Acid Rock Drainage and Metal Leaching Characteristics of Material
Kudz Ze Kayah Project

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BMC MINERALS (NO. 1) LTD.

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EXECUTIVE SUMMARY

The Kudz Ze Kayah (KZK) Project, a proposed Mine located within the Watson Lake Mining District in eastern Yukon, is undergoing a range of studies to support assessment and permitting. Alexco Environmental Group Inc. (AEG) was retained by BMC Minerals (No.1) Ltd. (BMC) to perform an assessment of the acid rock drainage and metal leaching (ARD/ML) of material expected to be produced during the development and operation of the Project. This report presents the primary results from static and ongoing kinetic geochemical testing on waste rock, tailings, mineralized rock, and overburden up to mid January, 2017.

The ABM Deposit, which comprises the ABM Zone and the Krakatoa Zone will be mined from the ABM open pit and some underground workings to access a portion of the Krakatoa zone. Host rocks for the Project are classified into ten rock units, or geodomains, by BMC geologists. The upper portion of the ABM open pit hosts ankeritic coherent and volcaniclastic rhyolite (AK RHYc and AK RHYv, respectively). Disseminated pyrite is observed in these materials as a halo to the deposit, which are classed as PY AK RHYc and PY AK RHYv. The hanging wall CARB MDS/RHY geodomain comprises felsic volcanic rock (both coherent and volcaniclastic) interbedded with thin mudstone intervals and carbonaceous material. This unit generally has disseminated pyrite and muscovite and can be found proximal to the mineralized zone. The hanging wall geodomains that are predominantly found in contact with the orebody are MU PY RHY, a muscovite-altered rhyolite with disseminated pyrite, and PY CL RHY, which is chloritic rhyolite with disseminated pyrite. The footwall largely comprises a calcite-chlorite mafic intrusive rock unit (CA CL MAF). An upper mudstone geodomain (MDS) is present within a fault offset block confined to the southeastern corner of the ABM Zone. Finally, a hard, siliceous felsic intrusive (RHYi), which typically contains disseminated pyrite occurs almost exclusively in the Krakatoa Zone up dip of the main Krakatoa massive sulphide lens. The ARD/ML characterization program was weighted towards to dominant geodomain units (AK RHYv, PY AK RHYv, MY PY RHY, CARB MDS/RHY, CA CL MAF, and MDS), although samples of all geodomains were captured in the testing program.

Cominco completed an ARD/ML characterization in the 1990's in support of their project development at the time. Their waste rock acid base accounting (ABA) static dataset (n = 243) was evaluated and deemed fit for use and was supplemented with ABA analysis of waste rock sampled from exploration drill core collected in 2015 (n = 324) to expand the geographic range of the samples, resulting in an ABA static dataset of 567 samples. Measurements of the acid generating potential (AP) and acid neutralizing potential (NP) indicated that the bulk of waste rock associated with the upper portion of the hanging wall (AK RHYv and AK RHYv) and the footwall (CA CL MAF) were not potentially acid generating (non-PAG). MDS samples from the southeastern corner of the ABM Zone were also largely non-PAG. Geodomains located proximal to the orebody (PY CL RHY, MU PY RHY, and to a lesser extent CARB MDS/RHY) tended to have higher sulphide content and were predominantly potentially acid generating (PAG). Although sulphide was not particularly elevated in RHYi samples from the Krakatoa zone, NP was generally low resulting in the majority of these samples also being classed as PAG. Shake flask extraction (SFE) testing indicated that, where present, elevated soluble trace element concentrations were mainly associated with the PY CL RHY, MU PY RHY, and CARB MDS/RHY geodomains. Elevated levels of SFE-soluble arsenic were also observed for the footwall CA CL MAF samples, related to its relatively high bulk arsenic content.

Mineralized rock and tailings samples were all PAG, however, their moderate to relatively high NP content will likely delay the onset of acidic leachate. Mineralized rock samples had elevated concentrations of SFE-soluble selenium, lead and zinc. Tailings samples also returned high soluble concentrations of the same elements in addition to copper and cadmium. Overburden soil and rock samples collected across the Project site were non-PAG, with limited metal leaching potential.

Humidity cell kinetic testing indicated that the time to acid generation in the majority of waste rock material is likely on the order of decades. Calculations of humidity cell AP and NP depletion times, in combination with the average rates of acid production and neutralization observed in the humidity cell data suggest that a site-specific NP/AP ratio of 1.9 may be used to delineate PAG (NP/AP<1.9) and non-PAG material. Ongoing trickle leach column and field barrel kinetic testing suggests that trace element leaching at circumneutral pH is a concern for selenium, antimony, uranium, and arsenic. The majority of elevated concentrations were associated with PAG material, although arsenic leaching was observed in the non-PAG CA CL MAF field barrel.

Waste rock classification criteria were developed based on the potential for acid generation and trace element leaching. Three classes of material were identified:

- Class A is strongly PAG material with an associated high potential for metal leaching. Waste rock with a total sulphur content greater than 2.9 wt.% or a NP less than 10 kg $CaCO_3$/t were placed in this category. Drainage from this storage facility requires management and treatment during operations and closure;

- Class B is mildly PAG with a potential for metal leaching that is lower than that of Class A material. Following satisfaction of the Class A criteria, waste rock is Class B if it has an NP/AP ratio that is less than 1.9. All of the CA CL MAF material that would otherwise be assigned to Class C is identified as Class B due to its tendency to leach arsenic at elevated concentrations. Drainage from this storage facility is expected to become acidic in the long term, but unlikely during the currently proposed mining operations. Trace element leaching from this waste rock may require management and treatment during operations; and

- Class C is non-PAG and has a relatively low potential for metal leaching. Waste rock with an NP/AP ratio greater than 1.9 is placed in this class (apart from CA CL MAF). Drainage from this storage facility is expected to remain circumneutral and is not anticipated to require treatment during operations or post-closure.

Preliminary source terms were developed for use in estimating drainage water quality from the three storage facilities and for designing the preliminary waste rock management plan. Further refinements of these source terms are anticipated as additional kinetic data are collected and parameters have stabilized. These data will continue to be integrated with the mine planning and scheduling in the engineering design for the Project.

LIST OF ACRONYMS

ACG	Access Consulting Group
AEG	Alexco Environmental Group Inc.
ABA	Acid Base Accounting
AK	Ankeritic
AP	Acid Generating Potential
ARD	Acid Rock Drainage
BCMOE	British Columbia Ministry of the Environment
CA	Calcite
$CaCO_3$	Calcite
CARB	Carbonaceous
CL	Chloritic
CRM	Certified Reference Material
COPI	Constituent of Potential Interest
DDH	Diamond Drill Hole
ICP-MS	Inductively-coupled Plasma Mass Spectrometry
KZK	Kudz Ze Kayah
MAF	Mafic
MDS	Mudstone Geodomain
ML	Metal Leaching
MU	Muscovite
NP	Neutralization Potential
PY	Pyrite
RDL	Reporting Detection Limit
RHY	Rhyolite Geodomain
RPD	Relative Percent Difference
SFE	Shake Flask Extraction
SO_4	Sulfate
SSWQO	Site Specific Water Quality Objective
TIC	Total Inorganic Carbon
VMS	Volcanogenic Massive Sulfide
XRD	X-ray Diffraction
YESAB	Yukon Environmental and Socio-economic Assessment Board

GLOSSARY

Acid Base Accounting: a screening procedure whereby the acid-neutralizing potential and acid-generating potential of rock samples are determined to estimate its potential to produce acid over time.

Acid Generating Potential: total acid a material is capable of generating which is used in acid base accounting to estimate potential future acidic drainage.

Acid Rock Drainage: drainage with acidic pH from material having an insufficient capacity to neutralize acidic products of sulphide and elemental sulphur oxidation and dissolution products of acidic minerals.

Aqua Regia: a mixture of 1 part nitric acid (HNO_3) to 3 parts hydrochloric acid (HCl).

Composite Sample: a sample comprising a subset of samples that can be collected from different locations and/or at different times.

Dissolution: the process by which solid material dissolves into a liquid (e.g., a mineral dissolving into groundwater).

Humidity Cell: a kinetic test used to determine the rates of acid generation and neutralization of geological material. Humidity cell tests involve aerobic weathering conditions and excess drainage in order to fully dissolve soluble weathering products. Standard methodology uses a 1 kg crushed rock sample exposed to 3 days of humid air followed by 3 days of dry air. On the 7th day, the material is flushed and the leachate chemistry is determined. Results from humidity cell tests are often used to calculate reaction rates and used in the development of source terms.

Kinetic Test: a procedure used to analyze dynamic physical and chemical processes of materials over time, including reaction rates, mineral alteration and drainage chemistry and loading resulting from the interaction between water and mine material. Kinetic tests are most often performed in controlled laboratory settings where environmental conditions are simplified (e.g., trickle leach columns and humidity cells) but can also be conducted at study sites under conditions that would be encountered in the field (e.g., field bin leaching tests).

Metal Leaching: extraction of soluble metals by solvents. Leaching can be natural or induced in a laboratory procedure.

Neutralization Potential: the total acid a material is capable of neutralizing. Measurements of NP are used in acid base accounting calculations to estimate future drainage pH and the potential for acidic drainage pH.

Shake Flask Extraction: a static test procedure designed to measure the mass of soluble constituents of a material. The standard procedure involves a 3:1 solution to solids ratio, agitated for 24 hours, however variations of this test can be employed.

Source Terms: predicted concentrations in drainage water in contact with geological materials under conditions expected to be encountered at a particular site. Source terms are often derived using kinetic tests and scaling factors to adjust for the environmental and physical conditions. Water and mass load models incorporate source terms in the prediction of chemical concentrations in receiving environments.

Static Test: a procedure for determining the physical, chemical or biological characteristics of a sample at a point in time and includes the measurements of chemical composition and Acid Base Accounting analyses.

Trickle Leach Column: a kinetic test often conducted in a laboratory that is designed to measure the drainage chemistry of water percolated through a column of geological material. Leach column tests attempt to simulate the weathering, leaching and mineral precipitation and dissolution that occur in field conditions and the results of these tests are often used in the development of predictive source terms.

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1 INTRODUCTION

BMC Minerals (No. 1) Ltd. (BMC) purchased the Kudz Ze Kayah (KZK) base metal project in January, 2015. The KZK Project (the Project) is located 110 km southeast of Ross River, Yukon Territory and is currently undergoing various studies to support a Project Proposal for Yukon Environmental and Socio-economic Assessment Board (YESAB) consideration. As part of the EA preparation, BMC has directed Alexco Environmental Group Inc. (AEG) to assess the acid rock drainage and metal leaching (ARD/ML) capacity of material that will be disturbed during the development and operation of the KZK Mine. This report provides the results and interpretation of static testing and ongoing kinetic testing of such material.

This ARD/ML report is organized in the following manner. Chapter 2 provides a short summary of the KZK property history and its geological background. Chapter 3 presents an overview of the ARD/ML program, while Chapter 4 describes the static testing that was performed and the kinetic testing which is ongoing. The results and their interpretation are discussed in Chapter 5, and the implications of these results to waste management are presented in Chapter 6. The development of preliminary source terms for use in water quality modelling is described in Chapter 7, and the key findings of the ARD/ML work to date are summarized in Chapter 8.

2 BACKGROUND

2.1 PROJECT BACKGROUND

The Project is a proposed open pit / underground copper, lead and zinc mine located within the Watson Lake Mining District, approximately 260 km northwest of Watson Lake, 110 km southeast of Ross River and 24 km southwest of the Robert Campbell Highway near Finlayson Lake, Yukon (Figure 2-1). The KZK Property was purchased by BMC Minerals (No.1) Ltd. (BMC) from Teck Resources in January 2015.

The mineral potential of the Project was first recognized in 1992 by Cominco Ltd. In 1994, Cominco tested the target via the first discovery diamond drill hole (DDH) which identified sulphide rock which analyses reported to contain 10.0% zinc and 2.8% lead as well as significant silver, gold and copper. Significant geological work on the KZK property was carried out between 1995-1998 to define the extents of the massive sulfide mineralization. Over the following 16 years, however, very little work on the Project was completed.

BMC purchased the property in January 2015. Since that time BMC has undertaken additional exploration to define the deposit and commissioned a variety of baseline surveys to upgrade and expand the existing Cominco database. The following is an overview of the Project BMC is proposing.

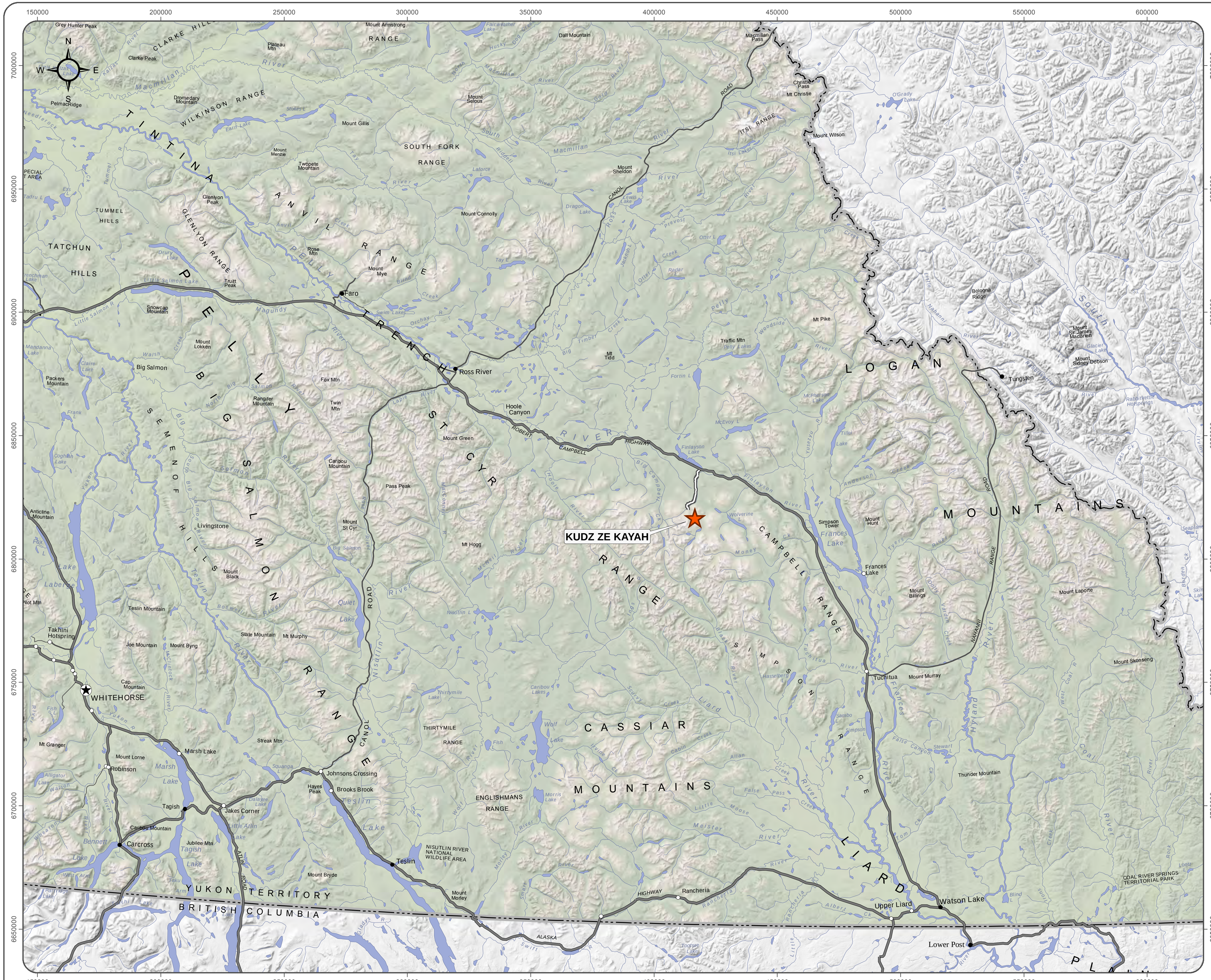
The Project comprises the ABM Deposit, of which there are two zones, the ABM Zone and the Krakatoa Zone. The ABM Deposit is a polymetallic volcanogenic massive sulphide (VMS) deposit containing high concentrations of copper, lead, zinc, gold and silver. Mining is planned to be conducted via both open pit and underground mining methods, with ore processed into separate copper, lead and zinc concentrates via sequential flotation through a 2.0 Mtpa (million tonnes per year) processing plant. Filtered tailings will be deposited in the Class A Storage Facility on the western slope of the Geona Creek valley or alternatively stored as paste backfill in the mined out underground workings. Waste rock will be stored according to acid generation and metal leaching potential in the Class A, B and C Storage Facilities. Strongly acid generating material will be co-disposed with the tailings in the Class A Storage Facility.

The mine is planned to operate for ten years, producing up to 180,000 t zinc, 35,000 t copper, and 25,000 t lead concentrates annually. Concentrate will be transported to the port of Stewart in British Columbia for sale to market.

2.2 GEOLOGY

The following summary of KZK geology has been adapted from the 2015 Geological, Geophysical, Diamond Drilling and Environmental Report of the Kudz Ze Kayah Property (Equity, 2016). The KZK Property is located within the Finlayson Lake District; a crescent shaped area, located between Ross River in the north and Watson Lake in the south. The Finlayson Lake District is composed of Devonian to Mississippian volcanic, intrusive and sedimentary rocks and is underlain by polydeformed metamorphosed sedimentary, volcanic and plutonic rocks of the Yukon–Tanana terrane, which extends from central British Columbia to Eastern Alaska.

The Yukon–Tanana terrane in the vicinity of the Finlayson Lake belt is composed of foliated and lineated greenschist to lower amphibolite-grade metasedimentary, metavolcanic and metaplutonic rocks. The Yukon–Tanana terrane was imbricated by Permian thrust faulting into the Cleaver Lake, Money, and Big Campbell thrust sheets. The KZK Property is located within the Big Campbell thrust sheet, which is the structurally deepest of the Yukon–Tanana terrane. The Grass Lake and Wolverine middle Palaeozoic unconformity-bound groups are exposed in the Big Campbell thrust.

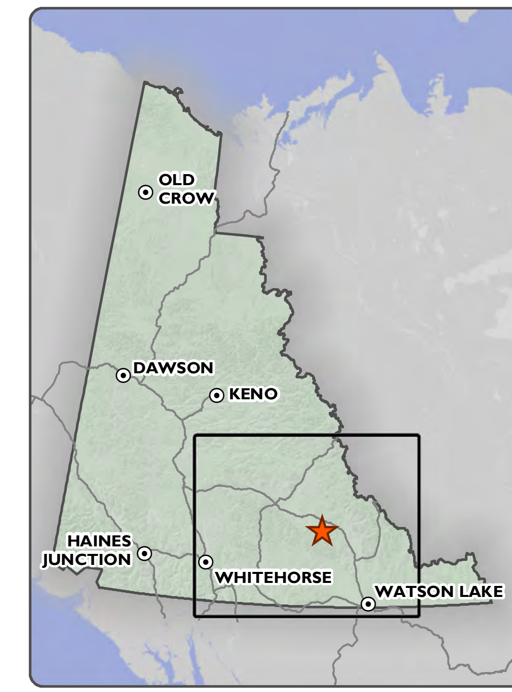


KUDZ ZE KAYAH PROJECT

FIGURE 2-1

LOCATION OF KUDZ ZE KAYAH PROJECT AREA

OCTOBER 2016



★ KUDZ ZE KAYAH PROJECT

Digital elevation model created by the Yukon Department of the Environment interpolated from the digital 1:50,000 Canadian National Topographic Database (NTDB Edition 2) contour and watercourse layers. Obtained from Geomatics Yukon.

Drainage areas obtained from National Hydrology Network 2011

Datum: NAD 83; Projection UTM Zone 9N

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On the KZK property, the Grass Lake Group is divided into three main stratigraphy components:

- The Kudz Ze Kayah Formation felsic volcanic package hosting all significant VMS mineralization on the Property;
- The overlying “Upper Sedimentary and Mafic Volcanic Sequence” metasedimentary package (or “Wind Lake Formation”); and
- The underlying “Lower Sedimentary Sequence” metasedimentary package.

The Lower Sedimentary Sequence consists mainly of siltstone, phyllitic schist, light grey quartzite and more massive tuffaceous wacke with feldspar porphyry. Mafic sills and dykes are common and locally associated with thinly banded cherty layers.

The KZK Formation is a thick felsic, epiclastic and intrusive/flow (dome) complex with minor mafic sills and flows and rare interbedded sediments. Sediments consist of tuffaceous and carbonaceous mudstone, wacke and orthoquartzite. The KZK Formation has been divided into the following mappable units:

- Felsic tuff (RHYv);
- Coherent felsic flows/intrusives (RHYc);
- Feldspar-quartz porphyry intrusive (RHYi);
- Mudstone (MDS); and
- Undifferentiated mafic volcanic (MAFi).

Felsic tuff is the most abundant unit. Mafic components are found throughout the KZK Formation and are present as two distinct units: a strongly-foliated porphyroblastic chlorite-biotite-calcite schist occurring beneath the ABM ore body and a coarse-grained mafic schist.

The Upper Sedimentary and Mafic Volcanic Sequence base is approximately 200 m above the ABM deposit. It is composed of variably carbonaceous and calcareous mudstone with minor quartzite, siltstone and limestone, intercalated with mafic volcanic and minor felsic volcanic units. It is finer grained than the Lower Sedimentary Sequence formation.

The ABM deposit comprises two major zones (the ABM Zone and Krakatoa Zone) separated by the East Fault which strikes north-northeast. The ABM zone is a massive sulphide and stringer-style sulphide mineralization hosted primarily within a felsic volcanic package in the immediate hanging wall to a chlorite-altered mafic schist. The Krakatoa Zone is mainly hosted at or proximal to the lower contact with the chlorite-altered mafic schist unit and has less stringer/disseminated style mineralization than the ABM Zone.

Sulphide mineralization comprises about 85% of the ABM lens and is primarily composed of pyrite, sphalerite, pyrrhotite, galena and chalcopyrite with gangue minerals of chlorite, magnetite, quartz, Fe-carbonate, calcite, sericite, cordierite, albite, celsian and barite. Pyrite is the predominant sulphide mineral and is fine to coarse-grained. Silica, barite and carbonate gangue are mostly found in the lower portions of the massive sulphide lenses in both zones. Stringer/disseminated style mineralization consists of chalcopyrite + pyrrhotite + pyrite ± sphalerite ± galena with trace magnetite and commonly has strong to intense chlorite ± cordierite alteration.

Ten geodomains have been defined in the ABM open pit at the KZK property by BMC geologists based on field observations. The geodomains classify volumes of rock together based on similar geologic and geochemical characteristics and may cross primary lithological and/or alteration boundaries (Equity, 2015a,b). As per Equity (2015a, b), features considered in the geodomain interpretation include (Table 2-1):

- Primary lithology – main subdivisions: coherent rhyolite (RHYc), volcanoclastic rhyolite (RHYv), carbonaceous mudstone (MDS), carbonaceous rhyolite (MDSt and MDSw) and mafic intrusive (MAF);

- Carbonate content – calcite and ankerite;

- Disseminated pyrite and pyrrhotite;

- Muscovite; and

- Chlorite.

Table 2-1: Geodomain Characteristics

Geodomain ID	Features	Comments
AK RHYc	Moderate-strong ankeritic (AK) coherent (c) rhyolite (RHY)	Strong ankeritic zone in upper parts of hanging wall that crosses lithology
AK RHYv	Moderate-strong ankeritic(AK) volcaniclastic (v) rhyolite (RHY)	Strong ankeritic zone in upper parts of hanging wall that crosses lithology
CA CL MAF	Calcite (CA)-chlorite (CL) mafic (MAF) intrusive	Distinct unit in footwall of deposit interpreted to be an intrusive. Consistently calcite-bearing
CARB MDS/RHY	Felsic volcanic rock (coherent and volcaniclastic) with carbonaceous (CARB) material and associated with thin mudstone (MDS) intervals. Generally, with disseminated pyrite and muscovite, locally minor ankerite	Carbonaceous mudstone/rhyolite dominated intervals lumped together
MDS	Upper, thick mudstone (MDS) package	Within fault offset (down-dropped) block; confined to southeastern corner of deposit
MU PY RHY	Moderate-strong muscovite (MU)-altered rhyolite (RHY) with disseminated pyrite (PY)	Generally proximal to massive sulphide, characterized by coarse sericite (muscovite)
PY AK RHYc	Moderate-strong ankeritic (AK) coherent (c) rhyolite with disseminated pyrite (PY)	Below AK RHYc/v in disseminated pyrite halo to deposit
PY AK RHYv	Moderate-strong ankeritic (AK) volcaniclastic rhyolite (RHY) with disseminated pyrite (PY)	Below AK RHYc/v in disseminated pyrite halo to deposit
PY CL RHY	Chloritic (CL) rhyolite coherent and volcaniclastic rhyolite (RHY) with disseminated pyrite (PY)	Smaller unit proximal to massive sulphide in hanging wall characterized by chlorite
RHYi	Hard, siliceous, fine-grained felsic intrusive (i) typically with 2-3% disseminated pyrite	Largely confined to Krakatoa Zone. This geodomain is present in ABM but well below the mineralization

3 ARD/ML PROGRAM

Approximately 137 Mt of waste rock and overburden are projected to be generated during the life of the Mine. Processing of the ore is anticipated to produce approximately 15 Mt of tailings that require management and disposal. Overburden material (*ca*. 16 Mt) will be excavated during the development of the open pit, Mine Storage Facilities, the Process Plant area, and watercourse diversions. All of these components require a geochemical testing program to inform both the management of these materials during active operations and the measures required to minimize the impact of such materials to the environment following closure. The ARD/ML program will also help identify geochemically benign waste rock and overburden that may be used in for construction activities on site.

The ARD/ML sampling and analysis program was designed to meet anticipated regulatory requirements and follows the practices outlined by Price (2009). Static testing included acid base accounting (ABA) performed on all samples and elemental analysis performed on the majority to assess the acid generating capacity of the waste materials and the concentration of elements of potential concern. Mineralogical examination was also performed on a subset of samples in addition to short term leaching tests to assess the soluble metal load that may be released upon flushing. Kinetic testing designed to inform long term metal leaching potential of waste rock and tailings material was also initiated. This comprised a laboratory-based program of 10 large scale trickle leach columns of waste rock material, supplemented with 3 humidity cells. A field barrel program was also initiated, at site, in the fall of 2015.

During Cominco's permitting of the Kudz Ze Kayah project in the mid-1990's, Norecol, Dames & Moore were commissioned to characterize the ARD/ML properties of waste rock, tailings, and overburden associated with the ABM open pit (NDM, 1996). This study has been carefully reviewed, and where appropriate, the results have been used to supplement the ARD/ML work performed in 2015/16. The static work performed by NDM (1996) is largely consistent with current industry standard ARD/ML practices and considered to be of good quality, however, the kinetic testing (humidity cells, subaqueous columns, and trickle leach columns) suffered from poor trace element detection limits. As such, the static testing data produced by NMD (1996) has been used to supplement the ARD/ML test work performed to date on drill core collected by BMC, whereas only the major constituent chemistry of the kinetic data has been deemed reliable for use.

