were at or below detection limits (0.01 S%). In Sample MN1 sulphide sulphur accounted for the majority of the sulphur in the sample (0.24 S%) while sulphate sulphur was near detection limits (0.01 to 0.02 S%). Inorganic carbon was at or near detection limits in all three samples.

The neutralization potential of Sample MN1 was reported as 13 tCaCO3/1000t of material. The maximum potential acidity (MPA) was measured at 7.5 tCaCO3/1000t of material. The Sobek NPR for Sample MN1 is 1.73 which indicates that it is uncertain whether the sample will be acid generating. The carbonate NPR is calculated for Sample MN1 to be 0.6 which indicates that the sample is potentially acid generating (PAG). As the carbonate NPR is less than one, the sample should be considered potentially acid generating (PAG).

The neutralization potential of Sample MN2 was reported as 7 tCaCO3/1000t of material. The maximum potential acidity of Sample MN2 was measured to be less than the detection limit (<0.3 tCaCO3/1000t of material). The Sobek NPR for Sample MN2 is 44.8 which indicate that the sample is classified as NAG and unlikely to be acid generating. The carbonate NPR is calculated for Sample MN2 to be 13.9 which also indicates that the sample is classified as NAG and unlikely to be acid generating. As both the Sobek and carbonate NPR values are greater than two, this sample should be considered non acid generating (NAG).

The neutralization potential of Sample MN3 was reported as 13 tCaCO3/1000t of material. The maximum potential acidity for this sample was measured at the detection limit (0.2 tCaCO3/1000t of material). The Sobek NPR for this sample is 41.6 which indicate that the sample is classified as NAG and is unlikely to be acid generating. The carbonate NPR is calculated for Sample MN3 to be 16.7 which indicates that the sample is also classified as NAG and is unlikely to be acid generating. As both the Sobek and carbonate NPR values are greater than two, this sample should be considered non acid generating (NAG).

Table 3: Laboratory Analytical Results

Parameter	Unit	Detection Limit	Sample MN1	Sample MN2	Sample MN3
Maximum Potential Acidity (MPA)	tCaCO3/1000t	0.3	7.5	<0.3	0.3
Fizz Rate	Fizz Rating	1	1	1	1
Net Neutralization Potential (NNP)	tCaCO3/1000t	1	6	7	13
Modified Sobek Neutralization Potential (NP)	tCaCO3/1000t	0.1	13	7	13
Carbonate NP (Calculated from %C)	-	-	4.2	4.2	5.0
Paste pH	pH	0.01	8.5	9	9.3
Total Sulphur by LECO Furnace	% S	0.01	0.24	<0.01	0.01
Sulphate Sulphur (Carbonate Leach)	% S	0.01	<0.01	<0.01	<0.01
Sulphate Sulphur (HCl Leach)	% S	0.01	0.02	0.01	<0.01
Sulphide Sulphur	% S	0.01	0.24	<0.01	0.01
Inorganic Carbon	% C	0.05	0.05	<0.05	0.06
Inorganic Carbon	% CO2	0.2	0.2	<0.2	0.2
Sobek Neutralization Potential Ratio (NPR)	Ratio	0.01	1.73	44.8	41.6
Carbonate NPR	Ratio	-	0.6	13.9	16.7

4.2 Total Rock Metals Results

Results of the total rock metals analysis are included in Table 4 and in the attached laboratory certificates. The total rock metals characterization was used to determine the appropriate parameters for the shake flask analysis.

Arsenic, barium, cadmium, bismuth and zinc were present in all three samples at elevated concentrations (>10 times natural crustal abundance). These were included as parameters in the shake flask analysis along with parameters relevant to the water licence (Sb, As, Ba, Cd, Cu, Fe, Pb, Mn, Zn, Cr, Ag, Ni and Hg) and parameters relevant to water chemistry analysis and the CCME guidelines.

4.3 Shake Flask Metals Results

Shake Flask analysis results were compared against the site Water Licence standards where they are defined for certain metals. The summary of Shake Flask analysis results is included in Table 5. Where site specific standards are not defined results were compared to CCME FAL guidelines. The following results are noted:

- The resulting water pH from Samples MN2 and MN3 were both elevated above the CCME guideline of 9.0 and the Water Licence standard of 8.5.
- The concentration of arsenic in the extract from all three samples was elevated above the CCME guideline of 5 µg/L but not above the site Water Licence standard of 500 µg/L.
- The concentration of cadmium was elevated above the CCME guideline of 0.03 µg/L but not above the site Water Licence standard of 20 µg/L.