4 METHODS

4.1 SAMPLE SELECTION

Following a review of information provided to AEG by BMC, which included mine plan data and historic ARD/ML and site evaluation studies performed on behalf of Cominco in 1996, AEG developed an ARD/ML characterization plan. The following subsections outline the sampling plan and sample collection performed to date, which augments the static ARD/ML data reported by NDM (1996) and accepted by AEG on the basis of the documentation provided by BMC. The reader is also referred to the methods documented in the historic Cominco work performed in the mid-1990's (NDM, 1996).

4.1.1 WASTE ROCK

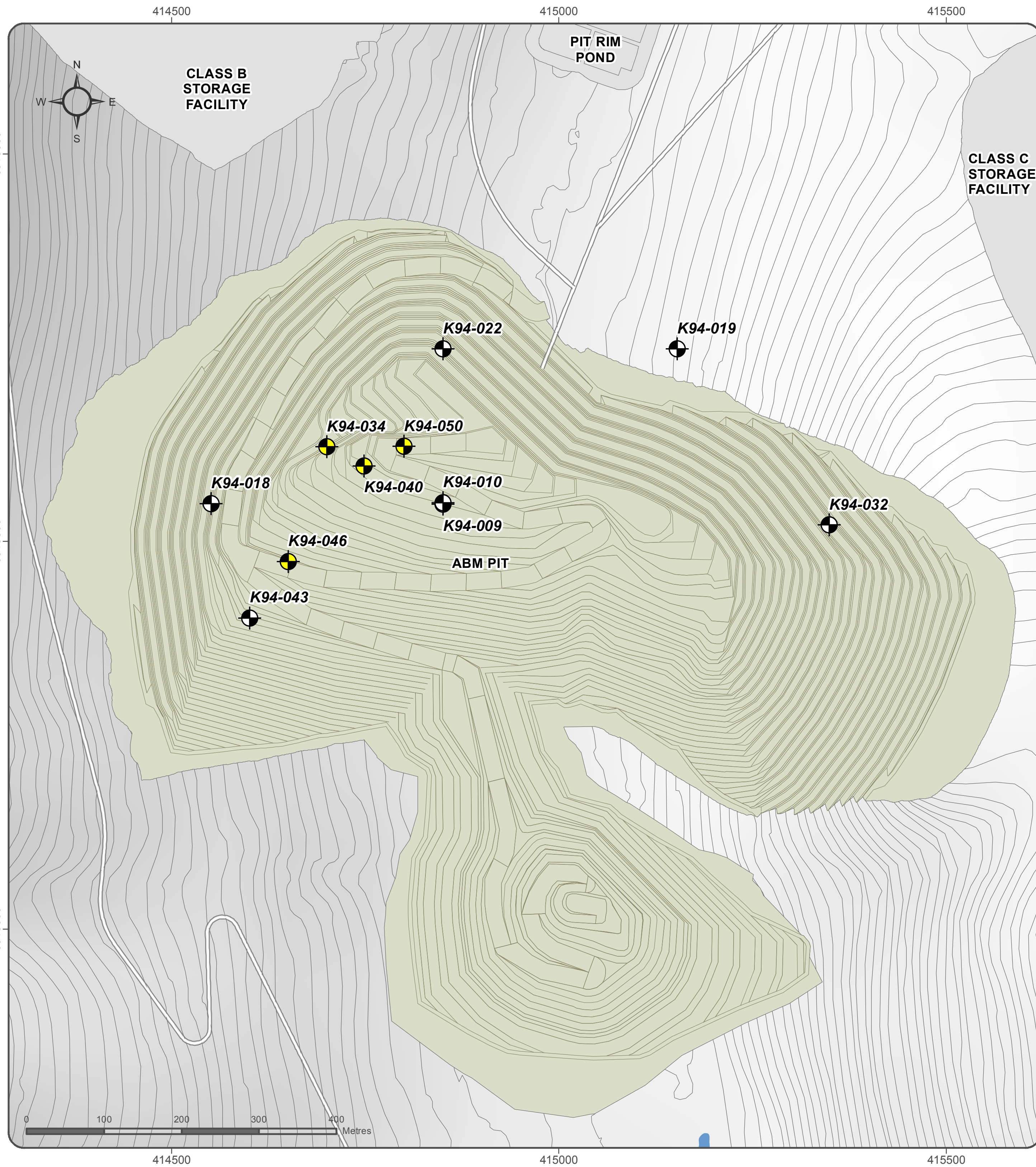
Between the Cominco historic ARD/ML characterization work (NDM, 1996) and the current AEG program, 567 rock samples were selected for analysis. These comprised:

- 243 samples of drill core collected in 1994 that were subjected to ARD/ML characterization by Cominco (NDM, 1996) and the data relogged into geodomains according to the current BMC geodomain convention; and
- 324 samples largely collected from core that was drilled in BMC's 2015 exploration campaign.

A plan view of the drill core locations sampled by Cominco (NDM, 1996) and the current 2015/16 AEG program are shown in Figure 4-1 and Figure 4-2, respectively. Cross sectional views for the 2015 drill core samples are presented in Appendix A. The majority of the samples that were collected by Cominco for ARD/ML analysis were derived from four drill holes located in the western portion of the ABM open pit area (NDM, 1996). As such, one objective of the 2015 drill core ARD/ML sampling program was to widen the spatial distribution of rock samples for geochemical characterization. Drill core samples were selected in order to characterize the variability and relative abundances of the geodomains identified in the ABM open pit boundary. The majority of these samples were selected from core collected during the 2015 drilling program, however, a subset of the core collected in 1994 was also examined. A list of the samples collected for analysis is provided in Table 4-1. The samples were selected in order to:

- Represent relatively more abundant waste rock quantities based on estimations by BMC;
- Represent material that will form significant portions of the pit wall;
- Vary spatially, recognizing variability caused by deposit evolution, structural controls and depth; and expand on previous ARD/ML work that focused samples in the western sections of the pit to include samples distributed spatially across and within the ABM open pit host rocks; and
- Focus on geodomains and zones that previous ARD work indicated to be particularly variable with a range of sulphide, carbonate or metals of interest.

Further details regarding the sample selection can be found in ACG (2015), which forms Appendix B. Samples were selected by BMC and AEG staff following the guidelines laid out in ACG (2015).



Drillhole Locations

Drillhole Locations that Supplied Most Samples for Analysis

ABM Open Pit Contour

Project Site Road

ABM Open Pit

Location of Proposed Mine Infrastructure

Waterbody

Watercourse

Contour (5 m Interval)

KUDZ ZE KAYAH PROJECT

FIGURE 4-1

COMINCO DRILLHOLE LOCATIONS

FEBRUARY 2017

Datum: NAD 83; Projection: UTM Zone 9N

AEG

BMC MINERALS

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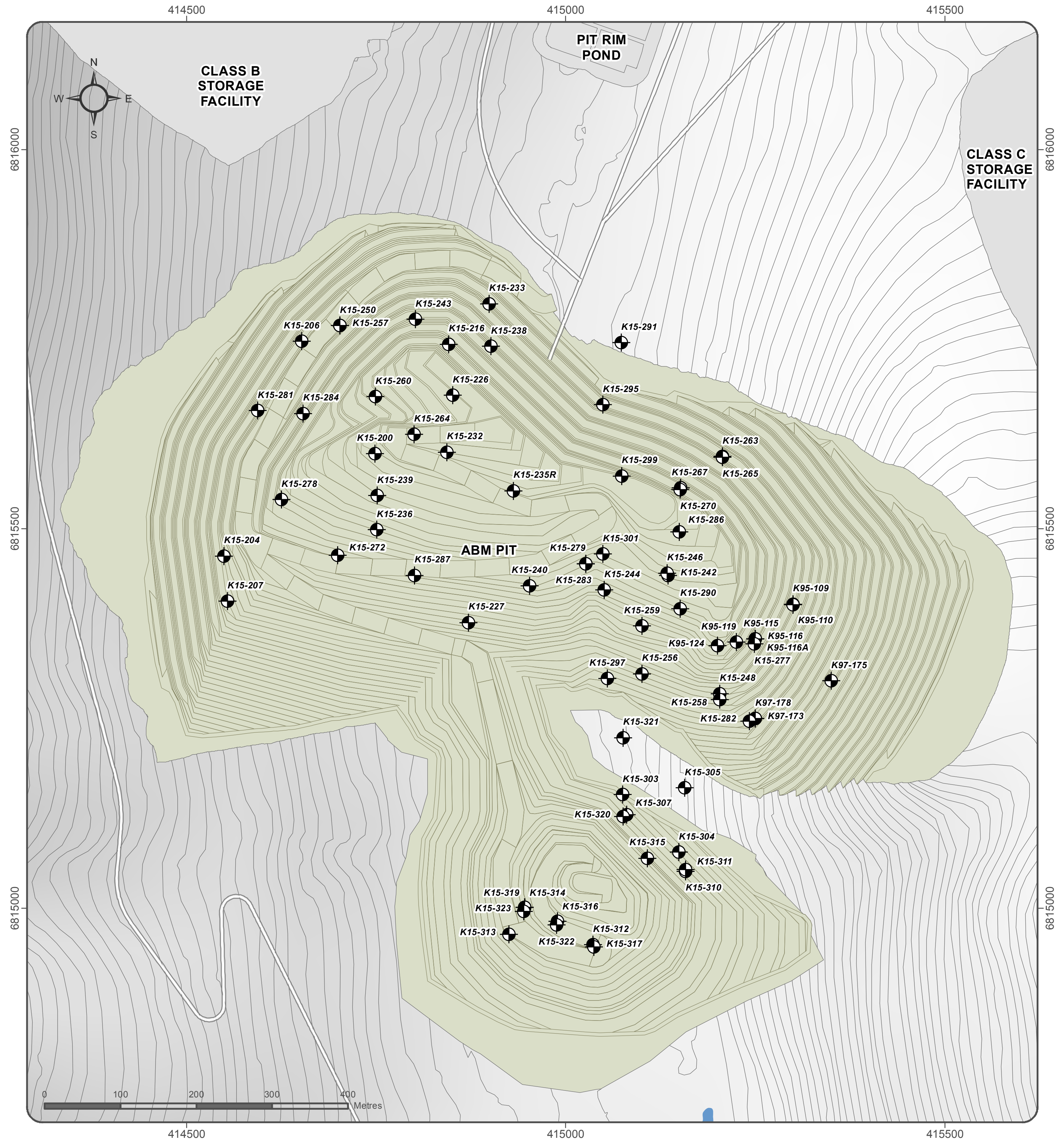

Drillhole Locations

ABM Open Pit Contour

Project Site Road

ABM Open Pit

Location of Proposed Mine Infrastructure

Waterbody

Watercourse

Contour (5 m Interval)

KUDZ ZE KAYAH PROJECT

FIGURE 4-2

AEG 2015/16 SAMPLE SELECTION DRILLHOLE LOCATIONS

Datum: NAD 83; Projection: UTM Zone 9N

AEG

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Table 4-1: Number of Rock Samples by Geodomain Relative to Sample Set, Zone and Anticipated Waste Tonnage

Sample	Sample Set by Year			Sample Set by Zone				Anticipated Waste Tonnage [a]				
	1994 (Historic Cominco)	2015	Total	ABM Zone	% ABM Zone Samples	Krakatoa Zone	% Krakatoa Zone Samples	ABM Zone (t)	ABM (%)	Krakatoa Zone (t)	Krakatoa (%)	Total Waste Tonnage (t)
AK RHYc	0	6	6	6	1%	0	-	1,282,000	1%	-	0%	1,282,000
AK RHYv	52	42	94	88	17%	6	11%	29,800,000	28%	40,000	0%	29,841,000
PY AK RHYc	14	24	38	38	7%	0	-	9,562,000	9%	-	0%	9,562,000
PY AK RHYv	67	76	143	132	25%	11	20%	25,189,000	24%	8,538,000	50%	33,727,000
CARB MDS/RHY	46	40	86	83	16%	3	5%	9,877,000	10%	31,000	0.2%	9,908,000
MU PY RHY	20	36	56	47	9%	9	16%	9,964,000	9%	2,397,000	14%	12,361,000
PY CL RHY	26	15	41	41	8%	0	-	4,322,000	4%	-	0%	4,322,000
CA CL MAF	16	37	53	39	7%	14	25%	5,175,000	5%	3,347,000	21%	8,522,000
MDS	2	36	38	38	7%	0	-	11,551,000	11%	-	0%	11,551,000
RHYi	0	12	12	0	-	12	22%	-	0%	2,634,000	14%	2,634,000
Total	**243**	**324**	**567**	**512**	**100%**	**55**	**100%**	**106,722,000**	**100%**	**16,987,000**	**100%**	**123,709,000**

[a] Based on an estimate of waste rock tonnages produced from the ABM open pit provided by BMC on October 17, 2016. Tonnages are rounded to the nearest thousand tonnes. The relative abundance calculation excludes estimated tonnage of massive sulphide unit.

A break down of the static testing performed on the rock samples as a function of geodomain is presented in Table 4-2. All of the rock samples selected (n=567) were subjected to ABA analysis and the majority (n=324) were also subjected to elemental analysis via aqua regia digestion with ICP-MS finish. The 2015/16 AEG test work included 59 samples selected from the Cominco core that was drilled between 1994 and 1997 to be analyzed by ABA and aqua regia. This was partly to include adequate coverage for the MDS geodomain, which is restricted to the eastern flank of the ABM open pit area, but also to assess the build up of metal sulphide oxidation products (e.g., accumulation of soluble sulphate phases) over the two decades of core storage.

A subset of 24 samples were selected for mineralogical examination using X-ray diffraction (XRD) with Rietveld refinement. These samples, collected across the major geodomains, represent a range of total sulphur concentrations, neutralization potential (NP), neutralization potential ratios (NP/AP) and trace metal concentrations of constituents of potential concern for metal.

Table 4-2: Number of Rock Samples Subjected to Static Testing as a Function of Geodomain

Geodomain	Static Testing			
	ABA	Aqua Regia ICP-MS	SFE	XRD
AK RHYc	6	6	1	0
AK RHYv	94	42	7	3
PY AK RHYc	38	24	5	3
PY AK RHYv	143	76	11	4
CARB MDS/RHY	86	40	6	3
MU PY RHY	56	36	6	3
PY CL RHY	41	15	3	2
CA CL MAF	53	37	6	2
MDS	38	36	6	4
RHYi	12	12	4	0
Total	**567**	**324**	**55**	**24**

A further 55 samples were subjected to shake flask extraction (SFE). These samples broadly reflect the ABM open pit geodomain abundance, and consideration was given to data from initial static testing analyses such that the selected samples:

- Represented a range of total sulphur concentrations, NP, and NP/AP ratios; and

- Spanned a range of trace metal concentrations of constituents of potential interest (COPI) such as antimony, arsenic, cadmium, lead, selenium and zinc.

Eighteen samples were selected from the Cominco core collected in the mid 1990's to be analyzed by SFE due to their inclusion in kinetic testing by NDM (1996). Given that the Cominco core had been stored under ambient conditions (albeit protected from precipitation), SFE testing on these samples was also expected to help assess the soluble metal(loid) load that may be released from the oxidation products that had accumulated during the two decades of storage.

4.1.2 MINERALIZED ROCK SAMPLES

Four distinct mineralized rock domains have been identified in the ABM deposit (BMC, 2015). Eight mineralized samples, comprising two from each mineralized domain, were submitted for ABA and aqua regia ICP metals analysis. Four of these samples, one from each mineralized domain, were also subjected to SFE testing (Table 4-3).

4.1.3 TAILINGS SAMPLES

Locked cycle tests were conducted by ALS Environmental (Perth, Australia) to produce copper, lead and zinc concentrate for thickening and filtration tests and tailings for thickening, filtration, geotechnical and environmental testing purposes. The mineralized composite used for the bulk flotation tests was a blend of ABM and Krakatoa composites, intended to replicate the average distribution of mineralized types over the life of the mine. The head assay of the bulk flotation composite was 0.89 wt.% Cu, 1.71 wt.% Pb, 5.85 wt.% Zn, 1.15g/t Au, 138 g/t Ag, 500 ppm Sb and 2,800 ppm As.

The locked cycle consisted of:

- Primary grinding to 80% -70 µm;
- Copper pre-rougher and pre-cleaner flotation to produce final copper concentrate without regrinding;
- Copper rougher flotation, regrinding of rougher concentrate and pre-cleaner tailings to 80% passing 30 µm and two cleaner flotation stages;
- Lead rougher flotation, rougher concentrate regrinding to 80% passing 30 µm and two cleaner flotation stages.;
- Zinc pre-rougher and pre-cleaner flotation to produce final zinc flotation concentrate without regrinding; and
- Zinc rougher flotation, regrinding of rougher concentrate and pre-cleaner tailings to 80% passing 35 µm and two cleaner flotation.

The locked cycle tests produced four tailings samples that were provided to AEG and were submitted for ABA, aqua regia ICP-MS metals and SFE analyses (Table 4-3). Major and trace element analysis of the supernatant water associated with one tailings sample following the locked cycle test was also available from ALS Environmental.

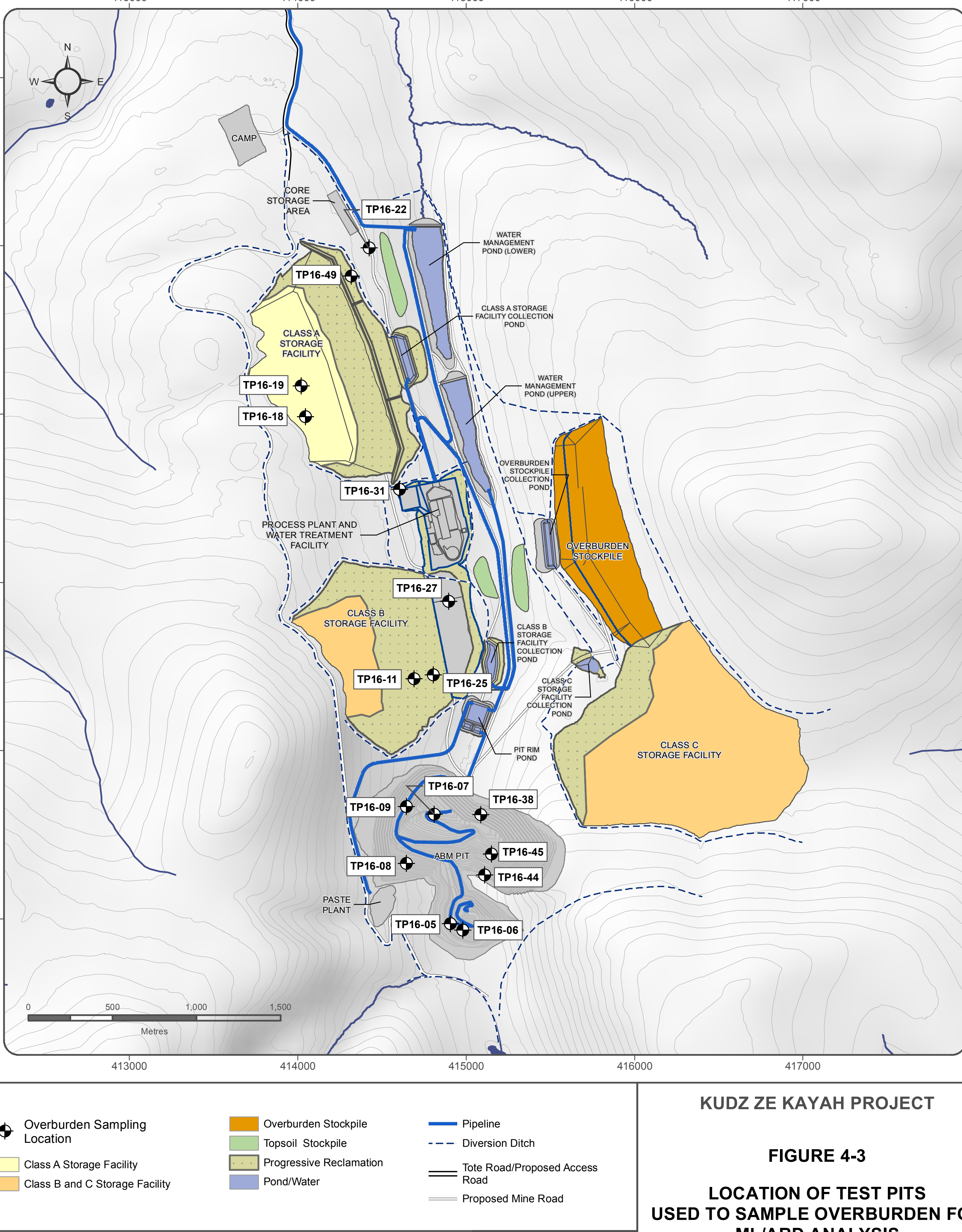
Table 4-3: Summary of Number of Static Test Analyses of Metallurgical Samples.

Sample	ABA	ICP	SFE	XRD	Aqueous Chemistry
Ore	8	8	4	0	-
Tailings	4	4	4	2	-
Supernatant	-	-	-	-	1
Total	**12**	**12**	**8**	**1**	**1**

4.1.4 Overburden Samples

Overburden samples were collected as part of Knight Piésold's geotechnical program in May 2016. Overburden was excavated to a depth of 0.5 to 5 m at locations where significant earth moving activities are planned, including the ABM deposit and the proposed locations of Storage Facilities and Process Plant. Sixteen samples collected across the site (Figure 4-3) were selected for ABA and aqua regia ICP-MS multi-element analysis. SFE testing was also performed on a subset of eight overburden samples.

Twenty eight additional overburden samples (Figure 4-4), including material that may be suitable for use as borrow and rip rap material, were also collected in September 2016 along the Tote Road and were similarly subjected to ABA and aqua regia ICP-MS analysis, with SFE testing performed on a subset of 16 samples.



KUDZ ZE KAYAH PROJECT

FIGURE 4-3

LOCATION OF TEST PITS USED TO SAMPLE OVERBURDEN FOR ML/ARD ANALYSIS

FEBRUARY 2017

Datum: NAD 83; Projection: UTM Zone 9N

AEG

BMC MINERALS

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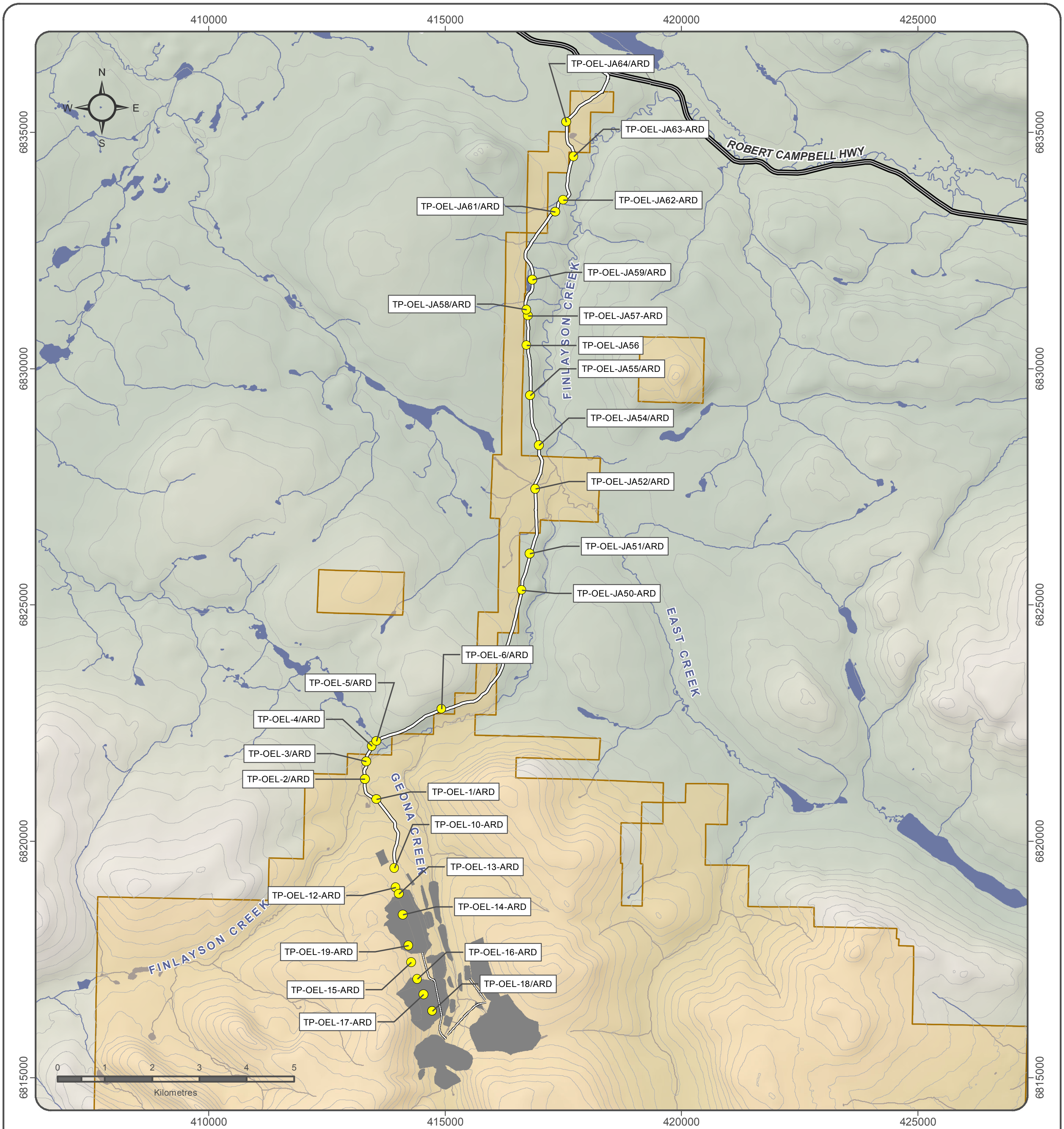

Potential Borrow Source Sampling Location

Location of Proposed Mine Infrastructure

BMC Minerals (No. 1) Ltd. Claim Areas

Tote Road/Proposed Access Road

Project Site Roads

Contour (40 m interval)

Watercourse

Waterbody

KUDZ ZE KAYAH PROJECT

FIGURE 4-4

POTENTIAL BORROW SOURCE SAMPLING LOCATIONS

FEBRUARY 2017

Datum: NAD 83; Projection: UTM Zone 9N

AEG

BMC MINERALS

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4.2 STATIC TESTING

4.2.1 SAMPLE PREPARATION

The drill core samples were submitted for analysis to Global ARD Testing Services Inc., Burnaby, BC, Canada. Each sample (typically 2 to 4 kg) was crushed to 80% passing 2-inch particle size initially since planned trickle leach kinetic experiments required a relatively coarse grain size. A riffle splitter was used to provide a homogenous split that was further jaw-crushed to 85% passing ¼ inch (6.3 mm). This size fraction was set aside for use in humidity cell and SFE testing. A subsample (150 to 170 g) of this crushed sample was then obtained using a riffle splitter and was further pulverized to 85% passing 200 mesh (75 µm) for ABA, aqua regia ICP-MS, and XRD analyses.

4.2.2 ABA

The acid base accounting (ABA) analysis included:

- Modified Sobek neutralization potential (Coastech, 1991);
- Siderite-corrected neutralization potential (Skousen et al., 1997) on selected samples;
- Total Sulphur by Leco;
- Sulphate-sulphur by HCl extraction;
- Total inorganic carbon; and
- Paste pH.

The neutralization potential (NP) was determined using the modified Sobek method (Coastech, 1991). Since ferrous carbonate was anticipated to represent a significant portion of the carbonate mineralogy in a number of samples, NP was also determined using the Sobek method with the peroxide siderite correction (Skousen et al., 1997) on a subset of samples as a check on the NP data. Total sulphur was measured by LECO, sulphate was determined with HCl leach and sulphide sulphur calculated as the difference between total sulphur and sulphate sulphur. Total inorganic carbon was measured with the direct HCl method.

4.2.3 ELEMENTAL ANALYSIS

Trace metals were determined via aqua regia digestion where 0.5 g of pulped material is leached in hot (95°C) aqua regia (3:1 ratio of concentrated hydrochloric acid: nitric acid). Following digestion, the filtered digestate is analyzed by inductively coupled plasma-mass spectrometry (ICP-MS) to determine the trace and major element content of the sample. This method is considered as a pseudo-total digestion; although the majority of minerals in the sample will be dissolved (e.g., carbonates, sulphides, hydroxides, and most oxides), some refractory silicate phases may be only partially digested. Nevertheless, dissolution of those minerals that are most environmentally significant from an ARD/ML perspective (i.e., sulphides and carbonates) is accomplished by aqua regia digestion.

4.2.4 XRD

The XRD analysis was conducted on 20 samples from the 2015 ABM DDH core at the University of British Columbia via Global ARD Testing Services Inc., Burnaby, BC, Canada The samples were reduced to the optimum grain-size range for quantitative X-ray analysis (<10 µm) by grinding under ethanol in a vibratory McCrone Micronising Mill for 10 minutes. Step-scan X-ray powder-diffraction data were collected over a range 3-80° 2θ with Co Kα radiation on a Bruker D8 Advance Bragg-Brentano diffractometer equipped with an Fe monochromator foil, 0.6 mm (0.3°) divergence slit, incident- and diffracted-beam Soller slits and a LynxEye-XE detector. The long fine-focus Co X-ray tube was operated at 35 kV and 40 mA, using a take-off angle of 6°. The X-ray diffractograms were analyzed using the International Centre for Diffraction Database PDF-4 and Search-Match software by Bruker. X-ray powder-diffraction data of the samples were refined with Rietveld program Topas 4.2 (Bruker AXS). The results of quantitative phase analysis represent the relative amounts of crystalline phases normalized to 100%. The detection limit is approximately 0.1 wt.%, dependent on the phase in question.

4.2.5 SFE

A standard 24-hour shake flask extraction (Price, 2009) test was conducted. The tests were performed using rock ground to less than 6.3 mm and deionized water as the extraction fluid at a 3:1 water to solids ratio, by weight. Following 24 hours of gyratory shaking, the sample was filtered (0.45 µm) and the concentrations of major and trace elements in the leachate was measured by ICP-MS.

4.3 KINETIC TESTING

Kinetic testing consisted of laboratory-based humidity cells and trickle leach columns and site-based field barrels. The laboratory kinetic testing program, performed by Global ARD Testing Services Inc. (Burnaby, BC), was started in February of 2016 and initially included seven subaerial trickle leach columns and two humidity cells all bearing waste rock material. The collection of further samples expanded the laboratory-based kinetic testing program such that ten subaerial trickle leach columns and three humidity cell were in operation at the time of writing. Nine of the subaerial trickle leach columns were composed of waste rock, whereas the tenth contained a mixture of tailings material and waste rock consistent with BMC's current disposal and storage strategy for tailings and sulphidic waste rock. Two of the humidity cells contained waste rock, whereas tailings material comprised the third humidity cell. Twelve field barrels were also compiled at site in November 2015. The broad composition of the kinetic tests is presented in Table 4-4. Further details regarding the kinetic testing methods are presented below.

Table 4-4: Geodomain Composition of Kinetic Testing

		Geodomain [a]										
	Test ID	**AK RHYc**	**AK RHYv**	**PY AK RHYc**	**PY AK RHYv**	**CARB MDS/RHY**	**MU PY RHY**	**PY CL RHY**	**CA CL MAF**	**MDS**	**RHYi**	**Tailings**
Trickle Leach Column	**C-1**	x	**X**									
	C-2	x	x	**X**	**X**							
	C-3						**X**					
	C-4					**X**						
	C-5 [b]			x	**X**							
	C-6		x	x	x	x		x	x			
	C-7					**X**	x	**X**				
	C-8										**X**	
	C-9									**X**		
	C-10			x	x	x	x				x	**X**
Humidity Cell	**HC-1** [b]			x	**X**							
	HC-2					**X**						
	HC-3											**X**
Field Barrel	**FB-1**				**X**							
	FB-2				**X**							
	FB-3					**X**						
	FB-4								**X**			
	FB-5	**X**										
	FB-6			**X**								
	FB-7						**X**					
	FB-8			**X**								
	FB-9		**X**									
	FB-10							**X**				
	FB-11		**X**									
	FB-12				**X**							

[a] Uppercase "**X**" and lowercase "x" denotes major and minor components, respectively.

[b] C-5 and HC-1 comprise the same composite waste rock material.

4.3.1 LABORATORY-BASED KINETIC TESTING

Ten subaerial trickle leach columns were constructed using material crushed to 80% passing 2-inch particle size. Each trickle leach columns contained approximately 27 kg of material that was composited from ten to thirteen core samples selected in order to assess the metal leaching behaviour of a particular geodomain, or class of waste material (e.g., high sulphide-sulphur content and/or low NP material). Further details regarding the trickle leach column composition are provided in Section 5.2.1.

The material was housed in a clear extruded acrylic column with perforated acrylic disc based lined with 200 nylon mesh. Addition of 1 L of deionized water occurred over a duration of 4 hours via a peristaltic pump once a week and the leachate water that passed through the column was collected for analysis.

Three humidity cells were constructed and operated following the ASTM (2010) method. Two humidity cells contained waste rock material, one of which (HC-1) comprised the same composite material used in a trickle leach column (C-5). The third humidity cell contained tailings material produced locked cycle Test 29 (Cycles 1-6). The humidity cell material was crushed to 85% passing ¼ inch (6.3 mm) except for the tailings cell which comprised "as-received homogenized sample". During each weekly cycle, dry air was circulated through the humidity cells for the first 3 days, followed by humidified air for three days, before the cell was flood leached by the addition of 500 mL of deionized water on the seventh day. A photograph of the trickle leach column and humidity cell setup is provided in Figure 4-5.

The trickle leach column and humidity cell leachates were analyzed for:

- pH and conductivity;
- Acidity and alkalinity;
- Dissolved anions (sulphate, chloride, fluoride, nitrate, nitrite, ammonia); and
- Dissolved major and trace elements.

The leachate from kinetic experiments that contained tailings material was also analyzed for cyanide.

Analyses of trickle leach column and humidity samples occurred weekly through leaching cycles 0 to 25 then switched to biweekly analyses. Laboratory kinetic tests were on-going at the time of this report submission.

Figure 4-5: Trickle Leach Columns (left) and Humidity Cells (right) Setup

4.3.2 FIELD-BASED KINETIC TESTING

In November 2015, twelve field barrels (200 L in volume) were established with drill core from the ABM open pit area. The field barrels improve the understanding of drainage chemistry and weathering over time, due to the larger grain size of the material and the exposure to Yukon's cold climate. Thus, field barrel tests tend to span multiple years and can only be sampled during open water months.

Each field barrel was filled with 232 to 318 kg of core sample material broadly from a single geodomain. The mass and predominant geodomain in each field barrel is presented in Table 4-5 and the field barrel setup is displayed in Figure 4-6. Precipitation that falls on the barrel percolates through the waste rock and leachate is collected at the base in 20 L pails. Samples are collected for analysis on an approximate monthly basis between spring and fall. At the time of sampling, the volume of the collected precipitation is recorded and in situ parameters (pH, conductivity, temperature) are measured. Samples are submitted for laboratory analysis of acidity, alkalinity, dissolved anions (sulphate, nitrate, nitrite, fluoride, chloride) and total and dissolved trace and major elements.

Table 4-5: Summary of Field Barrel Material Geodomains.

Bin #	1	2	3	4	5	6
Geodomain	PY AK RHYv	PY AK RHYv	CARB MDS RHY	CA CL MAF	AK RHYc	PY AK RHYc
Weight (kg)	240.6	260.9	276.0	261.4	241.3	250.5
Bin #	7	8	9	10	11	12
Geodomain	MU PY RHY	PY AK RHYc	AK RHYv	PY CL RHY	AK RHYv	PY AK RHYv
Weight (kg)	232.4	252.2	265.1	236.1	347.8	258.6

Figure 4-6: Field Barrel Setup

4.4 DATA ANALYSIS

Data were compiled for statistical analyses and geochemical characterization. The full datasets for the static and kinetic testing are presented in Appendices C to J. Static data that were reported below the detection limit were assigned values one half of that detection limit. Conversely, kinetic data reported below the detection limit were assigned the value of the detection limit to remain conservative from the standpoint of source term development. Statistical analyses and other data manipulations were carried in MS Excel® using the XLStat® software. Normality testing indicated that the static data (both as a whole, and when broken down by geodomain) were not normally distributed. As such, the median has been preferred for use as a central tendency comparator here since it is not influenced by extreme maxima/minima as the mean.

4.4.1 QUALITY ASSURANCE/QUALITY CONTROL

The laboratory testing included the analysis of replicates, blanks, certified reference materials (CRMs), spiked blanks, and spiked samples, depending on the nature of the analysis. The QA/QC results can be found in the laboratory certificates of analysis in Appendix K.

The precision of replicate analyses was assessed by the relative percent difference (RPD) between the two sets of analyses, defined as:

$$\%RPD = 100 \times ABS(A-B) / MEAN(A,B)$$

Where:

A is the first analysis of the sample;

B is the second analysis of the sample;

ABS (A-B) is the absolute value of the difference between the two analyses; and

MEAN (A,B) is the arithmetic mean of the analysis A and analysis B.

The accuracy of the CRM, blank spikes and matrix spikes analyses was assessed by percent recovery, defined as:

$$\%\ recovery = 100 \times A/B$$

Where: A is the measured value; and

B is the certified value (CRM) or known spiked concentration (blank and matrix spikes).

For the ABA analyses, one duplicate was analyzed for every 10 samples. One CRM and one blank ware included for every batch of 30 samples. An RPD of 15% is considered acceptable by Global ARD for the ABA parameters where the value is present at >10x the RDL. All of the ABA duplicates that returned values >10x the RDL had acceptable RPDs (i.e., ≤15%). A CRM recovery of 85 to 115% was deemed acceptable where the analyte was present at 10x the reporting detection limit (RDL). The ABA CRMs employed included CDN-CM-30, OREAS 504, GS310-7 (all used for total sulphur), RTS-3a, RTS-1 (sulphate sulphur), SY-4 (TIC) and KZK-1 (paste pH, NP), a CRM sourced from the Kudz Ze Kayah property issued by CANMET. Analysis of ABA CRMs indicated excellent agreement with the certified values (recoveries of 91 to 108%). All of the ABA blanks returned values that were below the detection limit indicating that there were no significant sources of laboratory-based contamination.

For the aqua regia ICP-MS analyses, one CRM, one duplicate digestion, and one method blank were included for every batch of 30 samples. An RPD tolerance of 20% is employed for the aqua regia ICP-MS duplicates where the value is >20x the RDL. Only two arsenic analyses that were present at >20x the RDL had RPDs that were >20% (21% and 31% RPD). All other duplicate analyses returned RPDs ≤20% where the value was >20x the RDL. Aqua regia ICP-MS analysis of the OREAS 24b CRM returned a recovery within the 85 to 115% window for those analytes that were present at >10x the RDL. All of the aqua regia ICP-MS method blanks returned values that were below the detection limit indicating that there were no significant sources of laboratory-based contamination.

For the SFE work, one replicate (analysis of the same shake flask extract aliquot) or duplicate (analysis of second shake flask extract produced by processing a second split of the original pulped sample) was included for approximately every ten samples analyzed. An RPD tolerance of 20% is employed for the replicate analysis and 35% for the duplicate analysis where the value is >10x the RDL. All of the replicate SFE analyses that were >10x their respective detection limits returned a satisfactory RPD of <20%. The majority of duplicate analyses also satisfied the ≤35% RPD criterion, although the potassium, strontium, antimony, iron, and selenium concentrations in one duplicate sample (B00264298) returned >35% RPD (37% to 74% RPD). Similarly, potassium, sodium, and sulphur concentrations in another duplicate shake flask extract (B00264451) had RPD >35% (47 to 52%). Trace element analysis was only performed on one other waste rock shake flask duplicate, which returned satisfactory RPDs. Two tailings samples were also run in duplicate for SFE and these showed good RPD agreement, however, the tailings samples were much finer grained than the pulped rock samples. As such, the variation observed in the waste rock SFE duplicates likely reflects microscale heterogeneity in the samples. A similar observation was made for an inter-laboratory comparison for the KZK work (AEG, 2016a). In this work, approximately 10% of the static ABA, aqua regia ICP-MS, and SFE testing was repeated by an independent third party laboratory (SGS) on the same pulped subsample used by Global ARD. Acceptable agreement was typically observed between the ABA and ICP aqua regia measurements, although the SGS total inorganic carbon measurements were biased high compared to the Global ARD data, which was ascribed to the different method employed by SGS. Major and trace element concentrations observed in the SFE leachate generally exhibited poor agreement and was ascribed to microscale sample heterogeneity in the pulped samples.

A method blank was included with each batch of SFE testing. Laboratory blanks, spiked blanks, and spiked samples were also run by the analytical laboratory with each batch of samples to evaluate laboratory-based contamination and analytical accuracy. The SFE method blanks typically returned below detection values for the majority of parameters. The concentration of some parameters was sporadically detected, but only at levels that were marginally above their detection limit (typically <5x the detection limit). The laboratory blanks returned below detection data for all parameters and the blank and matrix spikes were all within 85 to 115% of the known spiked concentration.

For the kinetic laboratory testing, blank analyses were performed for every batch of samples submitted for analysis and were typically below detection. One replicate analysis was performed for every ten samples, which returned RPD<20% for all analytes that were present at greater than 10 times their respective detection limit. The ion balance for all kinetic leachate samples was ≤±10%, with the majority better then ±5%, suggesting that no major errors related to inaccurate major element concentrations were present, and all major ionic species were measured.

Overall, the QA/QC results indicate that the data produced by Global ARD are acceptable for use.

5 RESULTS AND DISCUSSION

5.1 STATIC DATA

The full set of ABA, XRD, aqua regia ICP-MS, and SFE data for the waste rock, mineralized rock, tailings, and overburden samples can be found in Appendix C, D, E, and F respectively. Each sample was assigned a geodomain by BMC geologists during core logging and sampling, and the static data are largely interpreted in the context of these geodomain assignments.

5.1.1 WASTE ROCK

5.1.1.1 *X-Ray Diffraction (XRD)*

The purpose of XRD is to quantitatively determine the crystalline mineralogy of samples and, in particular, identify the minerals that may influence the metal leaching and acid rock drainage (ARD/ML) properties of the rock material. Carbonate minerals (primarily calcite and dolomite) are typically the principal contributors to neutralization potential (NP) whereas sulphide minerals (primarily ferrous sulphide minerals) are usually the major sources of acid potential (AP).

A summary of the carbonate, sulphide, and major silicate mineral content of the samples analyzed by Rietveld XRD is shown in Table 5-1. Complete XRD results are presented in Appendix C. The predominant minerals in the samples were quartz (SiO_2; 19.7 to 74.4 wt.%) and muscovite ($KAl_2(AlSi_3O_{10})(OH)_2$; 12.5 to 59.5 wt.%).

Calcite ($CaCO_3$) is the most reactive carbonate mineral in terms of acid neutralization and was identified in 15 samples (0.2 to 41.4 wt.%; one of those as magnesian calcite). The highest calcite content was found in CA CL MAF (41.4 and 19 wt.%) and MDS samples (6.0 to 15.9 wt.%). Dolomite ($CaMg(CO_3)_2$) contributes to neutralization potential but is less reactive than calcite. Dolomite was present in 13 samples (0.4 to 21.3 wt.%) and occurred in eight samples that did not contain calcite. Only two samples (CARB MDS/RHY and PY CL RHY) did not contain either dolomite or calcite.

Ankerite ($Ca(Fe,Mg,Mn)(CO_3)_2$) was identified in only five samples; however, it is important to note that distinguishing between dolomite and ankerite using quantitative XRD alone is problematic (Day, 2009) and the certainty of the distribution between dolomite and ankerite by XRD is unclear. As ankerite is a major constituent of the rocks within the ABM open pit area with four of the ten geodomains visually classified as ankeritic, it is possible that ankerite content could have been mis-assigned as dolomite in the XRD analysis. Ankerite with higher magnesium (Mg) content relative to iron (Fe) may contribute to acid neutralization but is generally less reactive than dolomite. The highest ankerite concentration (16.9 wt.% and 3 wt.%) was reported in two AK RHYv samples with no dolomite content. Traces of ankerite (0.8 wt.% to 1.8 wt.%) were found in two MDS samples and one CARB MDS/RHY sample, all of which had higher concentrations of dolomite or calcite.

Table 5-1: Abundance of Major Phases, Carbonate, and Sulphide Minerals Measured by Rietveld XRD

		Mineralogy (wt.%)													
		Major minerals				Carbonates				Sulphides					
Geodomain	Sample ID	Quartz	Muscovite 2M1	Clinochlore	Plagioclase	Calcite	Dolomite	Ankerite	Siderite	Pyrite	Pyrrhotite	Marcasite	Sphalerite	Galena	Arsenopyrite
AK RHYv	B00264316	43.4%	50.8%	-	-	2.0%	-	3.0%	0.3%	0.1%	-	-	-	-	-
	B00264317	31.2%	40.6%	-	-	4.1%	-	16.9%	3.1%	0.2%	-	-	-	-	-
	B00264451	45.4%	38.8%	-	7.7%	2.9%	-	-	-	0.8%	0.9%	-	-	-	-
CA CL MAF	B00264325	24.0%	12.5%	13.3%	-	41.4%	2.5%	1.3%	1.1%	-	-	-	-	-	-
	B00264437	28.6%	22.3%	28.2%	-	19.0%	-	-	-	-	-	-	-	-	-
CARB MDS/RHY	B00264248	64.4%	26.7%	-	-	-	-	-	-	8.9%	-	-	-	-	-
	B00264298	74.4%	20.9%	-	-	-	1.6%	-	-	0.6%	1.2%	0.5%	0.5%	0.3%	-
	B00264356	48.4%	42.0%	-	-	-	6.5%	-	-	2.9%	-	-	0.2%	-	-
MU PY RHY	B00264258	47.1%	44.6%	-	-	7.0%	-	-	0.6%	-	-	-	-	-	-
	B00264346	36.1%	49.8%	-	-	3.0%	5.2%	-	-	3.2%	-	-	0.4%	0.4%	-
	B00264405	23.9%	59.5%	-	-	-	15.1%	-	-	0.2%	-	-	-	-	0.6%
PY AK RHYc	B00264213	48.0%	33.3%	-	-	14.6%	-	-	0.2%	1.3%	-	-	-	-	-
	B00264308	37.4%	36.7%	-	3.8%	-	19.5%	-	0.3%	0.1%	0.6%	-	-	-	-
	B00264319	44.0%	37.6%	-	-	-	12.3%	-	0.2%	3.2%	1.2%	-	-	-	-
PY AK RHYv	B00264327	44.6%	38.3%	-	-	1.2%	13.0%	-	0.2%	0.5%	1.0%	-	-	-	-
	B00264329	31.7%	56.0%	-	-	-	6.6%	-	0.4%	2.6%	2.1%	-	-	-	-
	B00264402	44.2%	46.8%	-	-	-	5.4%	-	-	0.4%	2.7%	-	-	-	-
	B00264430	19.7%	49.3%	-	-	2.6%	21.3%	-	0.6%	1.1%	3.0%	-	-	-	-
PY CL RHY	B00264277	55.0%	43.6%	-	-	-	-	-	-	-	1.1%	-	0.1%	-	-
	B00264417	59.0%	36.8%	0.8%	-	0.2%	0.4%	-	-	-	2.5%	-	0.3%	-	-
MDS	Q930106	31.1%	34.3%	1.7%	-	15.9%	12.7%	1.8%	-	-		-	-	-	-
	Q930148	30.2%	39.5%	4.5%	12.5%	6.0%	-	-	-	0.4%	1.1%	-	-	-	-
	Q930152	33.9%	27.9%	9.1%	14.3%	12.6%	-	-	-	0.3%	0.6%	-	-	-	-
	Q930159	32.9%	41.7%	10.0%	-	12.6%	-	0.8%	-	0.4%	-	-	-	-	-

Clinochlore ($(Mg_5Al)(AlSi_3)O_{10}(OH)_8$), the magnesium endmember of chlorite, was identified in seven samples and was greatest in the two CA CL MAF samples (28.2 and 13.3 wt.%). Although clinochlore can contribute to acid neutralization (e.g. Jambor et al., 2006), it is slower reacting than carbonate minerals. Indeed, where clinochlore was identified, carbonate-bearing minerals comprised the bulk of any neutralization potential in the sample.

Pyrite (FeS_2) was the most common sulphide mineral identified by XRD and was present in 18 of 24 samples (0.1 to 8.9 wt.%) and was typically highest in those geodomains identified as pyrite-bearing (e.g., PY AK RHYc, PY AK RHYv, MU PY RHY and CARB MDS/RHY). The second most common sulphide mineral identified by XRD was pyrrhotite ($Fe_{(0.8-1)}S$). Pyrrhotite was reported in 12 samples (0.6 to 3.0 wt.%) and all but four of the 24 samples contained either pyrrhotite and/or pyrite.

Other metal sulphide minerals identified by XRD included arsenopyrite (FeAsS) (one sample, 0.6 wt.% in MU PY RHY), marcasite (FeS_2) (one sample, 0.5 wt.%), sphalerite ((Zn,Fe)S) (five samples; 0.1 to 0.5 wt.%) and galena (PbS) (two samples; 0.3 to 0.4 wt.%), although the latter two minerals do not contribute acidity when oxidized by oxygen.

5.1.1.2 ***Acid Base Accounting***

The purpose of ABA is to quantify the content and ratio of potentially acid producing and potentially acid consuming minerals in each sample. This is an indication of the acid generation potential of geologic materials. ABA testing was conducted on 567 waste rock samples collected from drill cores located in the ABM open pit area. These comprised 243 samples from the Cominco datasets from the mid-1990's (NDM, 1996) and a further 324 samples collected from core drilled during BMC's 2015 exploration campaign. Since similar ABA procedures were used for both sets of samples, these data were merged into one dataset and considered here. The full dataset is presented in Appendix C.

The paste pH of all samples ranged from 5.8 to 10.0 with a median of pH 9.3. This indicates that all of the samples were net neutralizing (defined as a paste pH>5.5) at the time of analysis, which is consistent with the low sulphate-sulphur content of the samples. The paste pH of the 59 Cominco core samples that were analyzed as part of the 2015/16 test work was circumneutral to alkaline, ranging from 7.3 to 9.6, with a median paste pH of 8.9. This is consistent with the larger paste pH sample database and indicates that the samples were net neutralizing. Given that the Cominco core has been stored on the surface and subject to weathering for two decades (although with limited exposure to meteoric water), the lack of acidic paste pH suggests that negligible acidic metal sulphate salts, produced during oxidation of metal sulphide minerals, have accumulated during core storage.

Comparison of paste pH with NP and AP showed no clear correlation, although lower paste pH values were generally associated with samples that had either low NP or high AP; the majority of samples with a paste pH <8 all had a NP/AP <1 (Figure 5-1).