- Copper concentrations from all three samples were elevated above the CCME guideline of 2.13 µg/L (hardness dependant), however did not exceed the site Water Licence standard of 200 µg/L.
- The iron concentrations from all three samples were elevated above the CCME guideline of 300 µg/L as well as the site Water Licence standard of 1000 µg/L.
- The lead concentrations from all three samples were elevated above the CCME guideline of 2.73 µg/L (hardness dependant) but did not exceed the site Water Licence standard of 100 µg/L.
- The method used to test for mercury was not able to produce detection limits low enough to test for mercury at CCME guideline levels; however, the concentration of mercury from the samples did not exceed the site Water Licence standard of 5 µg/L.

Of the items discussed above, only iron is noted to be above the site water licence standards, and this is within an order of magnitude of the site specific guidelines. The shakeflask test provides a direct concentration of leachate from the sample material, and any natural dilution that may occur on site (ie. precipitation) or interaction with site surface water or groundwater is not considered.

5.0 DISCUSSION AND RECOMMENDATIONS

ABA analysis of the samples collected from the Mount Nansen stockpile indicates that rock type of sample MN1 type with visible pyrite mineralization and oxidation staining is potentially acid generating (PAG).

This rock type is visibly distinctive with visible disseminated sulphides and rust staining on weathered surfaces, and manual sorting of riprap to avoid this rock type is recommended. Refer to Photo 1 for an image of the pyrite mineralized granodiorite. Should YG choose to manually sort the material to selectively choose boulders that contain little or no sulphide mineralization, they will require a qualified individual onsite during the loading of the riprap material.

Neutral metals leaching analysis for the samples collected from the Mount Nansen stockpile indicates that the potential riprap material may act to raise the pH of effluent travelling over it and may increase the concentration of iron in solution.

It is understood that rock from the waste rock pile is the same geologically as that previously used as rip rap along the embankment, and that there is a downstream water quality monitoring point. It is also understood that the rock used will be relatively large boulders of which the outer surface has already been weathered. If the boulders are not broken down (ie crushed) prior to use, there should be relatively little new active surface area available for reaction. In addition the analysis completed herein does not account for any potential dilution of leachate from regular flow within the spillway.

6.0 LIMITATIONS OF REPORT

These samples were collected from a specific rock storage pile at the Mount Nansen site and are considered a weathered sample representative only of the material stored in that pile. This report applies only to the use of the material in this pile as riprap for repair of the spillway. No assessment has been made for reducing the material size or using in any location but the spillway intermittently submerged by neutral pH water from the tailings pond.

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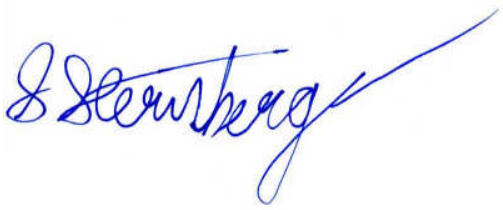
7.0 CLOSURE

We trust this Technical Memo meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
EBA Engineering Consultants Ltd.

Prepared by:



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GEO-ENVIRONMENTAL REPORT

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Photo 1: Sample 1 - note oxide staining. July 4, 2013