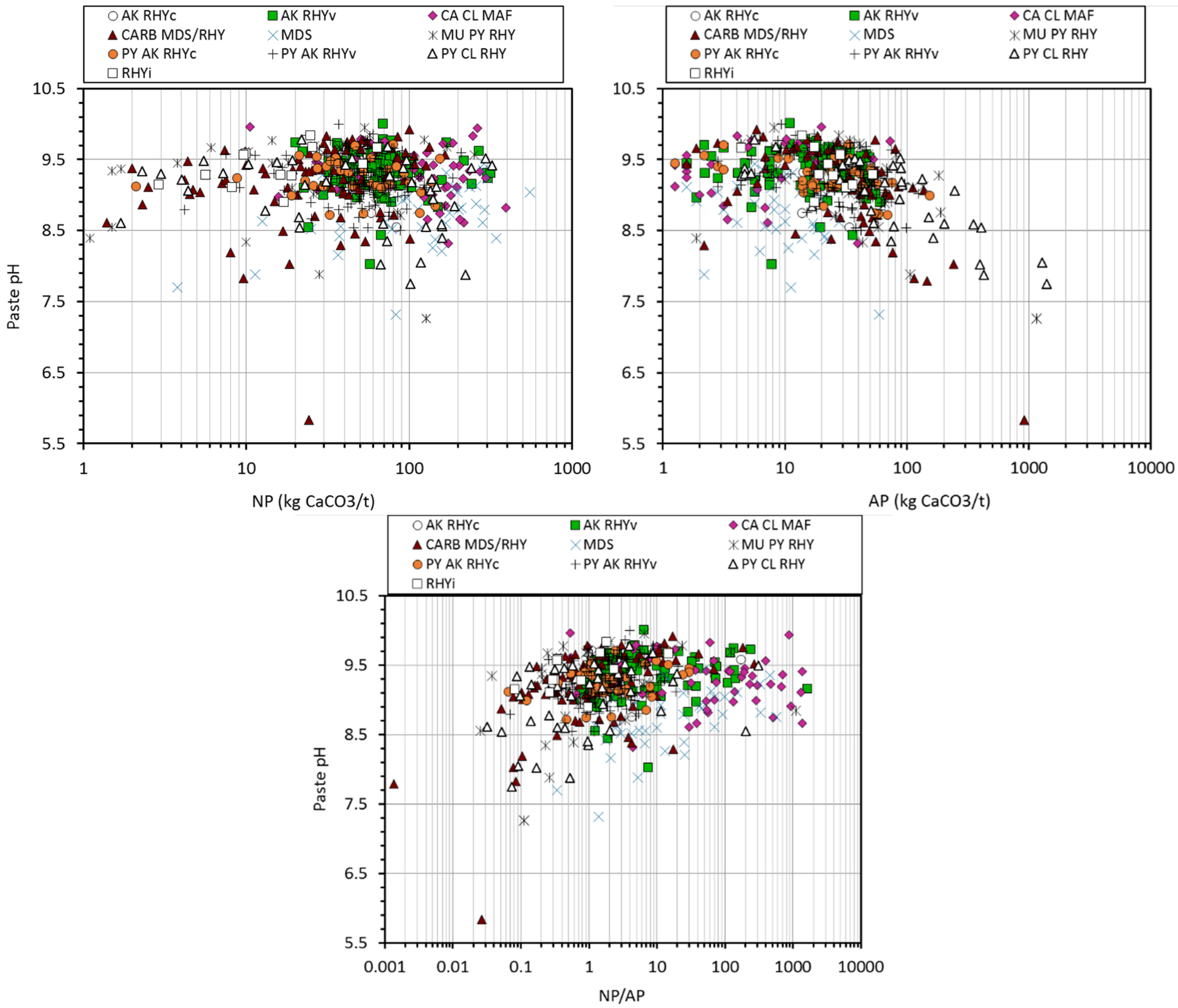
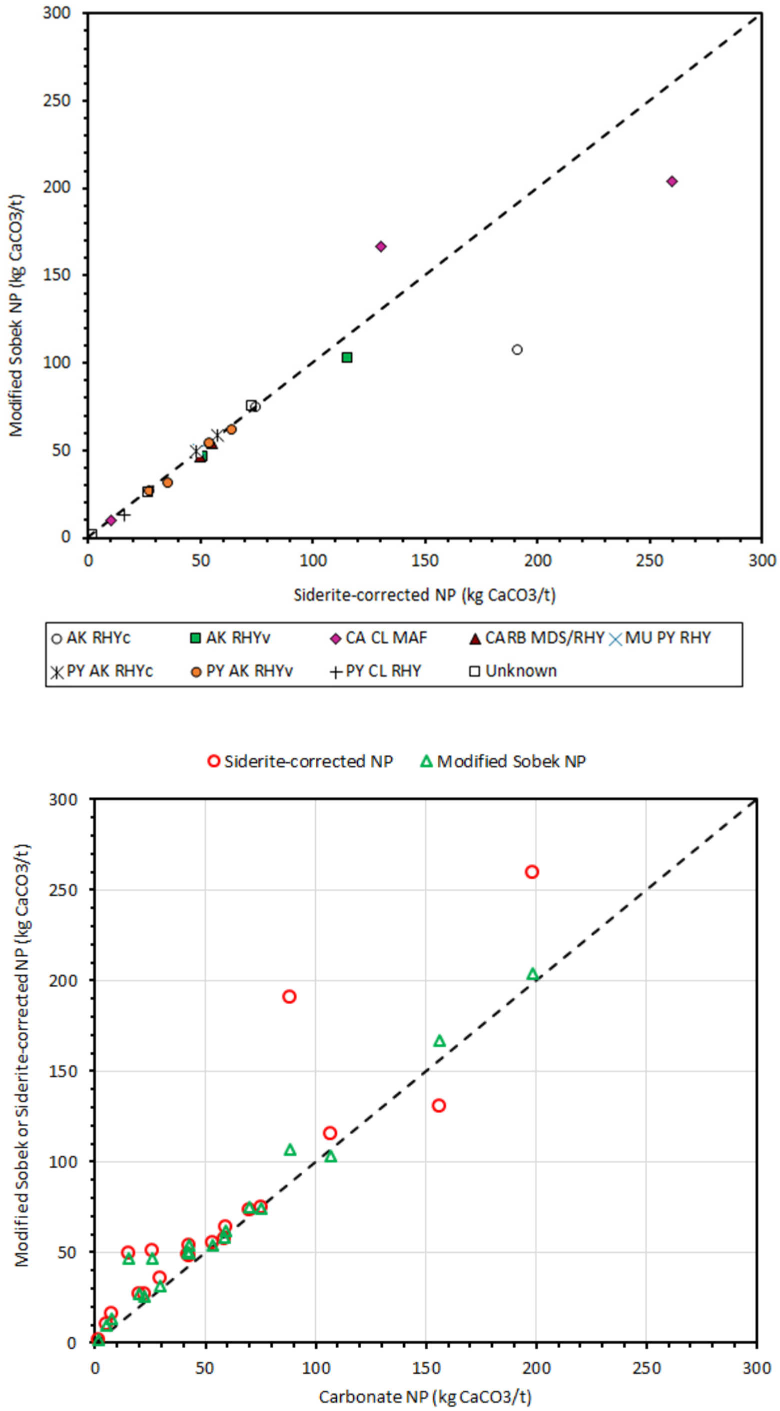


Figure 5-1: Comparison of Paste pH with NP (top left), AP (top right) and NP/AP (bottom)

The acid neutralizing potential (NP) describes the total amount of acid that a material can neutralize and is an important factor in the prediction and mitigation of acidic drainage from waste rock material. Carbonate minerals such as calcite ($CaCO_3$) typically provide the bulk of NP in a sample; however, not all carbonate phases are net neutralizing under the oxidizing conditions encountered at the surface. Ankerite ($Ca(Fe,Mg,Mn)(CO_3)_2$) is a ferrous carbonate phase that is commonly encountered in the ABM open pit host rocks. Ferrous carbonate phases do not contribute any net neutralizing potential under the well oxygenated weathering conditions present in most waste rock piles since the acid neutralized by the carbonate portion of the mineral is counterbalanced by the acid produced from the oxidation of ferrous iron. As such, it is important the method used to determine the NP is able to effectively account for the presence of ferrous carbonate.

Both the modified Sobek NP (Coastech, 1991) and siderite-corrected NP (Skousen et al., 1997) procedures are capable of correcting for the presence of ferrous carbonates by promoting the oxidation of the liberated ferrous iron during the procedure. The Skousen method directly oxidizes the ferrous iron by the addition of hydrogen peroxide, whereas the modified Sobek method relies on the higher titration endpoint pH (8.3) to facilitate Fe(II) oxidation. The modified Sobek method was used in the past Cominco work (NDM, 1996). To maintain consistency, this method was also used for the 2015/16 static testing; however, it was prudent to confirm that the modified Sobek NP method is capable of correcting for the presence of ferrous carbonate by comparing it to the Skousen siderite-corrected NP procedure.

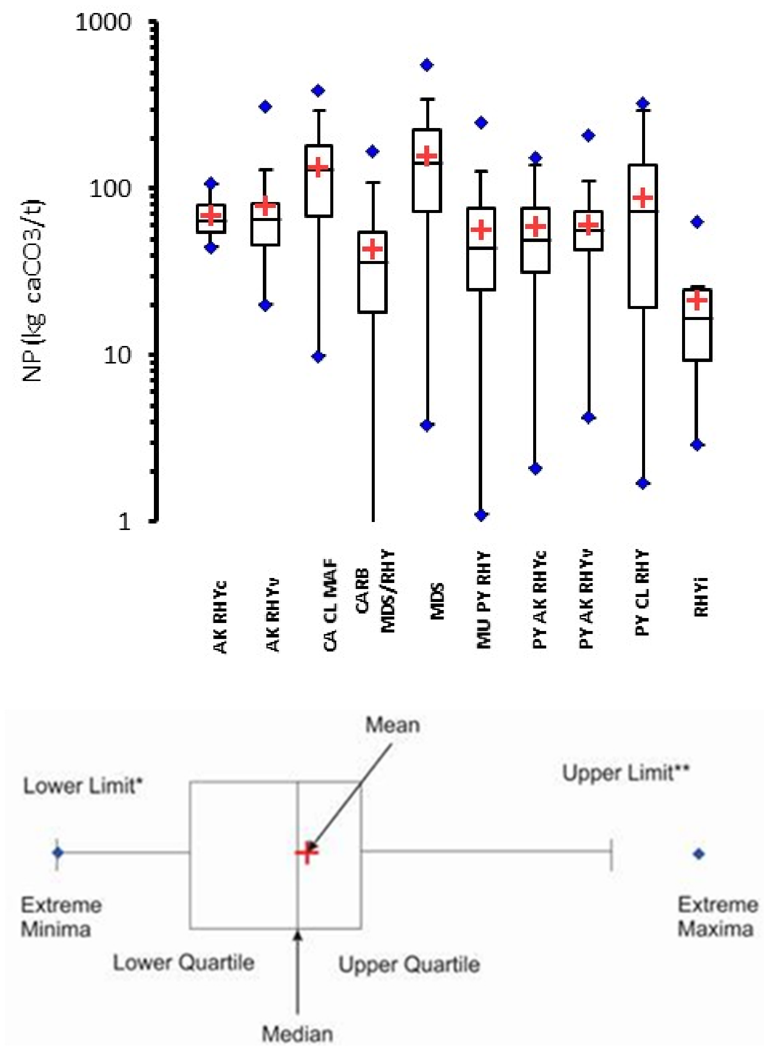
The modified Sobek NP (Coastech, 1991) and siderite-corrected NP (Skousen et al., 1997) procedures were performed on a subset of 20 samples and are compared in Figure 5-2. Both methods returned NP data that were in good agreement; however, the three highest NP samples exhibited a marked deviation from the 1:1 line. The disparity observed for these three samples likely relates to incorrect acid addition for the siderite-corrected NP test, resulting in an erroneous NP measurement. The siderite-corrected NP method relies on a fizz test to determine how much acid to add, with no further checks on whether the acid addition was appropriate, whereas the modified Sobek NP method has pH checks throughout its procedure to ensure that adequate acid has been added. The modified Sobek NP returned more reliable data is evidenced by comparing the modified Sobek NP and siderite-corrected NP with the carbonate equivalent NP calculated from the total inorganic carbon content of the samples (Figure 5-2). The modified Sobek NP agreed well with the carbonate equivalent NP for all samples, as would be expected since carbonate minerals (primarily calcite) constitute the majority of NP in most rocks. The siderite-corrected NP data also agreed well with the carbonate equivalent NP with the exception of the same three samples that showed a disparity with the modified Sobek NP. Given this comparison, the continued use of the modified Sobek NP is justified.



Dashed line indicates unity.

Figure 5-2: Comparison of NP determined by Modified Sobek and Siderite-corrected methods with each other (top) and against the Carbonate Equivalent NP (bottom)

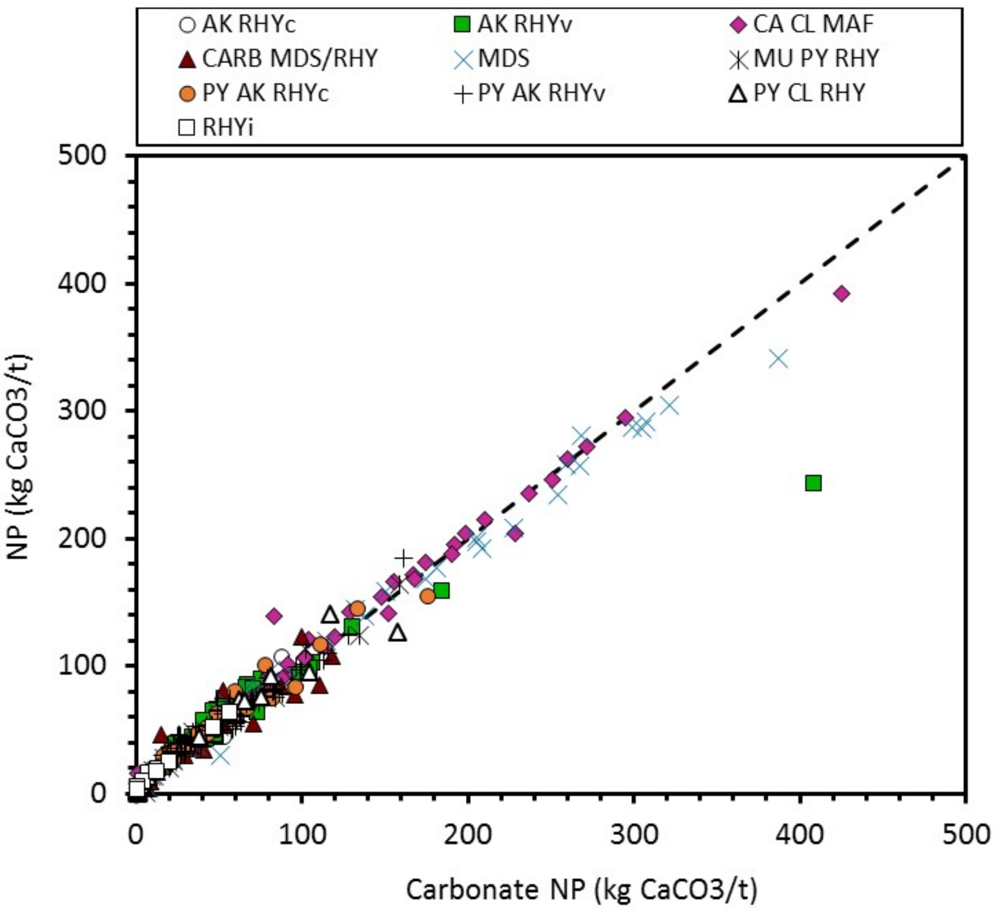
Box plots showing distribution of NP by geodomain are shown in Figure 5-3. The dataset NP ranged from 0.2 kg $CaCO_3$/t to 549 kg $CaCO_3$/t with a median of 58 kg $CaCO_3$/t. The highest NP was observed in samples from the MDS and CA CL MAF geodomains, which had a median NP of 142 and 129 kg $CaCO_3$/tonne, respectively. This is consistent with the high calcite content of samples from the MDS and CA CL MAF geodomains identified by XRD. Samples from the RHYi, and to a lesser extent, CARB MDS/RHY, had the lowest NP, with a median NP of 16.6 kg $CaCO_3$/t and 36 kg $CaCO_3$/t, respectively.



The whiskers represent the "lower limit" (LL) and "upper limit" (UL) which are calculated as LL = Q1 – 1.5 (Q3 – Q1) and UL = Q3 + 1.5(Q3 - Q1).

Figure 5-3: NP Distribution by Geodomain (top) and Box Plot Legend (bottom)

The modified Sobek NP closely matched the carbonate NP (determined from the total inorganic carbon content) confirming that carbonate minerals are the primary source of NP in these samples (Figure 5-4). Minor contributions from slower reacting aluminosilicate phases account for samples which had a higher NP than carbonate NP. A number of samples had a significantly lower NP than carbonate NP, suggestive of the presence of carbonate minerals that do not contribute to NP (e.g. ferrous iron-bearing phases such as siderite and ankerite). Prominent examples of such samples were from the AK RHYv geodomain (Figure 5-4) which is expected to contain ferrous carbonate mineralogy.



Dashed line denotes unity.

Figure 5-4: Comparison of Modified Sobek NP with Carbonate NP

Knowledge of the chemical form, or speciation, of sulphur in a sample is key to predicting the acid generation potential (AP) and may also provide some insights regarding the capacity for short-term metal leaching. For example, the oxidation of sulphide, largely present in the ABM open pit host rocks as the iron sulphide minerals pyrite and pyrrhotite (Table 5-1), is an acid-producing reaction. As such, the measurement of the sulphide-sulphur content of a sample is important in order to calculate its AP.

Sulphide-sulphur has been calculated here as the difference between the total sulphur concentration and the sulphate-sulphur concentration. Measurement of the sulphate-sulphur also has implications for metals that are readily soluble from waste rock since many metal sulphate minerals that accumulate during the oxidation of metal sulphides are highly soluble and are therefore susceptible to mobilization during flushing events.

Total sulphur in the analyzed samples ranged from below detection level (0.01 wt.%) to 45 wt.% with a median concentration of 0.8 wt.%. The maximum sulphate-sulphur content in any of the ABM host rock samples was 0.32 wt.% and the majority of sulphate samples were below detection level (0.01 wt.%). A comparison of the total sulphur and sulphide-sulphur concentrations (Figure 5-5) indicates that almost all of the sulphur content in the samples was present as sulphide; likely in the form of sulphide minerals pyrite and pyrrhotite. The 2015 analysis of 59 samples of weathered Cominco core also revealed a paucity of sulphate-sulphur. Only one third of the 59 samples analyzed returned a sulphate-sulphur concentration above the detection limit (i.e., greater than 0.01 wt.%). The sulphate sulphur concentration of this weather sample subset range from <0.01 wt.% to 0.22 wt.%, with a median of <0.01 wt.%. Consistent with the net neutralizing conditions indicated by the circumneutral to alkaline paste pH of these samples, this suggests that oxidation of metal sulphides that were exposed on the core surface proceeded very slowly over the twenty years that the cores were exposed to the atmosphere (although protected from the elements and meteoric water).

Geodomains that are characterized by a pyritic component (i.e., PY CL RHY, PY AK RHYv, PY AK RHYc, and MU PY RHY) typically had higher levels of sulphide sulphur (Figure 5-6). Of the ten geodomains analyzed, the highest median sulphide sulphur content was observed in the PY CL RHY (1.7 wt.%) geodomain (Figure 5-6), which is located proximal to the massive sulphide lens in the ABM deposit (Table 2-1). Lower sulphide sulphur levels were observed in the AK RHYc and AK RHYv geodomains, reflecting lack of pyrite in their geodomain description. The lowest sulphide sulphur concentrations were found in the CA CL MAF footwall unit samples, followed by samples from the MDS geodomain. Both these geodomains also had the highest NP (Figure 5-3).

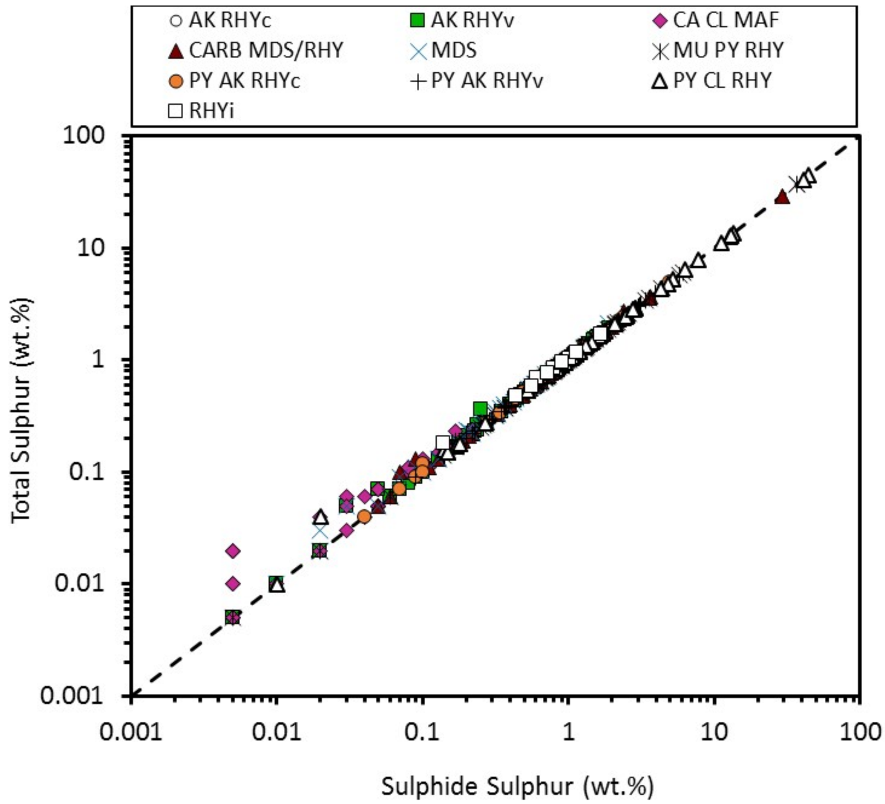


Figure 5-5: Comparison of Total Sulphur Concentration with Sulphide-Sulphur Content (Note: Dashed Line Represents Unity)

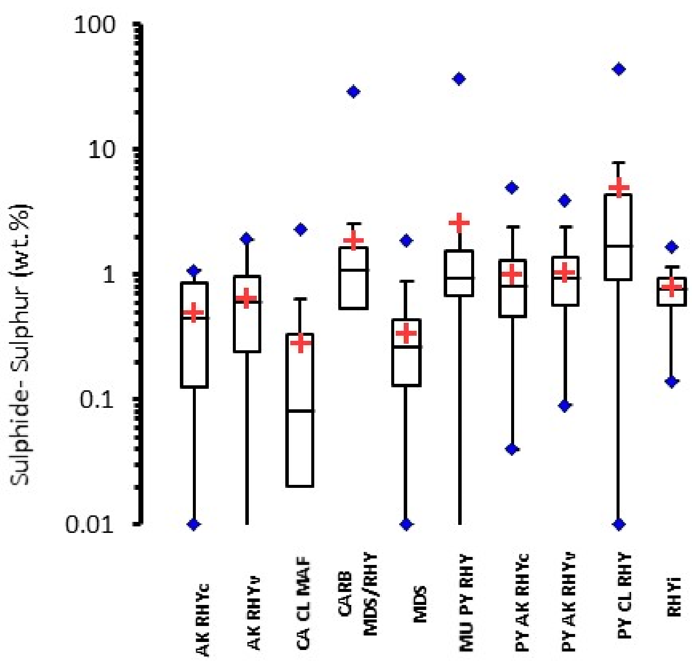
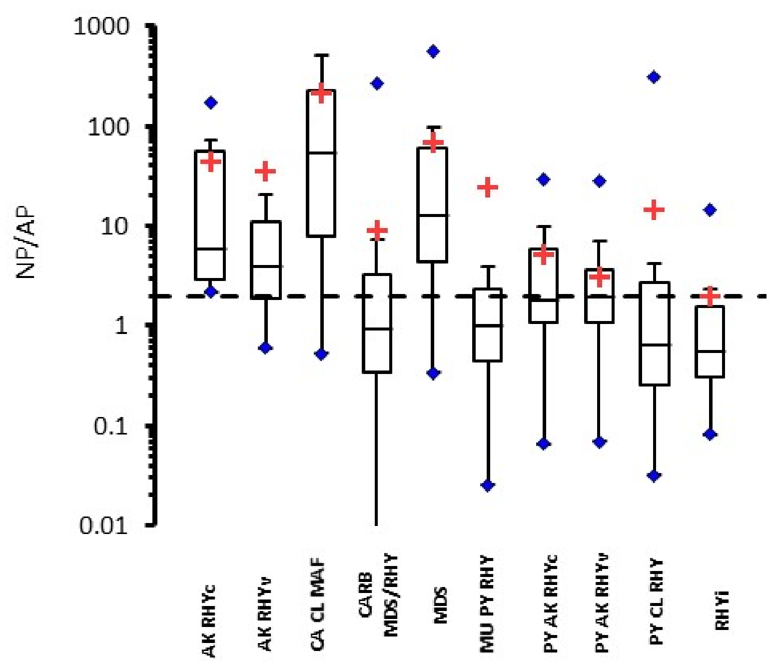


Figure 5-6: Box Plot of Sulphide Sulphur Content by Geodomain

The neutralization potential ratio is defined as the ratio between the neutralization potential (NP) and acid potential (AP) and is calculated as NP/AP (unitless). Price (2009) states that the NP/AP can be used as an initial filter to predict the potential for exposed geological material to generate acidity such that:

- NP/AP<1 samples are potentially acid generating (PAG);
- 1<NP/AP<2 samples are capable of acid generation but with some uncertainty; and,
- NP/AP>2 samples are not potentially acid generating (non-PAG).

Box plots of the NP/AP distribution by geodomain are shown in Figure 5-7. The distribution of samples in terms of the three NP/AP ranges indicated above are displayed in Table 5-2. Four of the ten geodomains analyzed had a sizeable majority of samples that returned NP/AP greater than 2 (100% of AK RHYc, 89% CA CL MAF and MDS, and 70% AK RHYv), suggesting they are largely not acid generating. Conversely, 50% or more of samples had a NP/AP less than one from the RHYi (67%), PY CL RHY (56%), CARB MDS/RHY (53%), and MU PY RHY (50%) geodomains, indicating they largely comprise potential acid generating material. The PY AK RHYv and PY AK RHYc geodomains showed a similar sample distribution between the three NP/AP categories, with approximately 50% of samples classified as non-PAG, ~30% of uncertain acid generation potential, and ~20% classed as PAG (Table 5-2).



The dashed line indicates at NP/AP = 2, above which acid generation is not likely.

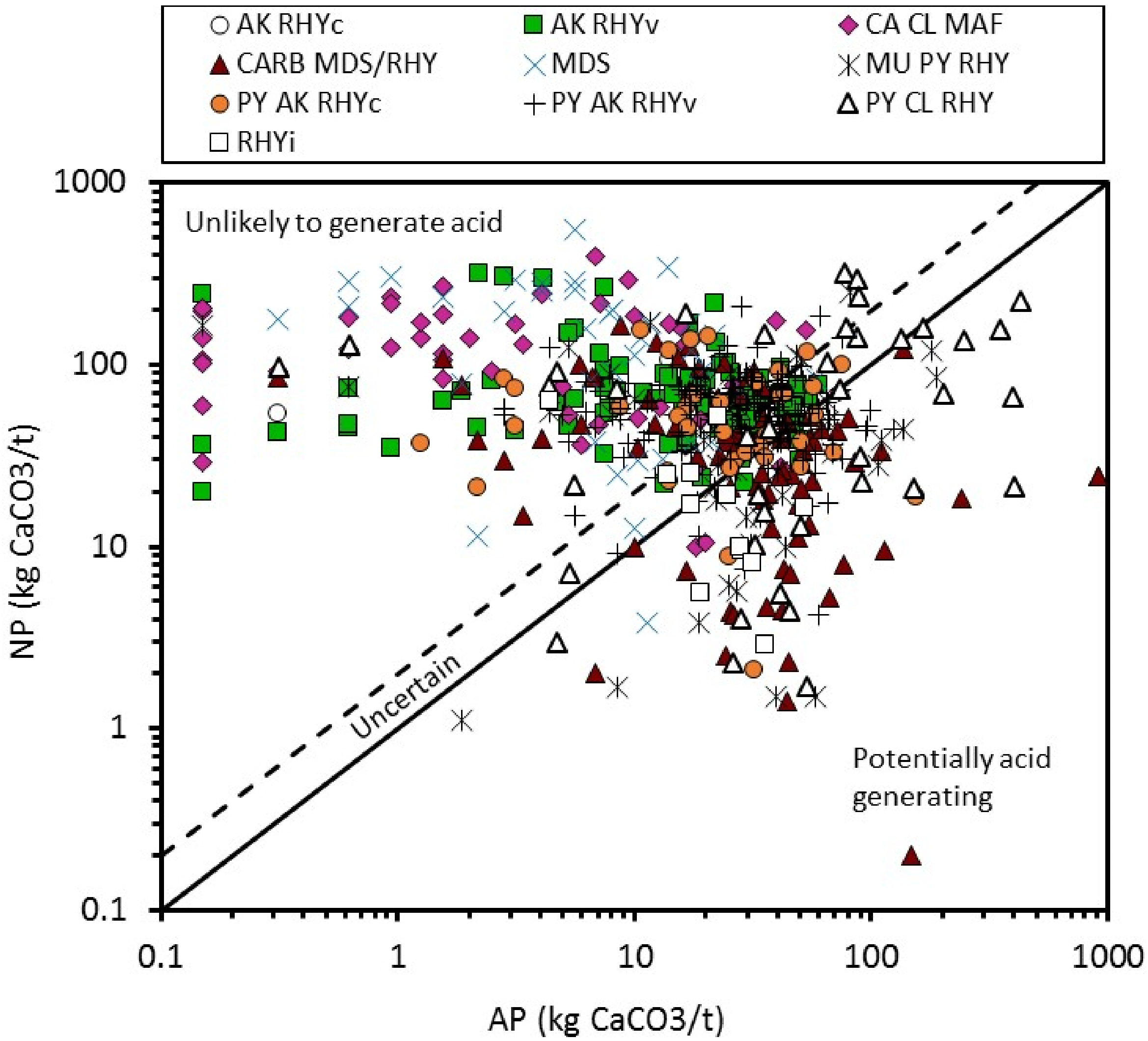
Figure 5-7: Box plot of NP/AP by Geodomain

Out of the 567 analyzed samples, 54% had an NP/AP greater than 2 indicating a very low potential for acid generation. Samples that had potential to generate acidity (NP/AP<1) made up 27% of the total analyzed samples and 19% were sandwiched in the uncertain acid generation category (1<NP/AP<2). In terms of geodomain, RHYi, PY CL RHY, CARB MDS/RHY, and MU PY RHY had the largest proportion of NP/AP<1 samples, comprising 67%, 56%, 53%, and 50% of the samples analyzed, respectively. There were 19% of samples that have NP/AP between 1 and 2 and could dictate further testing (e.g. kinetic testing) to better predict acid generation of the geodomain.

Table 5-2: Distribution of NP/AP Values by Geodomain

	NP/AP<1	1<NP/AP<2	NP/AP>2	Count	NP/AP<1	1<NP/AP<2	NP/AP>2
Geodomain	**PAG**	**Uncertain**	**Non-PAG**		**PAG**	**Uncertain**	**Non-PAG**
AK RHYc	0	0	6	6	-	-	100%
AK RHYv	4	24	66	94	4%	26%	70%
CA CL MAF	4	1	48	53	9%	2%	89%
CARB MDS/RHY	46	12	28	86	53%	14%	33%
MDS	1	3	34	38	3%	8%	89%
MU PY RHY	28	8	20	56	50%	14%	36%
PY AK RHYc	8	12	18	38	21%	32%	47%
PY AK RHYv	31	41	71	143	22%	29%	50%
PY CL RHY	23	6	12	41	56%	15%	29%
RHYi	8	2	2	12	67%	17%	17%
Total Samples	153	109	305	567	27%	19%	54%

A plot of NP versus AP is presented in Figure 5-8. Below an AP of approximately 90 kg $CaCO_3$/t (equivalent to ~2.9 wt.% sulphide sulphur), a significant proportion of samples were present in all three NP/AP categories; however, above this value, the samples were typically classified as PAG. Similarly, samples with a NP of 10 kg $CaCO_3$/t or less largely classified as PAG.



The solid and dashed lines indicate at NP/AP = 1 and NP/AP = 2, respectively.

Figure 5-8: Variability in NP and AP as a Function of Geodomain

5.1.1.3 ***Composite Variability***

To investigate the variability within geodomains, and particularly to evaluate a representative scale of sampling for operational waste rock management sampling, composite samples were prepared by sampling at regular points along a geodomain interval. The results from these composites were compared with discrete samples collected in the same geodomain interval (Table 5-3).

Significant variation in ABA parameters was observed in the composite samples relative to the discrete samples on the scale of this sampling (up to 18 m). The NP/AP values for the PY CL RHY and PY AK RHYc composite samples (308 and 2.7, respectively) were higher than those from the discrete sample collected within the same interval (1.6 and 0.1, respectively). Although the PY CL RHY discrete sample had a higher NP than its composite (141 vs 96 kg $CaCO_3$/t) sample, the AP of the discrete sample was two orders of magnitude higher than its composite (87.2 vs 0.3 kg $CaCO_3$/t), resulting in the much lower NP/AP ratio for the discrete sample. Although the PY AK RHYc discrete sample also had a higher AP than its composite (31.9 vs 23.1 kg $CaCO_3$/t), the negligible NP measured in the discrete sample compared to its composite (0.1 vs 62.4 kg $CaCO_3$/t) resulted in the much lower NP/AP ratio for the discrete sample.

The discrete CA CL MAF sample had a comparable NP/AP ratio to its composite (57 vs 52.7 kg $CaCO_3$/t); however, the composite NP was almost 25 fold higher than the discrete sample (392 vs 15.8 kg $CaCO_3$/t) whereas the composite AP was 23 fold lower than the discrete sample (0.3 vs 6.9 kg $CaCO_3$/t). Examination of the core logs indicated that the discrete CA CL MAF sample was collected immediately adjacent (within 1 m) to the overlying orebody, suggesting that its slightly elevated sulphur content is due to some metal sulphide related to the mineralised area.

However, despite these differences on the scale of the discrete and composite samples, it should be noted that only the PY AK RHYc set would have resulted in different acid generation potential assignments based on their NP/AP, suggesting that the heterogeneity observed within the geodomains may not have a significant overall impact on waste rock management.

Table 5-3: Comparison of ABA Data Between Composite and Samples Within or Adjacent to Composite Subsampling Interval.

Geodomain	Hole ID	Geodomain interval (m)	Sampling Interval (m)	Composite?	TIC (wt %)	Carbonate NP (kg $CaCO_3$/tonne)	NP ($CaCO_3$/tonne)	Total Sulphur (wt. %)	AP (kg $CaCO_3$/tonne)	NP/AP
AK RHYv	K15-250	48.94 – 67.51	48.94 – 49.7		0.20	16.7	20.1	0.01	0.2	134
AK RHYv	K15-250		55.5 – 67.51	Yes	1.26	105	98.7	0.28	8.8	11.3
CA CL MAF	K15-256	22.6 – 32	22.6 – 23.1		5.10	425	392	0.24	6.9	57
CA CL MAF	K15-256		22.6 – 32	Yes	0.01	0.9	15.8	0.01	0.3	52.7
PY AK RHYv	K15-284	100.9 – 143.4	132.95 – 133.36		0.15	12.5	17.6	0.59	18.4	1.0
PY AK RHYv [a]	K15-284		132.95 – 149.9	Yes	0.30	25.0	35.9	2.20	68.8	0.5
PY CL RHY	K15-206	182.9 – 188.9	182.9 – 183.66		1.40	117	141	2.81	87.2	1.6
PY CL RHY	K15-206		182.9 – 188.9	Yes	1.25	104	96.1	0.01	0.3	308
PY AK RHYc	K15-207	8.0 – 30.0	8.2 – 8.6		0.01	0.9	0.1	1.02	31.9	0.1
PY AK RHYc	K15-207		9 – 25	Yes	0.59	49.2	62.4	0.74	23.1	2.7

[a] Following the December 2015 geodomain reclassification, the CARB MDS/RHY geodomain (143.4 – 154.2 m) overlapped this composite sample

5.1.1.4 ***Bulk Chemistry***

The tendency for an element to leach from its host rock is dependent on a number of factors including its mineral host, oxidation state and presence of complexing ligands. Although the bulk concentration of an element does not offer a direct measure of how mobile an element may be during weathering, it can provide a preliminary indication of constituents that should be monitored in subsequent leach and kinetic tests. Indeed, if correlations can be established between the leachable metal(loid) concentrations observed in kinetic testing and the bulk concentration, the bulk metal(loid) concentration may be used as a criterion in the waste rock management plan.

Bulk element concentrations were determined in 324 samples from the 2015/16 test program using aqua regia digestion and subsequent ICP-MS analysis of the digestate. The full element dataset is presented in Appendix C. Ten times the average elemental continental crustal abundance (CRC, 2005) was used as a qualitative threshold to identify elements that were present at elevated concentrations in these samples (Price, 1999). A statistical summary of elements that exhibited concentrations in excess of their 10x crustal abundance threshold for more than 5% of the dataset is provided in Table 5-4. Bismuth (66% of samples), sulphur (58%) and selenium (55%) showed the greatest number of elevated concentrations with respect to average crustal abundance across the sample dataset. More than one fifth of the arsenic (29%) and antimony (22%) concentrations were also more than 10x crustal abundance in the sample set.

Table 5-4: Summary Statistics for Selected Bulk Element Abundance in 2015/16 Waste Rock Dataset (n = 324)

	Arsenic (ppm)	Antimony (ppm)	Bismuth (ppm)	Cadmium (ppm)	Lead (ppm)	Selenium (ppm)	Silver (ppm)	Sulphur (%)	Zinc (ppm)
10x Crustal Abundance	18	2	0.085	1.5	140	0.5	0.75	0.35	700
Method Detection Limit	0.1	0.05	0.01	0.01	0.2	0.2	0.01	0.01	2
Maximum	3,099	74	18	261	8,934	252	25	4.9	40,976
3rd Quartile	24	1.8	0.55	0.48	52	1.9	0.49	0.95	112
Median	5.1	0.34	0.20	0.24	16	0.70	0.18	0.46	54.5
1st Quartile	0.90	0.090	0.060	0.12	6.1	0.20	0.070	0.18	33
Minimum	<0.1	<0.05	<0.01	<0.01	1.0	<0.2	<0.01	<0.01	<2
	Highlighted Results Exceed 10x Crustal Value								

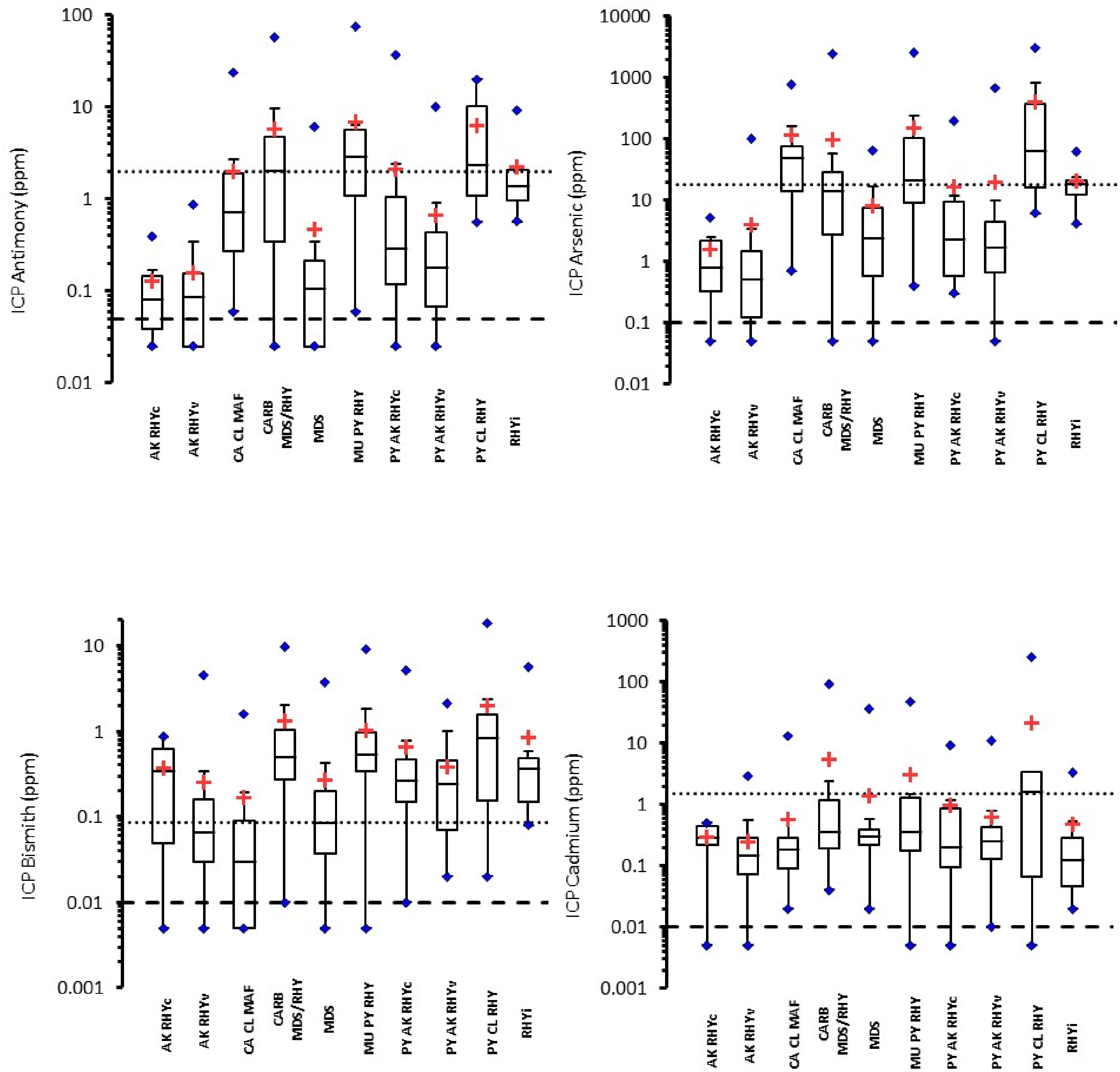
The distribution of the selected elements as a function of geodomain is presented in Figure 5-9 and Figure 5-10. The highest element concentrations are typically observed in the PY CL RHY, CARB MDS/RHY, and MU PY RHY geodomains, which are located proximal to the orebody. Indeed, the median antimony, bismuth, and selenium concentrations exceeded the 10x crustal abundance for all three geodomains, with the upper quartile exceeding the 10x crustal abundance threshold for arsenic, lead and silver. Bismuth concentrations appeared elevated relative to crustal abundance across the majority of geodomains.

The majority of these selected elements are likely present either as discrete sulphide minerals or as substitutions or minor inclusions within the primary metal sulphide phases. An exception is the relative high arsenic concentration found in the calcite-rich CA CL MAF geodomain. Although arsenopyrite (FeAsS) and substitution within pyrite may account for some of the arsenic present in the CA CL MAF samples, this geodomain typically has little sulphur (median 0.08 wt.%). Instead, arsenic may also substitute in calcite (e.g., Renard et al., 2015) or silicate minerals (e.g., Charnock et al., 2007), which comprise a significant proportion of the CA CL MAF rock samples.

5.1.1.5 ***Shake Flask Extraction***

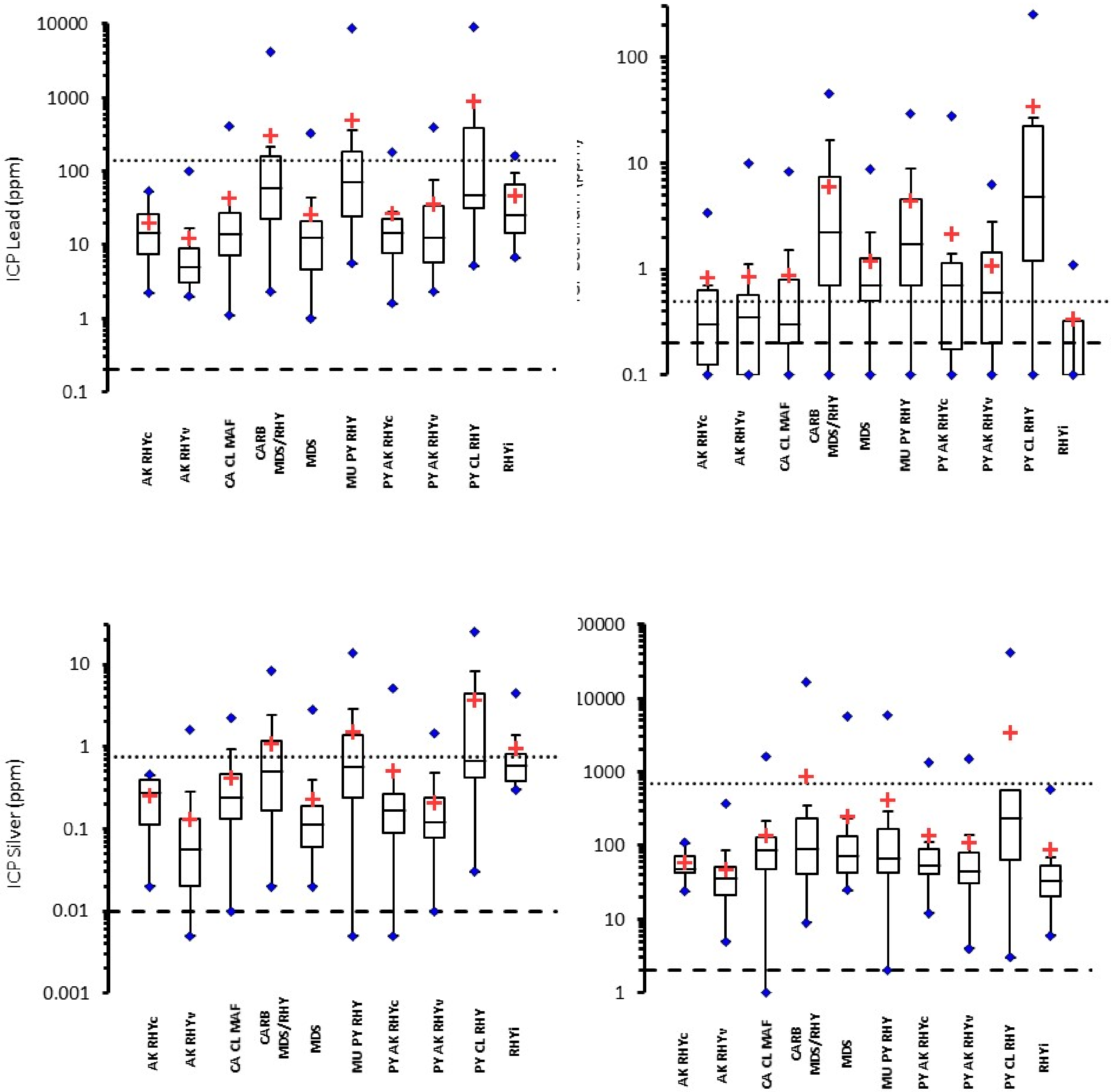
The purpose of shake flask extraction (SFE) is to quantify the soluble constituents within geologic materials at a high water to solids ratio (3:1) (Price, 2009). SFE test results provide an indication of the soluble metal load that may be released in the short term from the interaction between excavated material and water. The complete set of 55 SFE results are presented in Appendix C.

The dissolved constituents released during SFE testing of the 18 weathered Cominco core samples were comparable to the SFE data from the 2015 core samples, in line with visual observations of minimal weathering of the Cominco core and its minimal sulphate-sulphur content. As such, the SFE data from the Cominco and BMC core were combined and all 55 SFE results are presented as a whole. The discussion of the results is focussed on constituents that were found to be elevated relative to crustal abundance from bulk elemental analysis and/or had SFE test data that were elevated relative to preliminary site specific water quality objectives (SSWQO) (AEG, 2016b). The SSWQOs used are for the “KZ-9” monitoring station located downstream of the proposed discharge location on Geona Creek. Although such short term leach extractions are not strictly comparable to water quality guidelines, such comparison aids the identification of elevated soluble constituent concentrations and the potential for trace element leaching. This comparison is strictly for reference purposes and does not indicate compliance or otherwise with the SSWQO or other water quality guidelines.



Dashed line represents method detection limit (note that below detection data are assigned half the detection limit); dotted line represents 10x crustal abundance.

Figure 5-9: Box Plots of Bulk Concentrations of Antimony, Arsenic, Bismuth and Cadmium by Geodomain



Dashed line represents method detection limit (note that below detection data are assigned half the detection limit); dotted line represents 10x crustal abundance.

Figure 5-10: Box Plots of Bulk Concentrations of Lead, Selenium, Silver and Zinc by Geodomain

Based on the SFE data, concentrations of the following elements were found to exceed the SSWQOs for KZ-9 – the most proximal compliance point in the receiving waters of Geona Creek downstream of the site currently proposed for the Project – in multiple samples:

- Aluminum;
- Antimony;
- Arsenic;
- Cadmium;
- Copper;
- Lead;
- Selenium; and
- Zinc.

These SFE leachate concentrations for these elements are summarized in Table 5-5 and presented by geodomain in Figure 5-11 and Figure 5-12. All of the SFE leachates were circumneutral to alkaline (pH 6.5 to 9.6), which is comparable to the paste pH measured for this dataset. Those elements which had elevated bulk concentrations relative to crustal abundance also exhibited some elevated SFE leachate concentrations with the exception of bismuth and silver, which were typically below their respective detection limits in the SFE leachates.

Sporadic SSWQO exceedances were observed for cadmium, zinc, and lead, which were restricted to the CARB MDS/RHY and PY CL RHY geodomains (Figure 5-11 and Figure 5-12). These two geodomains were also responsible for the majority of elevated leachable selenium and antimony concentrations, with the median antimony and selenium SFE concentrations for both geodomains above the respective SSWQO (Figure 5-11 and Figure 5-12). Indeed, all of the PY CL RHY samples had SFE leachate selenium levels higher than the SSWQO (0.002 mg/L); the median selenium concentration for the MU PY RHY geodomain also exceeded the SSWQO. Sporadic SSWQO exceedances for nickel (one sample) and uranium (three samples) were also observed in SFE leachates from CARB MDS/RHY and MU PY RHY samples. In general, samples from the PY CL RHY, CARB MDS/RHY, and MU PY RHY geodomains consistently returned higher trace element concentrations in SFE leachate than other geodomains with three notable exceptions:

- The largest number of SSWQO exceedances for dissolved arsenic were observed in the SFE leachate from CA CL MAF samples, consistent with the relatively high bulk arsenic concentrations observed for this geodomain;
- Elevated SFE leachate aluminum concentrations were observed across the majority of geodomains; and

- Although sporadic SSWQO excursions for dissolved copper were observed in the SFE leachate of almost all geodomains, only the upper quartile SFE copper concentration for the MDS and CARB MDS/RHY geodomains exceeded the SSWQO.

Bulk trace element concentrations determined by aqua regia digestion were compared to SFE leachate concentrations to evaluate any relationships. Positive correlations were found between the bulk trace element content and SFE concentrations for antimony, arsenic, and selenium (Figure 5-13), suggesting that their bulk concentrations plays a role in determining their soluble metal load.

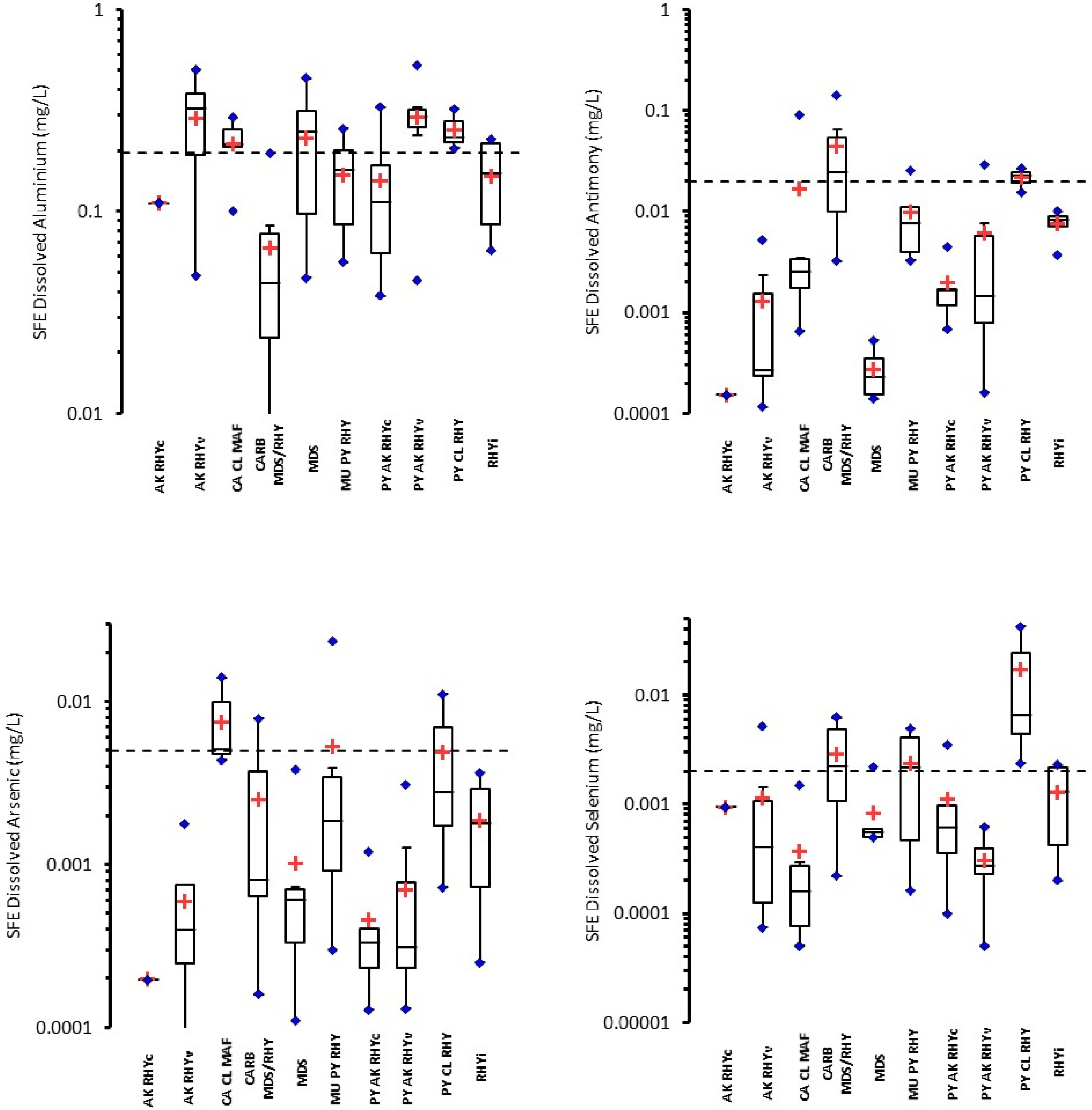
SFE leachate trace element concentrations were also compared with the leachate pH. A positive correlation was observed between leachate pH and aluminum (Figure 5-14). Aluminum is relatively insoluble at circumneutral pH (6 to 8), but its solubility increases with pH at pH>8 as the soluble $Al(OH)_4^-$ becomes the dominant dissolved form of aluminum. This trend is evident in the SFE analyses as dissolved aluminum is lowest at circumneutral pH and increases as SFE leachate pH rises. Leachate with lower pH (pH <7) also tended to have higher concentrations of elements associated with sulphide mineralization (zinc, cadmium, lead, iron) (Figure 5-14).

SFE leachate copper concentrations showed no relationship with either SFE leachate pH or the bulk copper content of the sample. However, it is interesting to note that the two geodomains that contained the highest number of SSWQO copper exceedances (MDS and CARB MDS/RHY) are characterized by carbonaceous material. Dissolved organic carbon (DOC) is known to form strong complexes with copper and promote its solubilisation. As such, it is hypothesized that DOC released from these carbonaceous geodomain samples during the SFE test may have assisted the leaching of copper in these cases.