Photo 2: Sample 2. July 4, 2013

Photo 3: Sample 3. July 4, 2013

Table 4 - Total Rock Metals Analysis Results

Parameter	Unit	Detection Limit		Sample MN1	Sample MN2	Sample MN3	Crustal Abundance of Element
Received Weight	kg	0.2		0.73	0.97	0.78	
LOI	%	0.01		2.88	1.55	1.46	
Total	%	0.01		99.55	101.54	101.49	
Major Constituents							
SiO2 converted to Si	%	0.01		30.35	34.94	32.50	27
Al2O3 converted to Al	%	0.01		8.63	7.57	8.68	8.1
Fe2O3 converted to Fe	%	0.01		3.64	1.04	2.05	6.3
CaO converted to Ca	%	0.01		1.38	0.48	2.31	5
MgO converted to Mg	%	0.01		0.57	0.27	0.55	2.9
Na2O converted to Na	%	0.01		3.01	2.57	3.66	2.3
K2O converted to K	%	0.01		1.92	3.37	1.19	1.5
Cr2O3 converted to Cr	%	0.01		0.0034	0.0034	0.0034	0.014
TiO2 convered to Ti	%	0.01		0.22	0.05	0.16	0.66
MnO converted to Mn	%	0.01		0.29	0.02	0.05	0.11
P2O5 converted to P	%	0.01		0.07	0.01	0.05	0.099
SrO converted to Sr	%	0.01		0.05	0.06	0.09	0.036
BaO convered to Ba	%	0.01		0.13	**0.62**	0.15	0.034
C	%	0.01		0.05	0.02	0.05	0.18
S	%	0.01		0.25	0.01	0.02	0.042
Metals							
Ag	ppm	0.5		<0.5	<0.5	<0.5	0.079
As	ppm	0.1		**77.2**	3.7	7.5	2.1
Ba	ppm	0.5		1325	**6020**	1600	340
Bi	ppm	0.01		**0.33**	0.01	0.03	0.025
Cd	ppm	0.5		**12.8**	0.9	<0.5	0.15
Ce	ppm	0.5		23.3	7.5	14.2	60
Co	ppm	1		6	1	3	30
Cr	ppm	10		10	<10	<10	140
Cs	ppm	0.01		6.82	2.44	1.81	1.9
Cu	ppm	1		72	10	3	68
Dy	ppm	0.05		2.33	0.58	1.24	6.2
Er	ppm	0.03		1.38	0.37	0.7	3
Eu	ppm	0.03		0.88	0.17	0.41	1.8
Ga	ppm	0.1		18.2	12.2	18.9	19
Gd	ppm	0.05		2.62	0.53	1.31	5.2
Hf	ppm	0.2		2.7	1.2	2.3	3.3
Hg	ppm	0.005		0.009	<0.005	<0.005	0.067
Ho	ppm	0.01		0.47	0.12	0.25	1.2
La	ppm	0.5		11.2	3.6	7.2	34
Li	ppm	10		10	<10	10	17
Lu	ppm	0.01		0.2	0.08	0.12	0.56
Mo	ppm	1		<1	<1	<1	1.1
Nb	ppm	0.2		4.5	2.1	4.1	17
Nd	ppm	0.1		12.3	2.8	7.2	33
Ni	ppm	1		4	1	4	89
Pb	ppm	2		28	4	7	9.9
Pr	ppm	0.03		3.04	0.78	1.81	8.6
Rb	ppm	0.2		103.5	59.9	33.3	60
Sb	ppm	0.05		12.75	0.45	1.61	0.2
Sc	ppm	1		7	1	4	26
Se	ppm	0.2		0.4	<0.2	<0.2	0.05
Sm	ppm	0.03		2.77	0.59	1.54	6
Sn	ppm	1		1	<1	1	2.2
Sr	ppm	0.1		497	545	941	360
Ta	ppm	0.1		0.2	0.2	0.2	1.7
Tb	ppm	0.01		0.39	0.09	0.18	0.93
Te	ppm	0.01		0.04	<0.01	<0.01	9.90E-04
Th	ppm	0.05		2.09	1.22	1.22	6
Tl	ppm	0.5		1.1	<0.5	<0.5	0.53
Tm	ppm	0.01		2	0.06	0.09	0.45
U	ppm	0.05		0.95	0.32	0.55	1.8
V	ppm	5		67	8	47	190
W	ppm	1		1	1	<1	1.1
Y	ppm	0.5		14.2	3.6	6.9	29
Yb	ppm	0.03		1.26	0.43	0.69	2.8
Zn	ppm	2		**1370**	206	115	78
Zr	ppm	2		94	36	80	130

Underline - elevated above natural crustal abundance
Bold - greater than 10 times natural crustal abundance

Table 5 - Shake Flask Analysis Results

	Sample ID			**Sample MN1**	**Sample MN2**	**Sample MN3**	**CCME Guideline[1]**	**Water Licence Standard**
	ALS Sample ID			L1342409-1	L1342409-2	L1342409-3		
Parameter	**Unit**	**Detection Limit**		**Results**			**Guidelines**	
Leachable Anions & Nutrients								
Acidity (as $CaCO_3$)	ug/L	1000		<1000	<1000	<1000	-	-
Alkalinity (as $CaCO_3$)	ug/L	2000		101000	88200	107000	-	-
Ammonia (as N)	ug/L	5		*262*	*160*	*142*	855[2]	-
Bromide (Br)	ug/L	50		<50	<50	<50	-	-
Chloride (Cl)	ug/L	500		7720	3550	8060	120000	-
Conductivity	uS/cm	2		283	176	205	-	-
Fluoride (F)	ug/L	20		*1770*	*769*	*888*	120	-
Nitrate (as N)	ug/L	5		35.9	17.5	16.2	130000	-
Nitrite (as N)	ug/L	1		23.6	26.6	17.2	60	-
pH	pH	0.1		8.66	***9.19***	***9.29***	6.5-9.0	6.0-8.5
Sulfate (SO_4)	ug/L	500		23800	5110	4340	-	-
Leachable Metals								
Aluminum (Al)	ug/L	5		811	6720	3990	100[3]	-
Antimony (Sb)	ug/L	0.1		12	3.95	5.22	-	150
Arsenic (As)	ug/L	1		*15.9*	*46.3*	*47.5*	5	150
Barium (Ba)	ug/L	1		28	315	90.1	-	1000
Beryllium (Be)	ug/L	0.5		<0.50	<0.50	<0.50	-	-
Bismuth (Bi)	ug/L	0.5		<0.50	<0.50	<0.50	-	-
Boron (B)	ug/L	10		51	48	33	1500	-
Cadmium (Cd)	ug/L	0.05		*0.635*	*0.488*	*0.136*	0.03	20
Calcium (Ca)	ug/L	100		5150	2610	3160	-	-
Chromium (Cr)	ug/L	0.5		<0.50	<0.50	<0.50	1	40
Cobalt (Co)	ug/L	0.1		0.12	0.15	0.36	-	-
Copper (Cu)	ug/L	1		*40.2*	*5.3*	*1.1*	2.13	200
Iron (Fe)	ug/L	30		***1580***	***1400***	***1660***	300	1000
Lead (Pb)	ug/L	0.1		*2.49*	*1.01*	*2.15*	2.73	100
Lithium (Li)	ug/L	5		<5.0	<5.0	<5.0	-	-
Magnesium (Mg)	ug/L	50		827	730	924	-	-
Manganese (Mn)	ug/L	0.5		73.9	63.3	45.8	-	500
Mercury (Hg)	ug/L	0.05		*<0.050*	*<0.050*	*<0.050*	0.026	5
Molybdenum (Mo)	ug/L	0.1		1.08	0.3	0.44	73	-
Nickel (Ni)	ug/L	0.5		<0.50	<0.50	<0.50	87.3	300
Phosphorus (P)	ug/L	300		<300	<300	<300	-	-
Potassium (K)	ug/L	50		28800	17000	6260	-	-
Selenium (Se)	ug/L	0.5		<0.50	<0.50	<0.50	1	-
Silicon (Si)	ug/L	50		5790	22500	13800	-	-
Silver (Ag)	ug/L	0.05		<0.050	<0.050	<0.050	0.1	100
Sodium (Na)	ug/L	50		34200	27900	40300	-	-
Strontium (Sr)	ug/L	0.5		31.8	36	46.5	-	-
Thallium (Tl)	ug/L	0.1		<0.10	<0.10	<0.10	-	-
Tin (Sn)	ug/L	0.5		<0.50	<0.50	<0.50	0.8	-
Titanium (Ti)	ug/L	10		11	26	87	-	-
Uranium (U)	ug/L	0.01		0.141	0.081	0.18	15	-
Vanadium (V)	ug/L	1		2.9	13	30.2	-	-
Zinc (Zn)	ug/L	10		*91*	*62*	21	30	300

Notes:

1. CCME Water Quality Guidelines for the Protection of Aquatic Life (fresh water)
2. Assumes temperatures as high as 10 oC and pH as high as 8.0
3. Assumes pH > 6.5
4. *Italics - exceeds CCME Guidelines*
5. **Bold - exceeds water licence requirements**

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: EBA ENGINEERING CONSULTANTS LTD.
#6- 151 INDUSTRIAL RD.
WHITEHORSE YT Y1A 2V3

Finalized Date: 26- JUL- 2013
This copy reported on
1- AUG- 2013
Account: EBACON

CERTIFICATE WH13124660

Project:

P.O. No.: WH14103179

This report is for 3 Rock samples submitted to our lab in Whitehorse, YT, Canada on 9- JUL- 2013.