Table 5-5: Comparison of SFE Concentrations of all Samples with Preliminary Site Specific Water Quality Objectives for the KZ-9 Monitoring Station

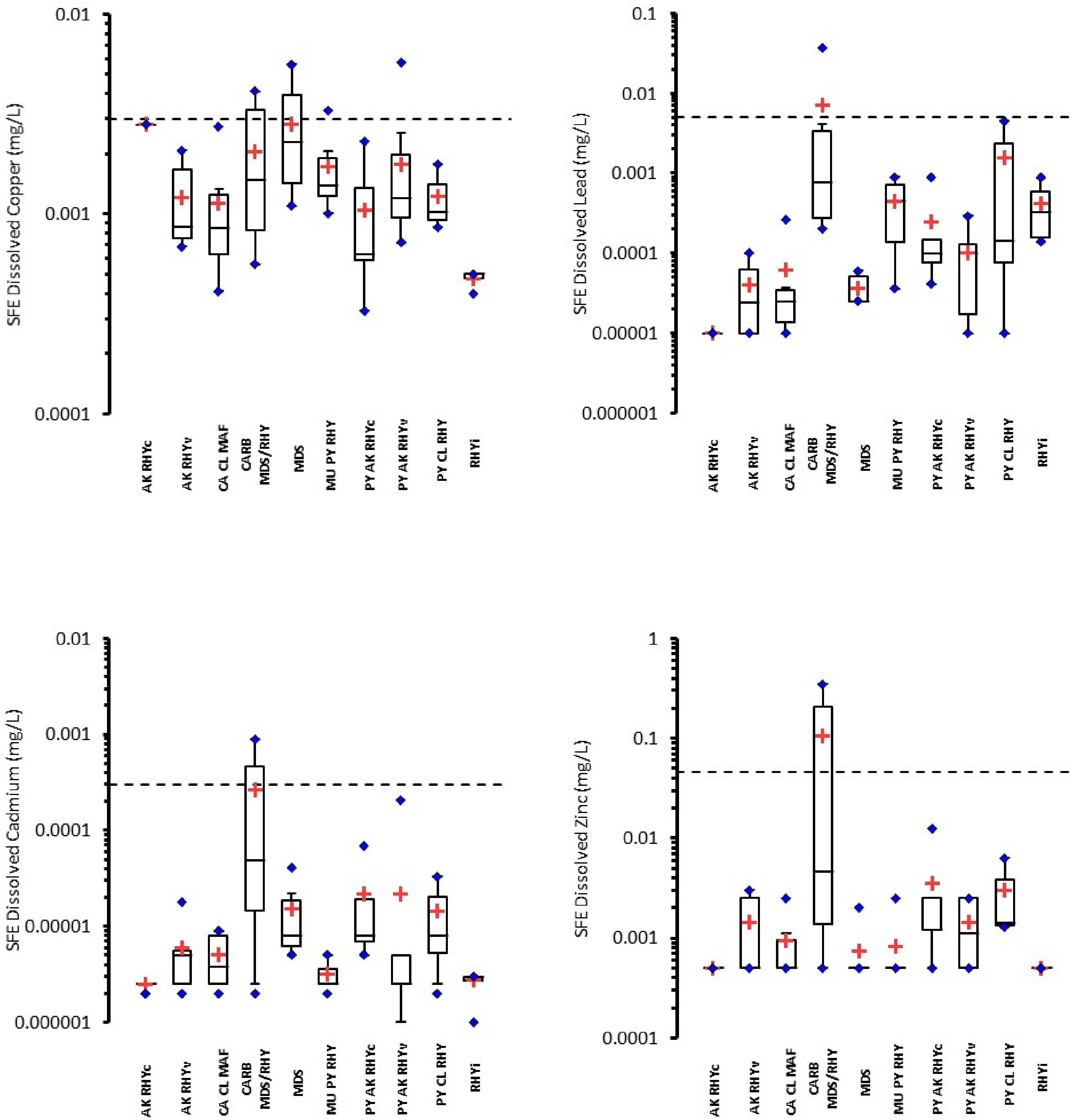
Element	Detection limit (mg/L)	SFE Min-Max Range (mg/L)	Median Value (mg/L)	Preliminary SSWQO for KZ-9 (mg/L)
Aluminum	0.001	0.0049 – **0.53** [a]	**0.21**	0.193
Antimony	0.00002	0.00012 – **0.141**	0.003	0.02
Arsenic	0.00002	0.000025 – **0.023**	0.00073	0.005
Cadmium	0.000002	<0.000002 – **0.00089**	0.000005	0.0003
Copper	0.0002	0.00033 – **0.0058**	0.0012	0.003
Lead	0.00002	<0.00002 – **0.036**	0.001	0.005
Nickel	0.0002	<0.0002 – **0.27**	0.0005	0.126
Selenium	0.00004	0.00005 – **0.0424**	0.0005	0.002
Uranium	0.000002	<0.000002 – **0.023**	0.0015	0.015
Zinc	0.001	<0.001 – **0.35**	0.0005	0.048

[a] **Bold** value exceeds the SSWQO



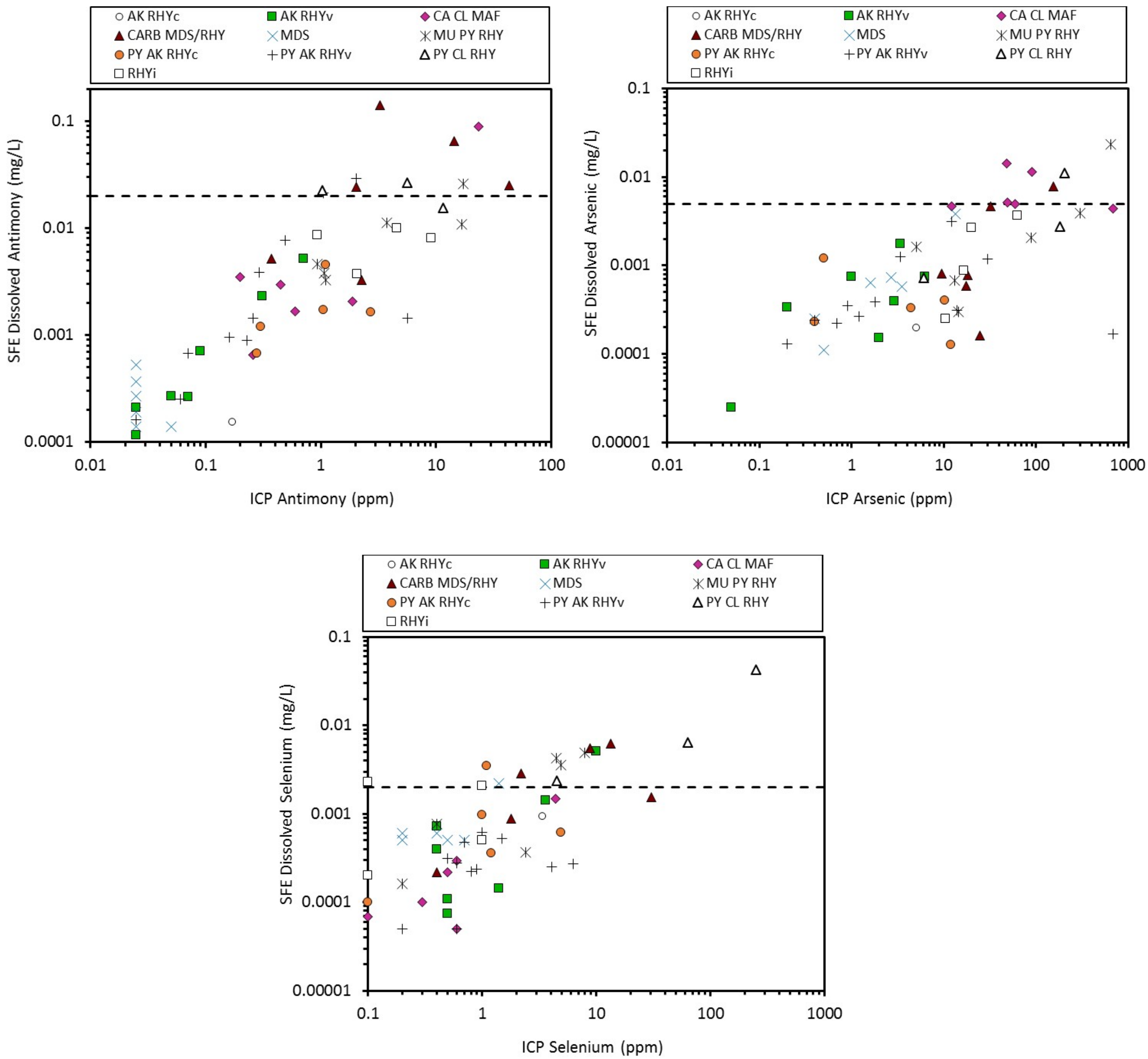
The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-11: Box Plots of SFE Leachable Aluminum, Antimony, Arsenic and Selenium by Geodomain



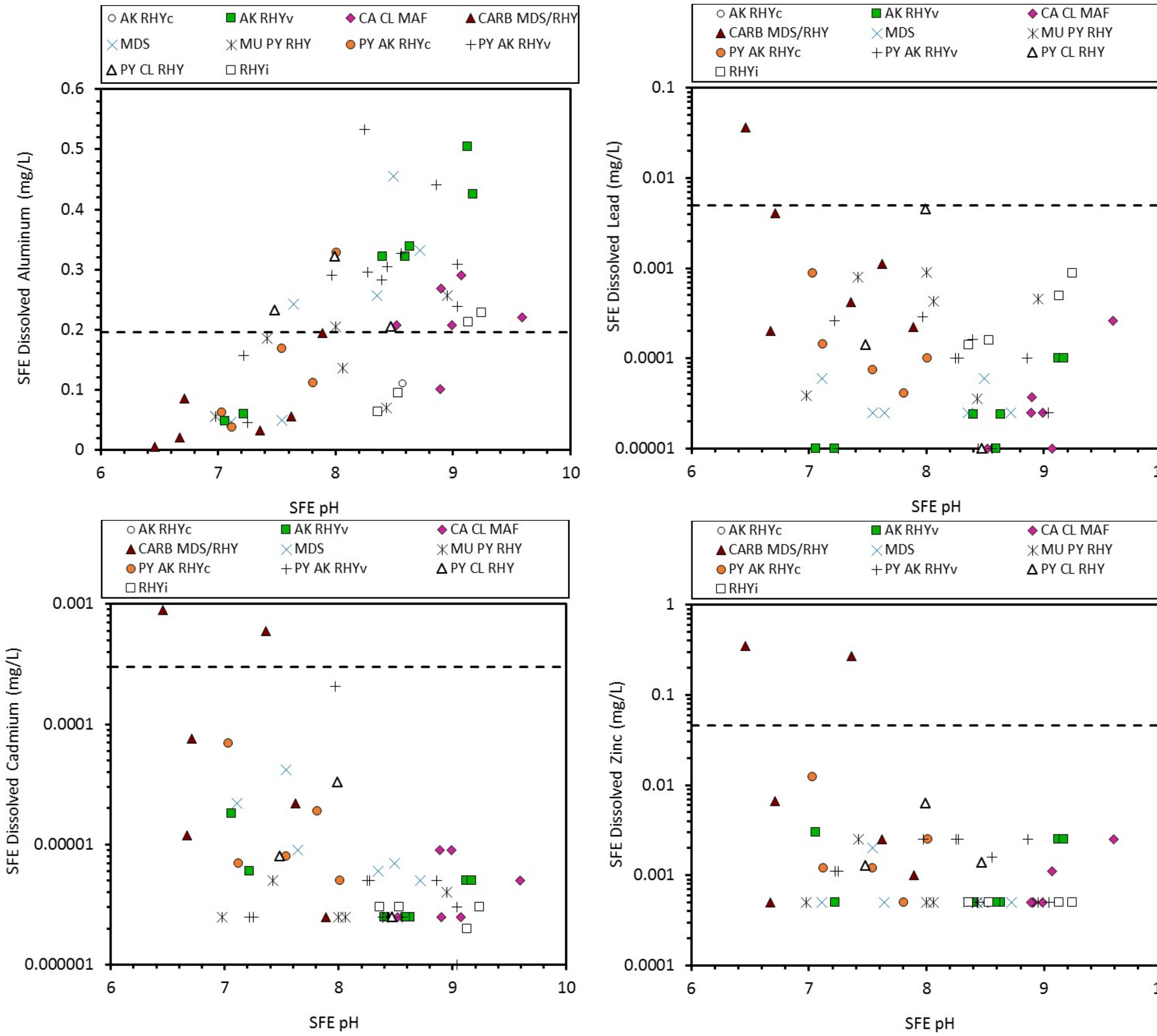
The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-12: Box Plots of SFE Leachable Copper, Lead, Cadmium, and Zinc by Geodomain



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-13: Comparison of SFE Leachable and Aqua Regia Bulk Concentrations of Antimony, Arsenic and Selenium



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-14: Relationship Between SFE Leachate pH and Dissolved Aluminum, Lead, Cadmium, and Zinc Concentrations

5.1.2 Mineralized rock Samples

BMC and Equity have identified four mineralized geodomains (BMC, 2015):

- MET2-4 – massive sulphide mineralization with a significant magnetite component;
- MET5-7 – massive sulphide mineralization that lacks a significant magnetite component;
- MET8 – vein/stockwork mineralization with a significant silicate gangue component; and
- +1340mRL, tt rich – massive sulphide mineralization that has significant deportment of copper in tennantite-tetrahedrite.

Eight mineralized rock samples, two from each mineralized geodomain, were subjected to ABA (Table 5-6) and elemental characterization via aqua regia digestion (Table 5-7). The full static dataset can be found in Appendix D. The paste pH of all but one sample was circumneutral to mildly alkaline (pH 6.9 to 8.6). Only one sample had an acidic paste pH (4.8) indicating it was net acid generating at the time of analysis. This sample also had the lowest inorganic carbon (<0.02 wt.%) and NP (10 kg $CaCO_3$/t vs 36 to 280 kg $CaCO_3$/t for the other seven samples), consistent with a lack of pH buffering capacity. All samples had a NP/AP ratio of much less than one due to their high sulphide sulphur content (32 to 46 wt.%) and were classed as potentially acid generating. The NP ranged from 10 to 280 kg $CaCO_3$/t, with three samples exhibiting NP of 198 kg $CaCO_3$/t or more suggesting that although they are net acid generating, some mineralized rock samples have considerable buffering capacity that may delay the onset of acidic conditions for some time.

As may be expected, all the mineralized rock samples contained high concentrations of elements that form sulphide (iron, lead, zinc, copper) and/or sulphosalt (arsenic, antimony, silver) phases, or are commonly associated with such mineral assemblages as substitutions or inclusions (cadmium, selenium) (Table 5-7).

SFE testing was performed on four of the mineralized rock samples, one from each geodomain, with the results for selected parameters listed in Table 5-8. Although the results of short term leach tests such as SFE are not directly representative of discharge water quality, they have been compared to the SSWQO developed for site KZ-9 on Geona Creek in order to highlight elevated concentrations of constituents of interest. This comparison is for reference purposes only and does not imply compliance or otherwise with the SSWQO or other water quality guidelines. Elevated dissolved lead (0.11 to 0.33 mg/L) and selenium (0.011 to 0.080 mg/L) concentrations were observed in all four SFE leachates. Galena (PbS) is typically relatively insoluble, however, galvanic interactions between galena and pyrite, which is abundant in the ABM mineralization, may have promoted the oxidative dissolution of galena, leading to the elevated lead concentrations in the mineralized rock SFE leachate. Selenium is known to have a strong association with lead in the ABM mineralization (BMC, 2015 and references therein) and is thought to substitute for sulphur in galena forming a galena-clausthalite (PbSe) solid solution series. As such, galena dissolution is likely responsible for the elevated SFE selenium concentrations observed. Zinc concentrations were also elevated in three of the four SFE leachates (0.48 to 2.87 mg/L). Sphalerite is also known to interact galvanically with pyrite (and galena). Oxidative dissolution and leaching of sphalerite is likely responsible for the elevated zinc concentrations observed.

Table 5-6: ABA Data for Mineralized Rock Samples

		Paste pH	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
			wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
	Detection Limit:		0.02	1.7	0.01	0.01	0.01	0.3	0.5	
Sample ID	**Geodomain**									
B00 293 204	MET2-4	7.03	0.26	22	37.3	0.06	37.3	1,165	55	0.05
B00 293 207	MET2-4	4.76	<0.02	<1.7	39.3	0.09	39.2	1,226	9.7	0.01
B00 293 215	MET5-7	7.16	0.49	41	45.7	0.04	45.7	1,427	86	0.06
B00 293 219	MET5-7	8.16	1.7	144	31.9	0.04	31.9	996	198	0.20
B00 293 226	MET8	6.92	0.11	9.2	37.6	0.06	37.6	1,174	29.8	0.03
B00 293 229	MET8	8.61	2.0	170	26.1	0.03	26.1	816	280	0.34
B00 293 233	+1340mRL, tt rich	7.09	0.17	14	40.3	0.05	40.2	1,257	36	0.03
B00 293 236	+1340mRL, tt rich	8.16	2.3	188	32.4	0.04	32.4	1,011	230	0.23

Table 5-7: Selected Element Abundance in Mineralized Rock Samples from Aqua Regia Digestion

		Silver	Arsenic	Cadmium	Copper	Iron	Lead	Antimony	Selenium	Zinc
		ppm	ppm	ppm	wt.%	wt.%	wt.%	ppm	ppm	wt.%
	Detection Limit:	0.01	0.1	0.01	0.005	0.01	0.01	0.05	0.2	0.01
Sample ID	Geodomain									
B00 293 204	MET2-4	53.8	760	696	0.07	26.2	2.21	44.0	18	11.7
B00 293 207	MET2-4	86.9	319	113	1.63	35.2	0.24	21.2	3.9	1.67
B00 293 215	MET5-7	66.5	483	441	0.15	21.1	1.20	144	11	7.09
B00 293 219	MET5-7	114	1,578	357	0.12	22.5	1.83	380	11.6	6.22
B00 293 226	MET8	122	450	982	0.22	28.6	1.40	59.3	200	17.2
B00 293 229	MET8	336	1,777	249	0.64	19.4	2.91	2,194	112	5.33
B00 293 233	+1340mRL, tt rich	175	1,627	927	0.37	23.7	2.50	760	25	14.8
B00 293 236	+1340mRL, tt rich	268	34,100	438	0.25	24.8	1.60	1,732	56	7.42

Table 5-8: Concentrations of Selected Elements in SFE Leachate from Mineralized Rock Samples

		pH	Sulphate	Aluminum	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Zinc
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	Detection Limit:	0.01	1	0.001	0.00005	0.00005	0.000002	0.0001	0.00005	0.0001	0.001
	SSWQO at KZ-9		218	0.193	0.02	0.005	0.0003	0.003	0.005	0.002	0.048
Sample ID	Geodomain										
B00 293 204	MET2-4	7.2	10	0.002	0.0061	0.00042	0.00012	0.0005	**0.18**	**0.011**	**0.48**
B00 293 215	MET5-7	6.7	33	0.001	0.0033	0.00041	**0.0030**	0.0003	**0.33**	**0.080**	**2.87**
B00 293 229	MET8	9.0	19	0.068	**0.087** [a]	0.00056	0.00001	0.0002	**0.11**	**0.025**	0.008
B00 293 233	+1340mRL, tt rich	7.1	9	0.003	0.014	0.00015	0.00026	0.0005	**0.21**	**0.015**	**0.72**

[a] **Bold** value exceeds the SSWQO

5.1.3 TAILINGS SAMPLES

Four tailings samples were subjected to ABA, aqua regia digestion, and SFE testing (Table 5-9 to Table 5-12), all produced via locked cycle testing. The full static dataset can be found in Appendix E. Supernatant water collected following the locked cycle testing for sample “Test 29” was also collected and analyzed for major and trace element chemistry.

The paste pH of the four tailings ranged from mildly acidic to circumneutral (pH 5.9 to 7.7). The lowest paste pH sample (Test 25, cycles 4-6) also had the highest sulphate sulphur content (0.2 wt.% vs 0.05 to 0.08 wt.% in other tailings samples). All four tailings samples had comparable NP (85 to 96 kg $CaCO_3$/t) and sulphide sulphur (27.5 to 30.9 wt.%) content. All four samples had NP/AP ratios well below one indicating they are potentially acid generating, although the relatively high NP may substantially delay the onset of acidic conditions.

XRD analysis of two tailings samples (Test 29 cycle 1-6 and A17107) indicated very similar bulk mineralogy, dominated by pyrite (51-52 wt.%) and supplemented by 3 wt.% pyrrhotite (Table 5-10). The NP largely appears to be derived from 10 wt.% ankerite or dolomite (both minerals are difficult to distinguish from each other by XRD), with some minor calcite (2 wt.%) present in the A17107 sample.

As may be expected, all four tailings contain high concentrations of trace elements associated with the metal sulphide mineralization and shared similar concentration ranges (Table 5-11).

Although the results of short term leach tests such as SFE are not directly representative of discharge water quality, they have been compared to the SSWQO developed for site KZ-9 on Geona Creek in order to highlight elevated concentrations of constituents of interest. This comparison is for reference purposes only and does not imply compliance or otherwise with the SSWQO or other water quality guidelines.

SFE leachates returned elevated concentrations of dissolved cadmium, copper, lead, selenium, and zinc, with the latter showing the highest concentrations (2.4 to 24 mg/L) (Table 5-12). Despite their similar bulk element content of the two Test 25 samples, the tailings produced following cycles 4-6 had markedly higher SFE leachable trace element concentrations than those obtained after cycles 1-3, with cadmium, zinc, and selenium all approximately one order of magnitude higher. Indeed, the cycles 4-6 sample had the highest SFE leachate sulphate, arsenic, cadmium, copper, lead, selenium, and zinc concentrations with the zinc, copper and cadmium concentrations some two to four fold higher than those observed in the other samples.

The supernatant sample collected for the Test 29 cycle 1-6 sample had markedly higher dissolved antimony and copper concentrations that were approximately two orders of magnitude higher than the counterpart SFE leachate levels. Conversely, the supernatant lead and zinc concentrations were one and two orders of magnitude lower than the SFE leachate levels, respectively.

Table 5-9: ABA Data for Tailings Samples

	Paste pH	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
Detection Limit:		0.02	1.7	0.01	0.01	0.01	0.3	0.5	
Sample ID									
Test 25 - Zn Ro Tail Cyc 1-3	6.77	1.39	116	28.4	0.06	28.4	886	96	0.11
Test 25 - Zn Ro Tail Cyc 4-6	5.89	1.29	108	27.7	0.20	27.5	861	91	0.11
Test 29 - Zn Ro Tail Cyc 1-6	7.03	1.35	113	28.2	0.08	28.1	879	96	0.11
A17107 (Test #1-20)	7.69	0.76	63	30.9	0.05	30.9	965	85	0.09

Table 5-10: Mineralogy of Tailings Samples from XRD

	Mineralogy (wt.%)											
	Sulphides			Carbonates			Silicates, Oxides and Sulphates					
Sample ID	Pyrite	Pyrrhotite	Chalcopyrite	Calcite	Ankerite-Dolomite	Siderite	Quartz	Illite-Muscovite 2M1	Clinochlore	Magnetite	Gypsum	Barite
Test 29 - Zn Ro Tail Cyc 1-6	51.1%	3.1%	0.7%	-	10.7%	4.2%	9.1%	9.9%	4.2%	3.6%	0.9%	2.4%
A17107 (Test #1-20)	51.9%	3.0%	-	2.2%	10.0%	4.2%	8.6%	9.8%	4.4%	2.2%	0.8%	3.0%

Table 5-11: Selected Element Abundance in Tailings Samples from Aqua Regia Digestion

	Silver	Arsenic	Cadmium	Copper	Iron	Lead	Antimony	Selenium	Zinc
	ppm	ppm	ppm	ppm	wt.%	ppm	ppm	ppm	ppm
Detection Limit:	0.01	0.1	0.01	0.2	0.01	0.2	0.05	0.2	0.01
Sample ID									
Test 25 - Zn Ro Tail Cyc 1-3	17.6	2,193	22.9	764	28.9	1,811	40.9	11	3,033
Test 25 - Zn Ro Tail Cyc 4-6	19.4	2,163	26.6	895	28.8	2,035	46.5	5.1	3,618
Test 29 - Zn Ro Tail Cyc 1-6	20.6	2,054	35.4	1,128	28.9	2,052	47.3	4.7	4,672
A17107 (Test #1-20)	20.2	2,723	17.6	943	26.3	1,639	57	5.0	2,315

Table 5-12: Concentrations of Selected Elements in SFE Leachate from Tailings Samples and Locked Cycle Supernatant

		pH	Sulphate	Aluminum	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Zinc
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	Detection Limit:	0.01	1	0.001	0.00005	0.00005	0.000002	0.0001	0.00005	0.0001	0.001
	SSWQO at KZ-9		218	0.193	0.02	0.005	0.0003	0.003	0.005	0.002	0.048
	Sample ID										
SFE	Test 25 - Zn Ro Tail Cyc 1-3	7.31	169	<0.001	0.0032	0.0004	**0.03**	**0.0058**	**0.12**	**0.034**	**3.1**
	Test 25 - Zn Ro Tail Cyc 4-6	7.09	613	<0.002	0.0026	0.0035	**0.32**	**0.014**	**0.26**	**0.41**	**24**
	Test 29 - Zn Ro Tail Cyc 1-6	7.31	482	<0.003	0.0034	0.0016	**0.091**	**0.0072**	**0.14**	**0.24**	**6.4**
	A17107 (Test #1-20)	7.4	239	0.002	0.0027	0.00032	**0.039**	**0.0041**	**0.11**	**0.18**	**2.4**
Locked Cycle Supernatant	Test 29 - Zn Ro Tail Cyc 1-6	7.83	236	0.02	**0.102**	0.003	0.002	**1.07**	**0.026**	**0.26**	**0.071**

Bold value exceeds the SSWQO

5.1.4 OVERBURDEN SAMPLES

5.1.4.1 *Infrastructure Sites Overburden*

The results of ABA performed on sixteen overburden samples collected from the Project infrastructure area are summarized in Table 5-13. The full static dataset can be found in Appendix F. All the samples returned neutral to slightly alkaline paste pH (7.3 to 8.6) and contained negligible sulphur (typically below detection <0.01 wt.%). The NP was also generally low, with the majority of samples in the 4 to 13 kg $CaCO_3$/t range, however acid generation is not anticipated from these overburden samples since the NP is adequate to counteract the very limit AP.

A statistical summary of elements of interest from the aqua regia bulk digestion of the overburden samples is presented in Table 5-14. The concentrations were compared with the average continental crustal abundance, with ten times crustal abundance used to screen for elements that may be elevated. A quarter of the overburden samples returned arsenic, bismuth, and selenium concentrations that were more than 10x their respective crustal abundance. Ten percent of samples also exceeded the 10x crustal abundance for cadmium.

Such elevated concentrations relative to crustal abundance did not appear to translate to high concentrations of soluble and easily leached elements as indicated by SFE testing that was performed on a subset of eight overburden samples and summarized in Table 5-15. Although the results of short term leach tests such as SFE are not directly representative of discharge water quality, they have been compared to the SSWQO developed for site KZ-9 on Geona Creek in order to highlight elevated concentrations of constituents of interest. This comparison is for reference purposes only and does not imply compliance or otherwise with the SSWQO or other water quality guidelines.

The SFE leachate was mildly acidic to circumneutral (pH 5.7 to 7.8), and returned sporadic SSWQO exceedances for aluminum (one sample), zinc (one sample), and cadmium (two samples). Overburden samples collected from the ABM open pit area (both ABM Zone and Krakatoa Zone) tended to show the highest lead, cadmium, and zinc concentrations (Figure 5-15), perhaps reflecting the underlying mineralization. A moderate correlation between the bulk element content of the sample and its SFE leachable concentration was also evident for these three elements (Figure 5-15). Dissolved copper concentrations in the SFE leachate showed the highest number of SSWQO exceedances (five samples; 0.003 to 0.007 mg/L vs SSWQO of 0.003 mg/L). Although the samples from the ABM open pit area tended to have SFE leachate copper levels in excess of the SSWQO, no correlation with the bulk copper content of the samples was evident. Bulk copper content (22 to 95 ppm) was broadly in line with the crustal abundance of copper (60 ppm).

In general, these overburden samples analyzed are not expected to generate acid and showed limited trace element leachability based on the short term SFE tests, however, samples from the ABM open pit area showed the highest soluble trace metal loads.

Table 5-13: ABA Data for Infrastructure Site Overburden Samples

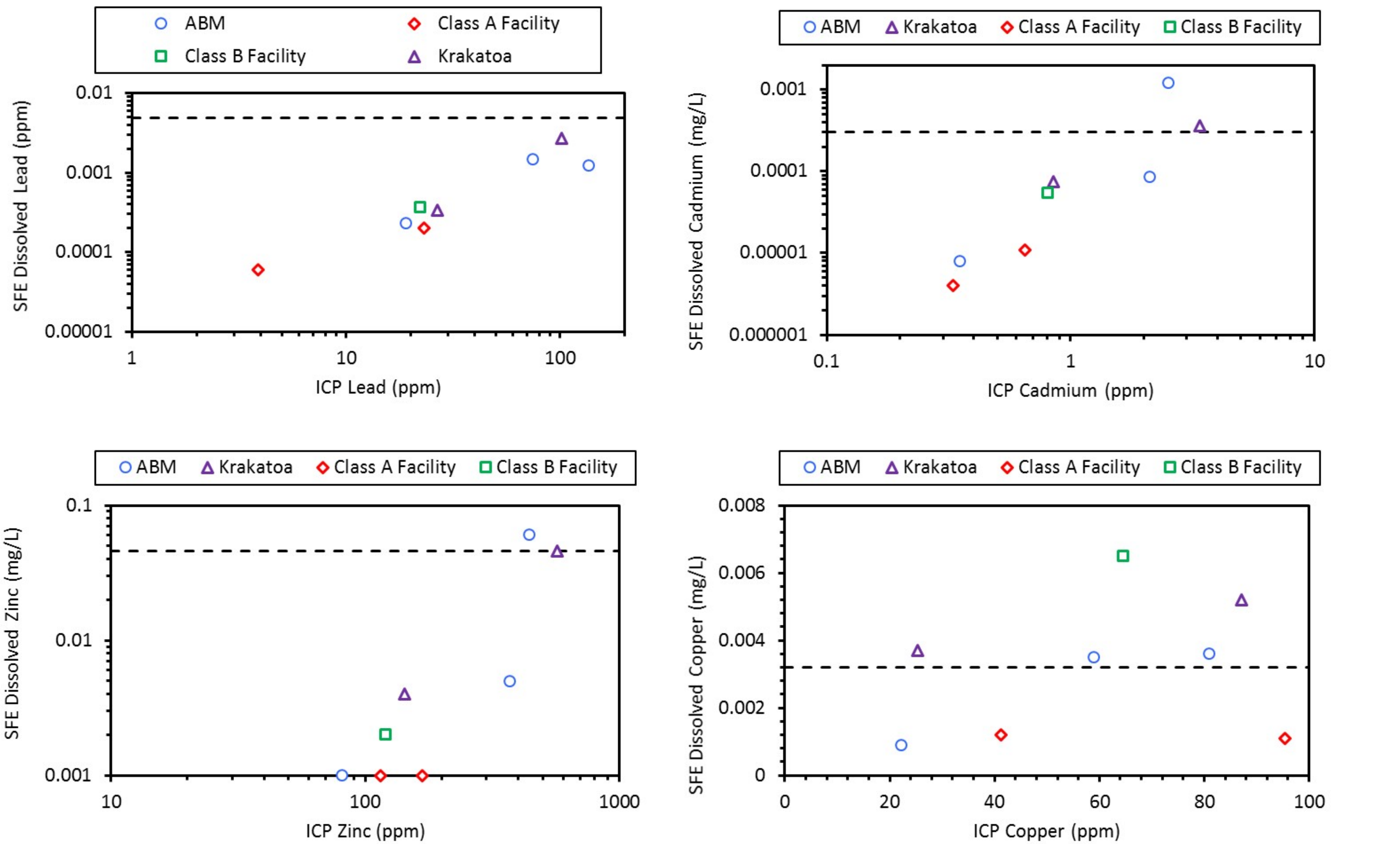
Sample ID	Paste pH	Total Organic C	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		wt. %	wt. %	kg $CaCO_3$/t	wt. %	wt. %	wt. %	kg $CaCO_3$/t	kg $CaCO_3$/t	
Detection Limit:		0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5	
TP16-05	7.73	0.06	<0.02	<1.7	0.01	0.01	<0.01	<0.3	3.9	>13
TP16-06	8.08	0.20	<0.02	<1.7	0.1	0.03	0.07	2.2	4.5	2.1
TP16-07	7.64	0.19	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	5	>16
TP16-08	7.30	0.09	<0.02	<1.7	0.02	0.02	<0.01	<0.3	6.8	>22
TP16-09	8.26	-	0.02	1.7	<0.01	<0.01	<0.01	<0.3	10.1	>33
TP16-11	8.37	0.15	0.03	2.5	<0.01	<0.01	<0.01	<0.3	12.7	>42
TP16-18	8.02	0.12	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	8.8	>29
TP16-19	7.90	-	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	8.1	>27
TP16-22	8.16	-	0.07	5.8	0.01	<0.01	0.01	0.3	10.7	34.2
TP16-25	7.27	-	0.02	1.7	<0.01	<0.01	<0.01	<0.3	7	>23
TP16-27	8.54	-	1.36	113.3	<0.01	<0.01	<0.01	<0.3	118	>390
TP16-31	8.21	-	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	10.2	>34
TP16-38	7.93	-	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	8.7	>29
TP16-44	8.43	0.07	0.13	10.8	<0.01	<0.01	<0.01	<0.3	18	>60
TP16-45	8.03	-	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	7.3	>24
TP16-49	8.56	0.03	0.46	38.3	<0.01	<0.01	<0.01	<0.3	47.9	>160

Table 5-14: Statistical Summary of Selected Element Abundance in Infrastructure Site Overburden Samples from Aqua Regia Digestion

n = 28	Arsenic	Antimony	Bismuth	Cadmium	Lead	Selenium	Silver	Sulphur	Zinc
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	wt.%	ppm
10x Crustal Abundance	18	2	0.085	1.5	140	0.5	0.75	0.35	700
Method Detection Limit	0.1	0.05	0.01	0.01	0.2	0.2	0.01	0.01	2
Maximum	43.0	1.37	3.72	1.21	121	0.7	1.7	0.06	312
3rd Quartile	19.6	0.73	0.19	0.65	12.8	0.5	0.2	0.03	109
Median	12.6	0.47	0.15	0.51	9.60	0.4	0.2	0.03	75.5
1st Quartile	9.70	0.10	0.06	0.31	7.70	0.4	0.10	0.02	65.8
Minimum	1.30	<0.05	0.02	0.03	1.50	0.3	0.02	0.01	40.0
Highlighted Results Exceed 10x Crustal Value									

Table 5-15: Statistical Summary of Selected Element Concentrations in SFE Leachate from Infrastructure Site Overburden Samples

n = 8	Aluminum	Antimony	Arsenic	Cadmium	Copper	Lead	Nickel	Selenium	Uranium	Zinc
	mg/L									
Detection Limit:	0.001	0.00005	0.00005	0.000002	0.0001	0.00005	0.00002	0.0001	0.000001	0.001
Preliminary SSWQO for KZ-9	0.193	0.02	0.005	0.0003	0.003	0.005	0.126	0.002	0.015	0.048
Maximum	0.282	0.0045	0.0025	0.0012	0.0065	0.0027	0.0015	0.0005	0.00021	0.061
3rd Quartile	0.11	0.00026	0.00080	0.00015	0.0041	0.0013	0.00091	0.0002	0.00011	0.015
Median	0.095	0.00012	0.00048	0.000065	0.0036	0.00035	0.00031	0.0001	0.000075	0.0030
1st Quartile	0.041	0.00008	0.00032	0.000010	0.0012	0.00022	0.00023	<0.0001	0.000035	<0.001
Minimum	0.022	<0.00005	0.00015	0.000004	0.0009	0.00006	0.00014	<0.0001	0.000013	<0.001
Highlighted Results Exceed Preliminary SSWQO for KZ-9										



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-15: Comparison of SFE Leachable and Aqua Regia Bulk Concentrations of Lead, Cadmium, Zinc, and Copper

5.1.4.2 ***Tote Road Overburden***

The results of ABA analyses performed on twenty eight overburden samples collected from the potential borrow sources along the Tote Road are summarized in Table 5-16. Similar to the overburden collected at the Project infrastructure sites, the overburden collected along the Tote Road returned neutral to alkaline paste pH (7.7 to 8.9 for the soils samples and 8.7 to 9.2 for the rock samples). The majority of samples contained very little sulphur (typically below the 0.01 wt.% detection limit), and had enough NP to provide adequate neutralization to any minimal acid generation that might occur during the disturbance of these materials.

A statistical summary of elements of interest from the aqua regia bulk digestion of the Tote Road overburden samples are presented in Table 5-17. The concentrations were compared with the average continental crustal abundance, with ten times crustal abundance used to screen for elements that may be elevated. The median bismuth and third quartile arsenic concentrations were more than 10x their respective crustal abundance. The maximum concentrations observed for selenium and silver also exceeded the 10x crustal abundance for cadmium.

Such elevated concentrations relative to crustal abundance did not appear to translate to high concentrations of soluble and easily leached elements as indicated by SFE testing that was performed on a subset of sixteen Tote Road overburden samples and summarized in Table 5-18. Although the results of short term leach tests such as SFE are not directly representative of discharge water quality, they have been compared to the SSWQO developed for site KZ-9 on Geona Creek in order to highlight elevated concentrations of constituents of interest. This comparison is for reference purposes only and does not imply compliance or otherwise with the SSWQO or other water quality guidelines.

The SFE leachate was circumneutral to mildly alkaline (pH 7.8 to 8.7), and returned sporadic SSWQO exceedances for aluminum (third quartile; six samples 0.21 to 0.33 mg/L) and selenium (one sample, 0.0021 mg/L). The aluminum mobilization is likely a function of both the mildly alkaline pH range of the SFE leachate combined with the crushing employed for the rock samples (four of the six samples that showed elevated aluminum levels) to perform the SFE test. No other trace elements showed elevated SFE leachate concentrations. Given the sporadically elevated copper levels in SFE leachate from overburden collected at locations associated with Project Infrastructure, dissolved organic carbon was also measured in the SFE leachate from the Tote Road soil samples to explore any relationship with dissolved copper. Although the copper concentrations from the Tote Road samples were relatively low, a moderate positive correlation was observed between dissolved organic carbon and copper (Figure 5-16). This may suggest that the marginally elevated copper concentrations observed in SFE leachate from the Project Infrastructure site overburden samples were mobilized as organic matter complexes, which may ameliorate any limited impacts of the copper concentrations observed.

In general, the Tote Road overburden samples analyzed are not expected to generate acid and showed limited trace element leachability based on the short term SFE tests.

Table 5-16: ABA Data for Tote Road Overburden Samples

Sample ID	Sample Type	Paste pH	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
			wt. %	kg CaCO3/t	wt. %	wt. %	wt. %	kg CaCO3/t	kg CaCO3/t	
Reported Detection Limit:			0.02	1.7	0.01	0.01	0.01	0.3	0.5	
TP-OEL-1	Soil	8.68	0.47	39.2	0.01	0.01	<0.01	<0.3	42.4	>141
TP-OEL-2	Soil	7.73	0.02	1.7	<0.01	<0.01	<0.01	<0.3	8.2	>27
TP-OEL-3	Soil	8.65	0.33	27.5	<0.01	<0.01	<0.01	<0.3	30.9	>103
TP-OEL-4	Soil	8.63	1.15	95.8	0.01	0.01	<0.01	<0.3	95.2	>317
TP-OEL-5	Soil	8.4	<0.02	<1.7	0.01	0.01	<0.01	<0.3	7.7	>25
TP-OEL-6	Soil	8.71	0.29	24.2	<0.01	<0.01	<0.01	<0.3	29.8	>99
TP-OEL-10	Rock	8.77	2.93	244	0.04	0.02	0.02	0.6	242	>805
TP-OEL-12	Rock	8.74	0.21	17.5	0.02	0.02	<0.01	<0.3	28.8	>96
TP-OEL-13	Rock	9.19	0.85	70.8	<0.01	0.01	<0.01	<0.3	72.3	>241
TP-OEL-14	Rock	8.73	1.71	143	0.03	0.03	<0.01	<0.3	140	>465
TP-OEL-15	Rock	8.98	0.64	53.3	<0.01	<0.01	<0.01	<0.3	65.4	>218
TP-OEL-16	Rock	8.91	1.43	119	0.01	0.01	<0.01	<0.3	118	>393
TP-OEL-17	Rock	8.63	0.47	39.2	0.01	0.01	<0.01	<0.3	45.7	>152
TP-OEL-18	Soil	7.55	<0.02	<1.7	0.02	0.02	<0.01	<0.3	1.8	>6
TP-OEL-19	Rock	8.8	0.09	7.5	0.02	0.01	0.01	0.3	14.9	48
TP-OEL-JA50	Soil	7.76	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	5.4	>18
TP-OEL-JA51	Soil	8.65	0.44	36.7	0.02	0.02	<0.01	<0.3	42.9	>143
TP-OEL-JA52	Soil	8.51	0.14	11.7	<0.01	<0.01	<0.01	<0.3	17.3	>57
TP-OEL-JA54	Soil	8.76	0.51	42.5	<0.01	<0.01	<0.01	<0.3	11.3	>37
TP-OEL-JA55	Soil	8.78	0.8	66.7	0.01	0.01	<0.01	<0.3	71.3	>237
TP-OEL-JA56	Soil	8.78	0.55	45.8	0.03	0.02	0.01	0.3	51.9	166
TP-OEL-JA57	Soil	8.64	0.79	65.8	0.01	0.01	<0.01	<0.3	71.9	>239
TP-OEL-JA58	Soil	8.73	0.7	58.3	0.02	0.02	<0.01	<0.3	63.3	>211
TP-OEL-JA59	Soil	8.46	0.8	66.7	0.01	0.01	<0.01	<0.3	69.3	>231
TP-OEL-JA61	Soil	8.78	0.7	58.3	0.03	0.03	<0.01	<0.3	59.4	>198
TP-OEL-JA62	Soil	8.37	0.21	17.5	0.02	0.02	<0.01	<0.3	24.1	>80
TP-OEL-JA63	Soil	8.86	0.66	55.0	0.01	0.01	<0.01	<0.3	59.4	>198
TP-OEL-JA64	Soil	8.78	0.82	68.3	<0.01	<0.01	<0.01	<0.3	70.8	>236

Table 5-17: Statistical Summary of Selected Element Abundance in Tote Road Overburden Samples from Aqua Regia Digestion

	Arsenic	Antimony	Bismuth	Cadmium	Lead	Selenium	Silver	Sulphur	Zinc
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	wt.%	ppm
10x Crustal Abundance	18	2	0.085	1.5	140	0.5	0.75	0.35	700
Method Detection Limit	0.1	0.05	0.01	0.01	0.2	0.2	0.01	0.01	2
Maximum	43.0	1.37	3.72	1.21	121	0.7	1.7	0.06	312
3rd Quartile	19.2	0.72	0.20	0.64	12.5	0.5	0.2	0.03	104
Median	12.6	0.53	0.15	0.48	9.40	0.4	0.2	0.03	75.0
1st Quartile	9.88	0.12	0.08	0.33	7.75	0.3	0.10	0.02	65.3
Minimum	1.30	<0.05	0.02	0.03	1.50	0.3	0.02	0.01	40.0
Highlighted Results Exceed Crustal Value									

Table 5-18: Statistical Summary of Selected Element Concentrations in SFE Leachate from Tote Road Overburden Samples

n = 16	Aluminum	Antimony	Arsenic	Cadmium	Copper	Lead	Nickel	Selenium	Uranium	Zinc
	mg/L									
Detection Limit:	0.001	0.00005	0.00005	0.000002	0.0001	0.00005	0.00002	0.0001	0.000001	0.001
Preliminary SSWQO for KZ-9	0.193	0.02	0.005	0.0003	0.003	0.005	0.126	0.002	0.015	0.048
Maximum	0.33	0.00069	0.0037	0.000026	0.0023	0.00071	0.00088	0.0021	0.00083	0.042
3rd Quartile	0.24	0.00027	0.0012	0.000009	0.0017	0.00024	0.00027	0.00047	0.00047	0.00145
Median	0.16	0.00016	0.00080	0.000006	0.0013	0.00012	0.00021	0.00031	0.00021	<0.001
1st Quartile	0.12	0.00008	0.00062	0.000003	0.0009	0.00009	0.00014	0.00020	0.00010	<0.001
Minimum	0.034	0.00007	0.00047	<0.000002	0.0002	<0.00005	<0.00002	0.00011	0.000021	<0.001
Highlighted Results Exceed Preliminary SSWQO for KZ-9										

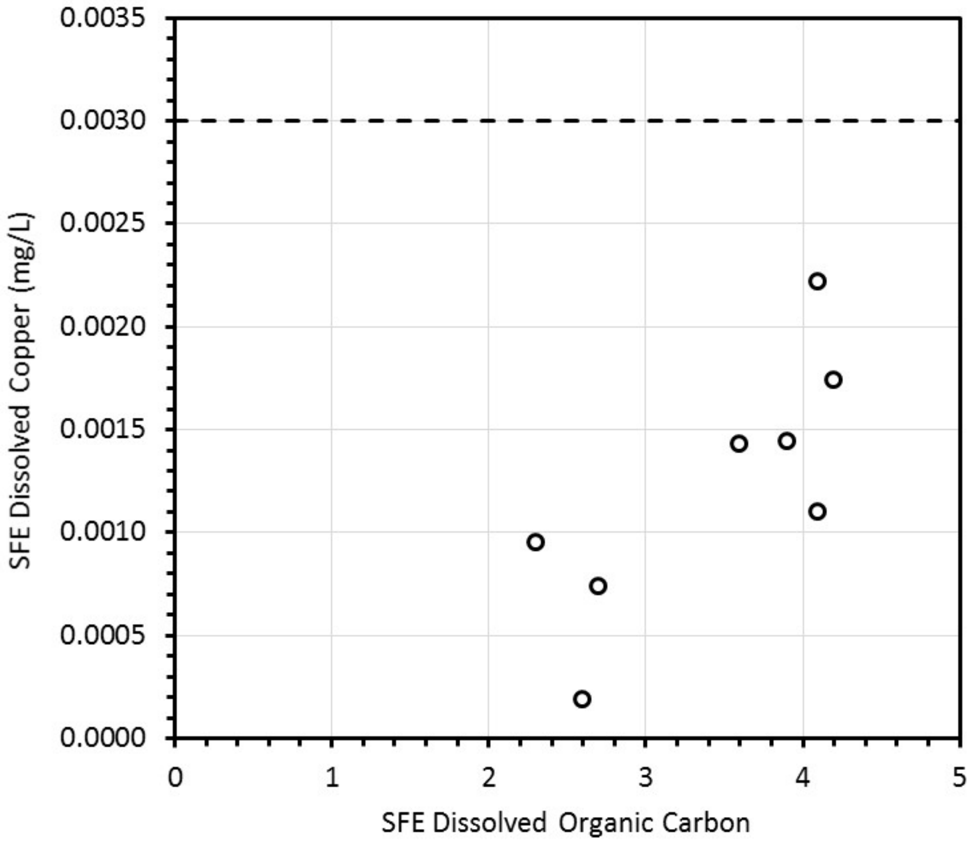


Figure 5-16: Relationship between Dissolved Copper and Dissolved Organic Carbon Concentrations in the SFE Leachate of Tote Road Soil Overburden

5.2 KINETIC TESTING

Kinetic testing of the waste rock and tailings samples was designed to both supplement the kinetic work performed by Cominco (NDM, 1996) and inform the updated mine plan. Although the Cominco kinetic testing suffered from high detection limits for trace elements, the major constituent data (e.g., sulphate, calcium, magnesium) data were acceptable for use.

A summary of the 2015/16 AEG testing program and that performed by Cominco is presented in Table 5-19. Of the 22 humidity cells that formed part of the Cominco kinetic work, 17 were charged with drill core waste rock and five with mineralized rock or massive sulphide material. Four of the Cominco humidity cells (I-01 to I-04) were operated for 20 weeks with all parameters of interest analyzed for each weekly cycle. The remaining 18 humidity cells were operated for 23 weeks with metals analysis conducted every second week. Although this is a shorter test duration than would be typical today, the release rates of sulphate, calcium, and magnesium appeared to have broadly stabilized in the final two months of testing, allowing for the calculation of sulphide and NP depletion rates. Trickle leach cells were also conducted as part of the Cominco ARD/ML testing program. Such testing can offer valuable information regarding waste rock drainage chemistry, however, these data have not been included due to poor trace element detection limits. Cominco also conducted subaqueous columns for tailings and waste rock material, however, these data are not considered since the current BMC mine plan no longer contemplates the subaqueous disposal of tailings and strongly acid generating waste rock.

The Cominco humidity cell data were augmented with three humidity cells and ten trickle leach columns that were initiated in the 2015/2016 AEG testing program (Table 4-4). These tests are ongoing at present; 39 weeks of data are available for the majority of ongoing kinetic tests. Major and trace constituent concentrations in the kinetic test leachates appear to have reached a pseudo steady state in most of the ongoing kinetic tests that have been operating from 20 weeks or more. These are termed pseudo steady state since all the kinetic tests are ongoing and the “final” steady state concentrations will not be available until the tests have been terminated, however, preliminary estimates of sulphide and NP depletion, and trace element release rates have been prepared.

Field barrels bearing drill core largely segregated by geodomain were also constructed at site in late 2015. Approximately monthly data are available for these field barrels from April/May to October 2016.

Table 5-19: Summary of 2015/16 AEG and 1996 Cominco Kinetic Testing Program

	Sample ID			
	Cominco	AEG	Geodomain [a]	Test Duration [b]
Humidity Cell	I-01		Sulphide	20 weeks
	I-02		Unknown	20 weeks
	I-03		Unknown	20 weeks
	I-04		Unknown	20 weeks
	II-05		AK RHYc	23 weeks
	II-06		MU PY RHY	23 weeks
	II-07		AK RHYv	23 weeks
	II-08		PY AK RHYv	23 weeks
	II-09		PY AK RHYv	23 weeks
	II-10		Unknown	23 weeks
	II-11		PY AK RHYv	23 weeks
	II-12		Unknown	23 weeks
	II-13		AK RHYc	23 weeks
	II-14		PY AK RHYv	23 weeks
	II-15		CARB MDS/RHY	23 weeks
	II-16		MU PY RHY	23 weeks
	II-17		CA CL MAF	23 weeks
	II-18		PY CL RHY	23 weeks
	II-19		Sulphide	23 weeks
	II-20		Sulphide	23 weeks
	II-21		Sulphide	23 weeks
	II-22		Sulphide	23 weeks
		HC-1	PY AK RHYv	39 weeks
		HC-2	CARB MDS/RHY	39 weeks
		HC-3	Tailings	19 weeks
Trickle Leach Column		C-1	Mainly AK RHYv	39 weeks
		C-2	Mainly PY AK RHYv + PY AK RHYc	39 weeks
		C-3	MU PY RHY only	39 weeks
		C-4	CARB MDS/RHY only	39 weeks
		C-5	Mainly PY AK RHYv	39 weeks
		C-6	Mix	39 weeks
		C-7	Mainly CARB MDS/RHY + PY CL RHY	39 weeks
		C-8	RHYi only	33 weeks
		C-9	MDS only	16 weeks
		C-10	Tailings + class A waste rock	8 weeks

[a] No Cominco core from this interval was left for geodomain re-logging by BMC, hence “unknown” assignment
[b] As of October 5, 2016 for AEG samples; AEG kinetic testing is ongoing;

5.2.1 WASTE ROCK

5.2.1.1 *Trickle Leach Columns*

Nine waste rock-bearing trickle leach columns were constructed. The composition of the columns was largely guided by the waste rock classification criteria developed by Cominco (NDM, 1996) in order to evaluate the drainage chemistry that might be expected from the three different Storage Facilities:

- Class A material (termed as SPAG by Cominco) has either a total sulphur content greater than 2.9 wt.% or NP less than 18 kg $CaCO_3$/t and an NP/AP less than 1;
- Class B material (termed as WPAG by Cominco) has a total sulphur content less than 2.9 wt.%, an NP greater than 18 kg $CaCO_3$/t, and an NP/AP less than 1.7; and
- Class C material (termed as SPAG by Cominco) has a total sulphur content less than 2.9 wt.%, an NP greater than 18 kg $CaCO_3$/t, and an NP/AP greater than 1.7.