The following have access to data associated with this certificate:

LARA REGGIN	SARAH STERNBERGH	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI- 21	Received Sample Weight
LOG- 22	Sample login - Rcd w/o BarCode
CRU- 31	Fine crushing - 70% <2mm
CRU- QC	Crushing QC Test
PUL- QC	Pulverizing QC Test
SPL- 21	Split sample - riffle splitter
PUL- 32	Pulverize 1000g to 85% < 75 um
BAG- 01	Bulk Master for Storage

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME- MS81	Lithium Borate Fusion ICP- MS	ICP- MS
ME- MS42	Up to 34 elements by ICP- MS	ICP- MS
OA- GRA05	Loss on Ignition at 1000C	WST- SEQ
TOT- ICP06	Total Calculation for ICP06	ICP- AES
ME- 4ACD81	Base Metals by 4- acid dig.	ICP- AES
ME- ICP06	Whole Rock Package - ICP- AES	ICP- AES
C- IR07	Total Carbon (Leco)	LECO
S- IR08	Total Sulphur (Leco)	LECO

To: EBA ENGINEERING CONSULTANTS LTD.
ATTN: SARAH STERNBERGH
#6- 151 INDUSTRIAL RD.
WHITEHORSE YT Y1A 2V3

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:
Colin Ramshaw, Vancouver Laboratory Manager

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#6- 151 INDUSTRIAL RD.
WHITEHORSE YT Y1A 2V3

Finalized Date: 26- JUL- 2013
Account: EBACON

CERTIFICATE OF ANALYSIS WH13124660

Sample Description	Method	WEI- 21	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	ME- ICP06	C- IR07
	Analyte	Recvd Wt.	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	C
	Units	kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	LOR	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1		0.73	64.9	16.30	5.13	1.93	0.95	4.06	2.31	<0.01	0.36	0.37	0.16	0.06	0.14	0.05
2		0.97	74.7	14.30	1.46	0.67	0.44	3.46	4.06	<0.01	0.08	0.03	0.03	0.07	0.69	0.02
3		0.78	69.5	16.40	2.89	3.23	0.92	4.93	1.43	<0.01	0.27	0.06	0.12	0.11	0.17	0.05

***** See Appendix Page for comments regarding this certificate *****

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WHITEHORSE YT Y1A 2V3

Finalized Date: 26- JUL- 2013
Account: EBACON

CERTIFICATE OF ANALYSIS WH13124660

Sample Description	Method	S- IR08	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81
	Analyte	S	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Hf	Ho	La	Lu	Nb
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	0.5	0.5	10	0.01	0.05	0.03	0.03	0.1	0.05	0.2	0.01	0.5	0.01	0.2
1		0.25	1325	23.3	10	6.82	2.33	1.38	0.88	18.2	2.62	2.7	0.47	11.2	0.20	4.5
2		0.01	6020	7.5	<10	2.44	0.58	0.37	0.17	12.2	0.53	1.2	0.12	3.6	0.08	2.1
3		0.02	1600	14.2	<10	1.81	1.24	0.70	0.41	18.9	1.31	2.3	0.25	7.2	0.12	4.1

***** See Appendix Page for comments regarding this certificate *****

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#6- 151 INDUSTRIAL RD.
WHITEHORSE YT Y1A 2V3

Finalized Date: 26- JUL- 2013
Account: EBACON

CERTIFICATE OF ANALYSIS WH13124660

Sample Description	Method	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81	ME- MS81
	Analyte	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tl	Tm	U	V	W	Y
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.1	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05	0.5	0.01	0.05	5	1	0.5
1		12.3	3.04	103.5	2.77	1	497	0.2	0.39	2.09	1.1	0.20	0.95	67	1	14.2
2		2.8	0.78	59.9	0.59	<1	545	0.2	0.09	1.22	<0.5	0.06	0.32	8	1	3.6
3		7.2	1.81	33.3	1.54	1	941	0.2	0.18	1.22	<0.5	0.09	0.55	47	<1	6.9

***** See Appendix Page for comments regarding this certificate *****

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#6- 151 INDUSTRIAL RD.
WHITEHORSE YT Y1A 2V3

Finalized Date: 26- JUL- 2013
Account: EBACON

CERTIFICATE OF ANALYSIS WH13124660

Sample Description	Method	ME- MS81	ME- MS81	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	ME- MS42	OA- GRA05	TOT- ICP06	ME- 4ACD81	ME- 4ACD81	ME- 4ACD81	ME- 4ACD81	ME- 4ACD81
	Analyte	Yb	Zr	As	Bi	Hg	Sb	Se	Te	LOI	Total	Ag	Cd	Co	Cu	Li
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm
	LOR	0.03	2	0.1	0.01	0.005	0.05	0.2	0.01	0.01	0.01	0.5	0.5	1	1	10
1		1.26	94	77.2	0.33	0.009	12.75	0.4	0.04	2.88	99.55	<0.5	12.8	6	72	10
2		0.43	36	3.7	0.01	<0.005	0.45	<0.2	<0.01	1.55	101.54	<0.5	0.9	1	10	<10
3		0.69	80	7.5	0.03	<0.005	1.61	<0.2	<0.01	1.46	101.49	<0.5	<0.5	3	3	10

***** See Appendix Page for comments regarding this certificate *****

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WHITEHORSE YT Y1A 2V3

Finalized Date: 26- JUL- 2013
Account: EBACON

CERTIFICATE OF ANALYSIS WH13124660

Sample Description	Method Analyte Units LOR	ME- 4ACD81 Mo ppm 1	ME- 4ACD81 Ni ppm 1	ME- 4ACD81 Pb ppm 2	ME- 4ACD81 Sc ppm 1	ME- 4ACD81 Zn ppm 2
1		<1	4	28	7	1370
2		<1	1	4	1	206
3		<1	4	7	4	115

***** See Appendix Page for comments regarding this certificate *****

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#6- 151 INDUSTRIAL RD.
WHITEHORSE YT Y1A 2V3

Finalized Date: 26- JUL- 2013
Account: EBACON

CERTIFICATE OF ANALYSIS WH13124660

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

Applies to Method:	BAG- 01	CRU- 31	CRU- QC	LOG- 22
	PUL- 32	PUL- QC	SPL- 21	WEI- 21

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:	C- IR07	ME- 4ACD81	ME- ICP06	ME- MS42
	ME- MS81	OA- GRA05	S- IR08	TOT- ICP06

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North Vancouver BC V7H 0A7
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To: EBA ENGINEERING CONSULTANTS LTD.
#6- 151 INDUSTRIAL RD.
WHITEHORSE YT Y1A 2V3

Finalized Date: 1- AUG- 2013
Account: EBACON

CERTIFICATE WH13126590

Project:

P.O. No.: WH14103179

This report is for 3 Rock samples submitted to our lab in Whitehorse, YT, Canada on 9- JUL- 2013.

The following have access to data associated with this certificate:

LARA REGGIN	SARAH STERNBERGH	

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
OA- VOL08mn	NP MEND 1991	
S- IR08	Total Sulphur (Leco)	LECO
OA- ELE07	Paste pH	
S- GRA06	Sulfate Sulfur- carbonate leach	WST- SEQ
S- GRA06a	Sulfate Sulfur (HCl leachable)	WST- SEQ
S- CAL06	Sulfide Sulfur (calculated)	LECO
C- GAS05	Inorganic Carbon (CO2)	

To: EBA ENGINEERING CONSULTANTS LTD.
ATTN: SARAH STERNBERGH
#6- 151 INDUSTRIAL RD.
WHITEHORSE YT Y1A 2V3

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: EBA ENGINEERING CONSULTANTS LTD.
#6- 151 INDUSTRIAL RD.
WHITEHORSE YT Y1A 2V3

Finalized Date: 1- AUG- 2013
Account: EBACON

CERTIFICATE OF ANALYSIS WH13126590

Sample Description	Method Analyte Units LOR	OA- VOL08mn MPA tCaCO3/1000 0.3	OA- VOL08mn FIZZ RAT Unity 1	OA- VOL08mn NNP tCaCO3/1000 1	OA- VOL08mn NP tCaCO3/1000 1	OA- ELE07 pH Unity 0.1	OA- VOL08mn Ratio (N Unity 0.01	S- IR08 S % 0.01	S- GRA06 S % 0.01	S- GRA06a S % 0.01	S- CAL06 S % 0.01	C- GAS05 C % 0.05	C- GAS05 CO2 % 0.2
1		7.5	1	6	13	8.5	1.73	0.24	<0.01	0.02	0.24	0.05	0.2
2		<0.3	1	7	7	9.0	44.80	<0.01	<0.01	0.01	<0.01	<0.05	<0.2
3		0.3	1	13	13	9.3	41.60	0.01	<0.01	<0.01	0.01	0.06	0.2

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: EBA ENGINEERING CONSULTANTS LTD.
#6- 151 INDUSTRIAL RD.
WHITEHORSE YT Y1A 2V3

Finalized Date: 1- AUG- 2013
Account: EBACON

CERTIFICATE OF ANALYSIS WH13126590

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:				
	C- GAS05	OA- ELE07	OA- VOL08mn	S- CAL06
	S- GRA06	S- GRA06a	S- IR08	

EBA ENGINEERING CONSULTANTS LTD.
ATTN: Sarah Sternbergh
Calcite Business Centre
Unit 6 - 151 Industrial Road
Whitehorse YT Y1A 2V3

Date Received: 02-AUG-13
Report Date: 22-AUG-13 18:39 (MT)
Version: FINAL

Client Phone: 867-668-3068

Certificate of Analysis

Lab Work Order #: L1342409

Project P.O. #: NOT SUBMITTED
Job Reference: W14103179
C of C Numbers: 10-152474
Legal Site Desc:

Brent Mack
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1342409-1	L1342409-2	L1342409-3		
	Description	GRAB	GRAB	GRAB		
	Sampled Date	01-APR-13	01-APR-13	01-APR-13		
	Sampled Time					
	Client ID	#1 MNT NANSEN	#2 MNT NANSEN RIP RAP	#3 MNT NANSEN RIP RAP		
Grouping	**Analyte**					
SOIL						
Physical Tests	Moisture (%)	0.51	0.48	0.27		
Leachable Anions & Nutrients	Acidity (as CaCO3) (ug/L)	<1000	<1000	<1000		
	Alkalinity, Total (as CaCO3) (ug/L)	101000	88200	107000		
	Ammonia, Total Leachable (as N) (ug/L)	262	160	142		
	Bromide (Br) (ug/L)	<50	<50	<50		
	Chloride (Cl) (ug/L)	7720	3550	8060		
	Conductivity (uS/cm)	283	176	205		
	Fluoride (F) (ug/L)	1770	769	888		
	Nitrate (as N) (ug/L)	35.9	17.5	16.2		
	Nitrite (as N) (ug/L)	23.6	26.6	17.2		
	pH (pH)	8.66	9.19	9.29		
	Sulfate (SO4) (ug/L)	23800	5110	4340		
Leachable Metals	Aluminum (Al)-Leachable (ug/L)	811	6720	3990		
	Antimony (Sb)-Leachable (ug/L)	12.0	3.95	5.22		
	Arsenic (As)-Leachable (ug/L)	15.9	46.3	47.5		
	Barium (Ba)-Leachable (ug/L)	28.0	315	90.1		
	Beryllium (Be)-Leachable (ug/L)	<0.50	<0.50	<0.50		
	Bismuth (Bi)-Leachable (ug/L)	<0.50	<0.50	<0.50		
	Boron (B)-Leachable (ug/L)	51	48	33		
	Cadmium (Cd)-Leachable (ug/L)	0.635	0.488	0.136		
	Calcium (Ca)-Leachable (ug/L)	5150	2610	3160		
	Chromium (Cr)-Leachable (ug/L)	<0.50	<0.50	<0.50		
	Cobalt (Co)-Leachable (ug/L)	0.12	0.15	0.36		
	Copper (Cu)-Leachable (ug/L)	40.2	5.3	1.1		
	Iron (Fe)-Leachable (ug/L)	1580	1400	1660		
	Lead (Pb)-Leachable (ug/L)	2.49	1.01	2.15		
	Lithium (Li)-Leachable (ug/L)	<5.0	<5.0	<5.0		
	Magnesium (Mg)-Leachable (ug/L)	827	730	924		
	Manganese (Mn)-Leachable (ug/L)	73.9	63.3	45.8		
	Mercury (Hg)-Leachable (ug/L)	<0.050	<0.050	<0.050		
	Molybdenum (Mo)-Leachable (ug/L)	1.08	0.30	0.44		
	Nickel (Ni)-Leachable (ug/L)	<0.50	<0.50	<0.50		
	Phosphorus (P)-Leachable (ug/L)	<300	<300	<300		
	Potassium (K)-Leachable (ug/L)	28800	17000	6260		
	Selenium (Se)-Leachable (ug/L)	<0.50	<0.50	<0.50		
	Silicon (Si)-Leachable (ug/L)	5790	22500	13800		
	Silver (Ag)-Leachable (ug/L)	<0.050	<0.050	<0.050		

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1342409-1	L1342409-2	L1342409-3		
	Description	GRAB	GRAB	GRAB		
	Sampled Date	01-APR-13	01-APR-13	01-APR-13		
	Sampled Time					
	Client ID	#1 MNT NANSEN	#2 MNT NANSEN RIP RAP	#3 MNT NANSEN RIP RAP		
Grouping	**Analyte**					
SOIL						
Leachable Metals	Sodium (Na)-Leachable (ug/L)	34200	27900	40300		
	Strontium (Sr)-Leachable (ug/L)	31.8	36.0	46.5		
	Thallium (Tl)-Leachable (ug/L)	<0.10	<0.10	<0.10		
	Tin (Sn)-Leachable (ug/L)	<0.50	<0.50	<0.50		
	Titanium (Ti)-Leachable (ug/L)	11	26	87		
	Uranium (U)-Leachable (ug/L)	0.141	0.081	0.180		
	Vanadium (V)-Leachable (ug/L)	2.9	13.0	30.2		
	Zinc (Zn)-Leachable (ug/L)	91	62	21		

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Iron (Fe)-Leachable	MS-B	L1342409-1, -2, -3
Matrix Spike	Silicon (Si)-Leachable	MS-B	L1342409-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ACY-SHKFLSK-PCT-VA	Soil	Acidity by PCT (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES

This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using procedures adapted from APHA Method 2310 "Acidity".

ALK-SHKFLSK-COL-VA Soil Alkalinity by Colour (SHAKEFLASK) BC MINISTRY OF ENERGY AND MINES

This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using procedures adapted from EPA Method 310.2 "Alkalinity".

ANIONS-SHKFLSK-IC-VA Soil Anions by IC (SHAKEFLASK) BC MIN. OF ENERGY AND MINES/APHA 4110 B.

This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Anions routinely determined by this method include: bromide, chloride, fluoride, nitrate, nitrite and sulphate.

EC-SHKFLSK-PCT-VA Soil EC by PCT (SHAKEFLASK) BC MINISTRY OF ENERGY AND MINES

This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using procedures adapted from APHA Method 2510 "Conductivity".

HG-SHKFLSK-CVAFS-VA Soil Mercury by CVAFS (SHAKEFLASK) BC MINISTRY OF ENERGY AND MINES

This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using cold vapour atomic fluorescence spectrophotometry or atomic absorption spectrophotometry (EPA Method 245.7).

MET-SHKFLSK-ICP-VA Soil Metals by ICPOES (SHAKEFLASK) BC MINISTRY OF ENERGY AND MINES

This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-SHKFLSK-MS-VA Soil Metals by ICPMS (SHAKEFLASK) BC MINISTRY OF ENERGY AND MINES

This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using inductively coupled plasma - mass spectrophotometry (EPA Method 6020A).

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

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

NH3-SHKFLSK-F-VA Soil Ammonia by Fluoresence (SHAKE FLASK) BC MIN. OF ENERGY AND MINES

This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysis is carried out using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

PH-SHKFLSK-MAN-VA Soil pH by Manual Meter (SHAKEFLASK) BC MINISTRY OF ENERGY AND MINES

This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water . The extract is then allowed to settle and subsequently analysed using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode.

Reference Information

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

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

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

Chain of Custody Numbers:

10-152474

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

L1342409-COFC

10-152474

ALS Environmental

rtical Request Form
800 668 9878
ıal.com

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Report To		**Report Format / Distribution**		**Service Request:** (Rush subject to availablity - Contact ALS to confirm TAT)	
Company:	EBA Engineering	Standard:	Other (specify):	✓	Regular (Standard Turnaround Times - Business Days)
Contact:	Sarah Sternbergh	Select: (PDF)	Excel Digital Fax		Priority(2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT
Address:	6-151 Industrial Road	Email 1:	ssternbergh@eba.ca		Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT
		Email 2:	lreggin@eba.ca		Same Day or Weekend Emergency - Contact ALS to confirm TAT
Phone:	867 668 3068 Fax: 867 668 4349			**Analysis Request**	
Invoice To	Same as Report ? (circle) (Yes) or No (if No, provide details)	**Client / Project Information**		(Indicate Filtered or Preserved, F/P)	
	Copy of Invoice with Report? (circle) Yes or No	Job #:	W1410379		
Company:		PO / AFE:			
Contact:		LSD:			
Address:					
Phone:	Fax:	Quote #:			
Lab Work Order # (lab use only)	L1342409	**ALS Contact:**	**Sampler:** R. Trimble		

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ABA-PKG03B	ACP-PKG01	Shake Flask	Number of Containers
#1	~~Granodiorite Rock Sump~~ MNT Nansen	Apr 2013		Grab	X	X	X	
#2	MNT Nansen Riprap	"		Grab	X	X	X	
#3	MNT Nansen Riprap	"		Grab	X	X	X	

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

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

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

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
				8-Jul-13	10:50	27.5 °C				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION | WHITE - LABORATORY COPY | YELLOW - CLIENT COPY | GENF 18.01 Fr

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