The individual sample composition of the trickle leach columns is provided in Appendix G. The characteristics of the composite material determined via static testing is provided in Table 5-20 and the percentile ranking of these parameters in terms of the static sample dataset is presented in Table 5-21. Based on the static testing of the composite material, two of the waste rock trickle leach columns represented Class A material (C-7 and C-8), four columns comprised Class C material (C1, C-2, C-6, and C-9), and three comprised Class B material (C-3 to C-5) (Appendix G; Table 5-20). Consistent with their designation, the Class A waste rock column composites had low NP (<13 kg $CaCO_3$/t), elevated sulphide sulphur content (0.9 to 1.1 wt.%), and NP/AP less than one (0.2 to 0.4) (Table 5-20). They also hosted elevated concentrations of trace elements, typically in the 80th percentile or higher of the static dataset (Table 5-21). The Class B waste rock column composites contained relatively low NP (34 to 41 kg $CaCO_3$/t), with elevated sulphide sulphur levels (1.1 to 2.0 wt.%), and NP/AP between 0.6 and 1.1 (Table 5-20). These column composites also contained elevated concentrations of trace elements, typically present at upper quartile or higher levels relative to the static dataset (Table 5-21). The Class C column composites had high levels of NP (66 to 184 kg $CaCO_3$/t), moderate to elevated levels of sulphide sulphur (0.2 to 1.1 wt.%), and NP/AP greater than two (2.1 to 28) (Table 5-20). Three of the column composites (C1, C-2, and C-9) had lower quartile to median ranges of trace element concentrations relative to the static dataset (Table 5-21). The composite in column C-6 exhibited elevated trace metal content, with percentile ranges from the upper quartile to 90th percentile relative to the static dataset.

Some trickle leach columns were also composed of waste rock that is predominantly from a single geodomain (C-1, C-3, C-4, C-5, C-8 and C-9). These geodomains were selected based on their significant volumetric fraction of the ABM open pit area (e.g., AK RHYv, PY AK RHYv, RHYi, CARB MDS/RHY, MDS) and/or their susceptibility to metal leaching based on static testing (e.g. CARB MDS/RHY, MU PY RHY).

Table 5-20: Composition of Trickle Leach Columns for Selected ABA and Trace Element Parameters

	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
Detection Limit:	**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**0.3**	**0.5**	
Column ID [a]								
C-1	0.82	68.3	0.64	0.03	0.61	19.1	78.5	4.1
C-2	0.74	61.7	0.98	0.03	0.95	29.7	66.2	2.2
C-3	0.35	29.2	1.10	0.02	1.08	33.8	34.1	1.0
C-4	0.50	41.7	1.19	0.03	1.16	36.3	40.8	1.1
C-5	0.32	26.7	1.99	0.02	1.97	61.6	34.3	0.6
C-6	0.72	60.0	1.10	0.02	1.08	33.8	70.5	2.1
C-7	0.05	4.2	1.13	0.02	1.11	34.7	5.6	0.2
C-8	0.10	8.3	0.96	0.02	0.94	29.4	12.9	0.4
C-9	2.37	198	0.23	0.02	0.21	6.6	184	28
	Antimony	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Selenium**	**Uranium**	**Zinc**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
Column ID [a]								
C-1	0.09	0.5	0.23	32.3	19.6	0.3	1.18	42
C-2	0.61	5.8	0.43	25.2	37.9	0.6	1.33	81
C-3	8.29	18.0	5.95	145	268	4.4	5.6	658
C-4	4.79	47.2	3.03	53	185	9.3	3.26	410
C-5	1.51	29.6	2.69	651.7	94.2	5.4	1.71	402
C-6	1.13	165.1	1.6	31.3	114	3.4	2.89	232
C-7	6.56	253.3	3.05	65.8	127	9.1	6.31	382
C-8	5.49	49.6	5.49	30.2	204	3.4	3.04	720
C-9	0.20	4.1	0.29	36.3	17.5	0.6	1.19	74

[a] Red, yellow and green shading denotes predominantly Class A, B, or C waste rock material based on Cominco classifications (NDM, 1996), respectively.

Table 5-21: Percentile Ranking of Selected ABA and Trace Element Parameters in Trickle Leach Columns

Column ID [a]	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
C-1	65%	65%	59%	89%	59%	59%	70%	54%
C-2	62%	62%	74%	89%	74%	74%	59%	40%
C-3	31%	31%	78%	66%	78%	78%	28%	25%
C-4	42%	42%	81%	89%	81%	81%	35%	27%
C-5	29%	29%	92%	66%	93%	93%	28%	17%
C-6	59%	59%	78%	66%	78%	78%	62%	38%
C-7	8%	9%	80%	66%	80%	80%	7%	6%
C-8	14%	14%	74%	66%	74%	74%	14%	14%
C-9	93%	93%	31%	66%	30%	30%	92%	79%
Column ID [a]	**Antimony**	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Selenium**	**Uranium**	**Zinc**
C-1	24%	16%	48%	63%	55%	25%	49%	35%
C-2	59%	50%	72%	55%	70%	45%	53%	64%
C-3	92%	71%	94%	95%	93%	88%	94%	94%
C-4	89%	83%	92%	82%	91%	94%	74%	92%
C-5	74%	78%	92%	99%	84%	91%	59%	92%
C-6	70%	93%	89%	63%	85%	85%	70%	88%
C-7	92%	95%	92%	87%	86%	94%	96%	92%
C-8	90%	84%	94%	61%	92%	85%	71%	94%
C-9	39%	46%	56%	67%	53%	45%	49%	61%

[a] Red, yellow and green shading denotes predominantly Class A, B, or C waste rock material based on Cominco classifications (NDM, 1996), respectively.

Leachate data collected to date for the trickle leach columns are displayed in Appendix H. Those elements of interest from an acid generating and metal leaching perspective are the focus of the discussion presented here; no other elements showed elevated concentrations of particular concern in the kinetic testing leachates.

With the exception of column C-7, the leachate from trickle leach columns collected to date has been circumneutral (pH 7.3 to 7.8) (Figure 5-17). Column C-7, which has the lowest NP (6 kg $CaCO_3$/t) and NP/AP ratio (0.2) of all the waste rock trickle leach columns, displayed a progressive decline in pH, from pH 7.2 in the first few weeks, to pH 5.5 at the latest data point (cycle 39).

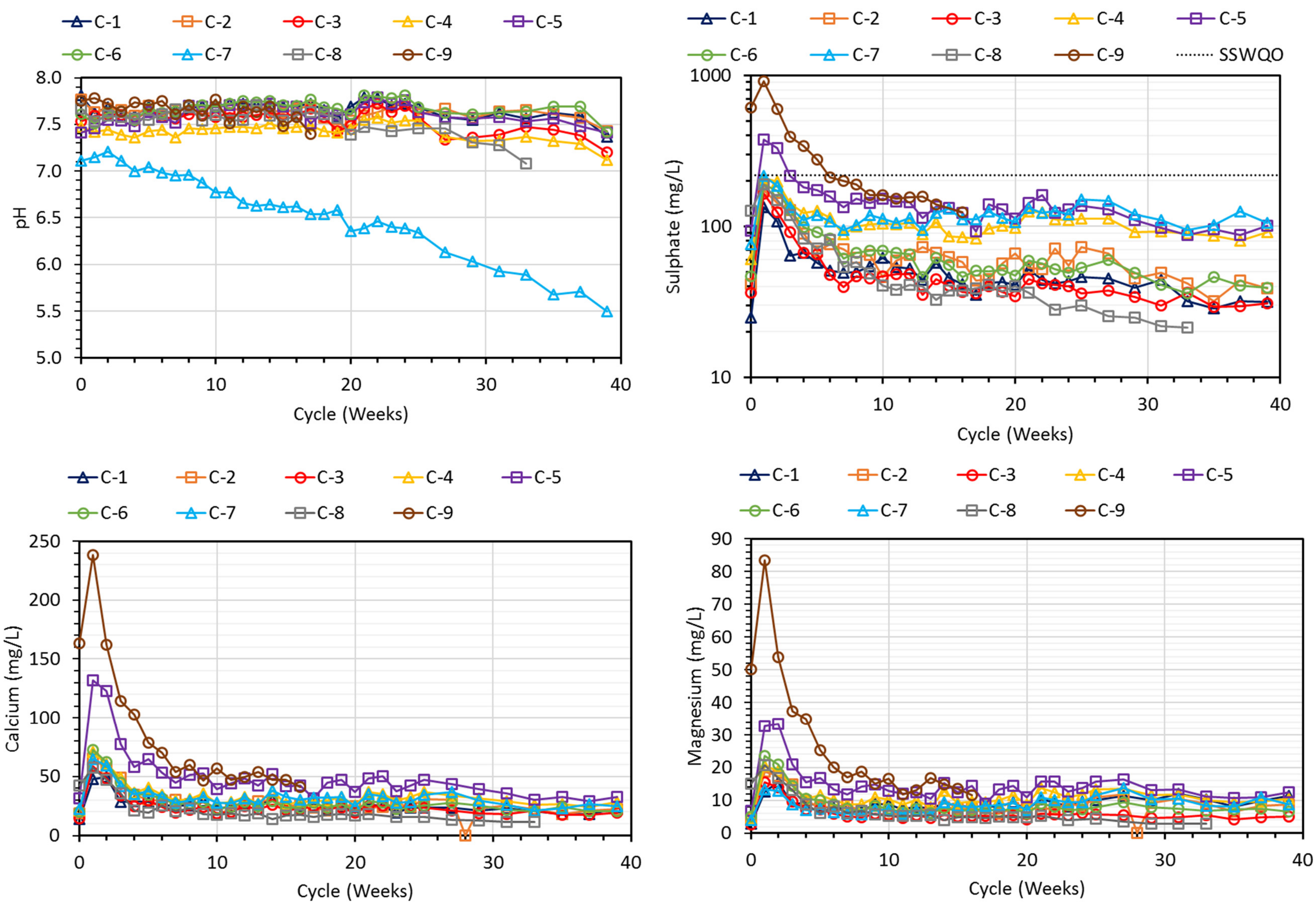
Elevated sulphate concentrations were observed in the first few leaching cycles for all columns as soluble metal sulphate salts were flushed from the columns. Although the sulphate sulphur content of the column composites was similar (0.02 to 0.03 wt.%), different leachate sulphate concentrations were observed across the columns, particularly during the flushing period over the first few weeks. Despite having the lowest total sulphur content of the waste rock trickle leach column composites (0.2 wt.%), column C-9 returned the highest leachate sulphate levels over the first few leaching cycles, peaking at 910 mg/L at cycle two (Figure 5-17). Column C-5, which had the highest total sulphur content (2.0 wt.%) had the next highest peak dissolved sulphate concentrations (375 mg/L). Following the initial rinse out, the leachate sulphate concentrations appear to have stabilized after cycle 10. Columns C-7, C-4, and C-5 have the highest steady-state average sulphate concentration of 88 to 107 mg/L (Table 5-22), whereas columns C-1 to C-3, C-6, and C-8 have lower pseudo steady state sulphate concentrations (25 to 41 mg/L). Calcium and magnesium leachate concentrations mirrored those of sulphate. They were highest for the first few weeks, as fine grained carbonate minerals were washed out of the column, before declining and stabilizing in the majority of columns since cycle 10 (Figure 5-17).

The trace element concentrations in the trickle leach column leachates have been compared to the SSWQO developed for site KZ-9 on Geona Creek in order to highlight elevated concentrations of constituents of interest. Given the larger average particle size, lower flushing rate and lower temperatures that would be expected at a site waste rock Storage Facility, the trace element concentrations observed in the column leachate are likely higher than those that would be observed in the field. As such, the comparison to the SSWQO is for reference purposes only and does not imply compliance or otherwise with the SSWQO or other water quality guidelines.

The majority of columns exhibited peaks in their leachate trace element concentrations in the early stages of the test as the columns were flushed, before declining and stabilizing from approximately cycle 15 (Figure 5-18 and Figure 5-19). Exceptions included antimony, arsenic, and uranium concentrations, which show evidence of continuing diminution in most columns, and column C-7, which shows increasing trace metal concentrations as the testing progresses.

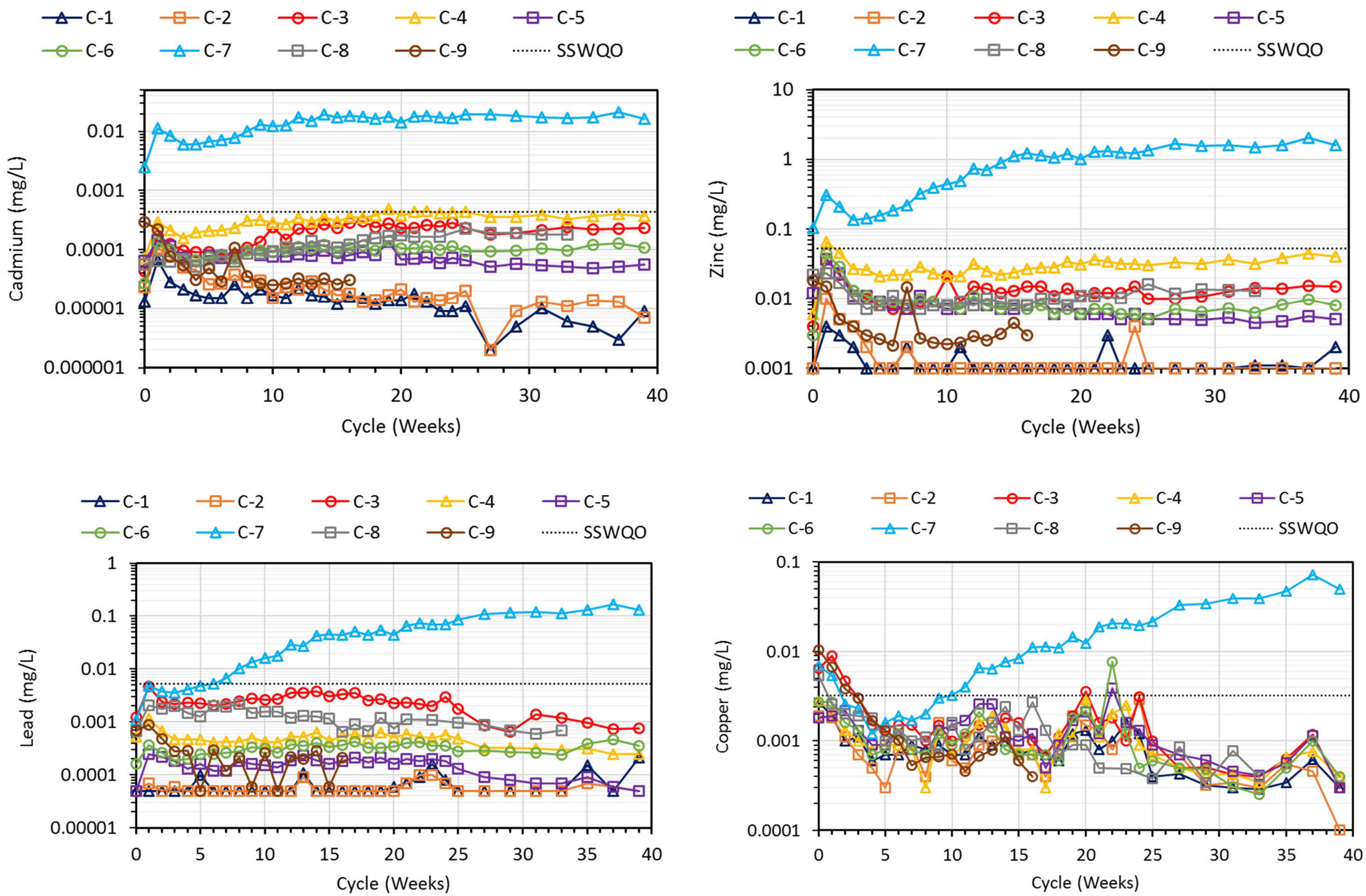
Apart from flushing during the early cycles of the column testing, concentrations of cadmium, zinc, lead, and copper in the column leachates were below their respective SSWQO (Figure 5-18), often by an order of magnitude or more. The generally low concentrations observed for these metals is consistent with the infrequent SSWQO exceedances observed in the SFE work (Section 5.1.1.5).

Columns C-1 and C-2 returned the lowest metal concentrations that were an order of magnitude or more below the SSWQO (Figure 5-18, Table 5-22), and often below the detection limit (e.g., zinc and lead). The other two Class C columns (C-6 and C-9) also had low metal concentrations below their respective SSWQO (Figure 5-18). The Class B columns (C-3 to C-5), typically exhibited higher trace metal release rates, with the pseudo steady state cadmium, zinc and lead concentrations observed for column C-3 and C-4 slightly exceeding or just below the SSWQO for cadmium, zinc, and lead (Figure 5-18, Table 5-22). The class A column, C-7, showed by far the highest metal release rates, with leachate cadmium, zinc, lead and copper concentrations that were all over an order of magnitude higher than their respective SSWQO (Figure 5-18, Table 5-22). The concentrations of these four metals have increased over time in tandem with the declining pH of the column leachate.



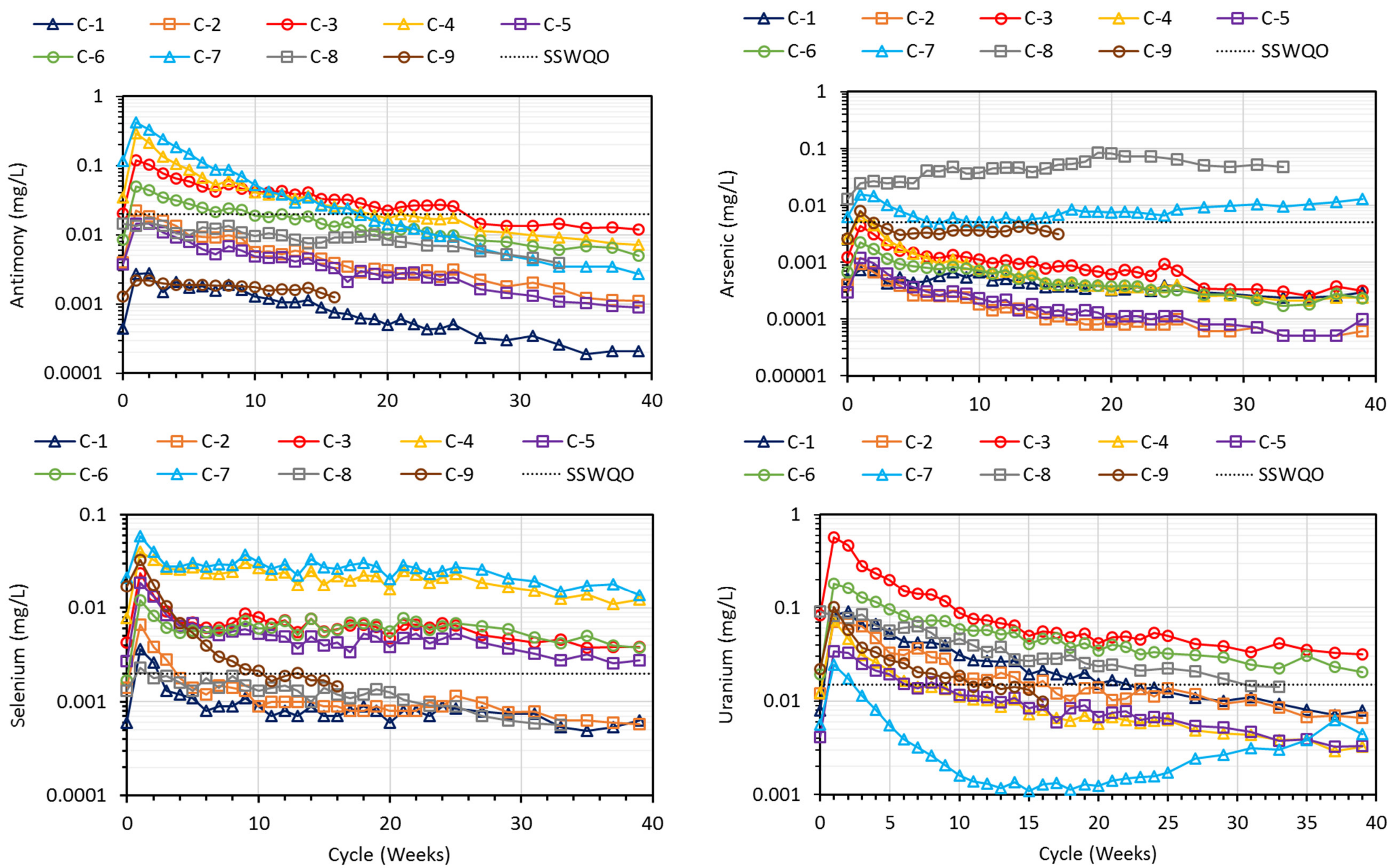
The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-17: Trends in pH, Sulphate, Calcium, and Magnesium Concentrations in Leachate from Waste Rock Trickle Leach Columns



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-18: Trends in Cadmium, Zinc, Lead, and Copper Concentrations in Leachate from Waste Rock Trickle Leach Columns



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-19: Trends in Antimony, Arsenic, Selenium, and Uranium Concentrations in Leachate from Waste Rock Trickle Leach Columns

Table 5-22: Pseudo Steady State Concentrations for Selected Parameters in Leachate from Waste Rock Trickle Leach Columns

Column ID	Constituent [a]																	
	pH	Total Alkalinity	SO_4	Hardness ($CaCO_3$)	Al	Sb	As	Cd	Ca	Cu	Fe	Pb	Mg	Mn	Ni	Se	U	Zn
		mg $CaCO_3$/L	mg/L	mg/L	mg/L													
C-1	7.6	58.6	34	94	0.0218	0.0002	0.00025	0.00001	20.6	0.0004	0.0054	0.00010	10.3	0.002	0.00006	0.0006	0.009	0.001
C-2	7.6	52.2	41	90	0.0258	0.0014	0.00006	0.00001	22.0	0.0004	0.0020	0.00006	8.7	0.032	0.00007	0.0006	0.008	0.001
C-3	7.4	36.7	31	67	0.0170	0.013	0.00031	0.00023	18.8	0.0006	0.0020	0.0010	4.9	0.052	0.00015	**0.0040**	**0.035**	0.014
C-4	7.3	28.4	88	110	0.0066	0.008	0.00023	**0.00037**	26.9	0.0005	0.0024	0.00028	10.3	0.10	0.0025	**0.013**	0.0037	0.038
C-5	7.5	39.1	94	128	0.0122	0.0011	0.00006	0.00005	32.0	0.0006	0.0022	0.00007	11.7	0.062	0.00020	**0.0029**	0.0038	0.0050
C-6	7.6	45.8	41	83	0.0192	0.006	0.00022	0.00011	21.5	0.0005	0.0020	0.00034	7.1	0.052	0.00015	**0.0044**	**0.024**	0.0079
C-7	5.7	2.4	107	98	0.022	0.003	**0.0109**	**0.018**	24.5	**0.049**	0.154	**0.132**	9.3	1.03	0.036	**0.017**	0.004	**1.67**
C-8	7.3	27.7	25	46	0.0238	0.0053	**0.0522**	0.00019	13.0	0.0006	0.0020	0.00077	3.3	0.047	0.00019	0.0007	**0.018**	0.0136
SSWQO at KZ-9			309		0.193	0.02	0.005	0.0003		0.0032	2.11	0.0051		1.2	0.126	0.002	0.015	0.048

[a] Steady state concentrations calculated from average of measurements from cycle 30 onwards for C-1 through C-7 and 24 onwards for C-8; **Bold** values exceed the SSWQO

Table 5-23: Pseudo Steady State Release Rates for Selected Parameters in Leachate from Waste Rock Trickle Leach Columns

Column ID	Constituent [a]																	
	pH	Total Alkalinity	SO_4	Hardness ($CaCO_3$)	Al	Sb	As	Cd	Ca	Cu	Fe	Pb	Mg	Mn	Ni	Se	U	Zn
	mg/kg/wk																	
C-1	7.6	2.1	1.2	3.4	0.00080	0.0000089	0.0000093	0.00000024	0.75	0.000014	0.00020	0.0000037	0.38	0.000074	0.0000023	0.000022	0.00032	0.000045
C-2	7.6	1.9	1.5	3.3	0.00094	0.000052	0.0000020	0.00000042	0.80	0.000013	0.000073	0.0000020	0.32	0.0012	0.0000026	0.000023	0.00029	0.000036
C-3	7.4	1.3	1.1	2.5	0.00062	0.00048	0.000011	0.0000083	0.69	0.000021	0.000073	0.000037	0.18	0.0019	0.0000053	0.00015	0.0013	0.00052
C-4	7.3	1.0	3.2	4.0	0.00024	0.00030	0.0000082	0.000013	0.97	0.000019	0.000087	0.000010	0.37	0.0036	0.000089	0.00047	0.00013	0.0014
C-5	7.5	1.4	3.4	4.7	0.00045	0.000038	0.0000023	0.0000019	1.2	0.000021	0.000080	0.0000025	0.43	0.0023	0.0000074	0.00011	0.00014	0.00018
C-6	7.6	1.7	1.5	3.0	0.00070	0.00023	0.0000079	0.0000041	0.78	0.000018	0.000073	0.000012	0.26	0.0019	0.0000055	0.00016	0.00088	0.00029
C-7	5.7	0.087	3.9	3.6	0.00080	0.00013	0.00040	0.00065	0.90	0.0018	0.0056	0.0048	0.34	0.038	0.0013	0.00061	0.00015	0.061
C-8	7.3	1.0	0.90	1.7	0.00087	0.00019	0.0019	0.0000071	0.48	0.000020	0.000073	0.000028	0.12	0.0017	0.0000070	0.000025	0.00065	0.00050

[a] Steady state concentrations calculated from average of measurements from cycle 30 onwards for C-1 through C-7 and 24 onwards for C-8

The leaching behaviour of antimony, arsenic, selenium, and uranium (Figure 5-19) showed marked differences with the trends observed for cadmium, zinc, lead, and copper (Figure 5-18), although the Class C columns C1 and C-2 typically displayed low levels of antimony, arsenic, and selenium leaching with pseudo steady state concentrations that were below their respective SSWQO (Table 5-22).

First flush leachate antimony concentrations were highest for columns C-7, C-4, and C-3, which all showed concentrations (0.1 to 0.42 mg/L) that were markedly higher than the SSWQO (0.02 mg/L). Following the early flushing, the antimony concentrations gradually declined for all columns and continue to be decreasing at the time of writing (cycle 39) such that the leachate from the past seven cycles has been below the SSWQO for all columns (Figure 5-19). Leachate antimony concentrations showed a moderate positive correlation with sulphate levels for the majority of columns (Figure 5-20), suggesting that its release was linked to sulphide oxidation.

Following a spike in leachate arsenic concentrations in the first cycle, the majority of columns showed a declining trend such that the arsenic concentrations were well below the SSWQO (0.005 mg/L). The Class A columns C-7 and C-8 were the exception. Column C-7 leachate arsenic concentrations stabilized marginally above the SSWQO up until cycle 24, after which concentrations appear to be increasing gradually reaching 0.013 mg/L at the time of writing (cycle 39). Column C-8 arsenic concentrations increased following the initial flush and are an order of magnitude higher than the SSWQO (Table 5-22). The SFE data suggested that bulk arsenic levels were moderately correlated with SFE leachable arsenic (Figure 5-13). Although the arsenic content of the C-8 composite (50 ppm) is elevated relative to the static dataset (84^{th} percentile), higher arsenic concentrations are present in the composite material in columns C-7 and C-6 (250 ppm and 165 ppm, respectively), whereas column C-4 has a comparable arsenic content (47 ppm) (Table 5-20). Although column C-7 shows elevated pseudo steady state arsenic concentrations relative to the SSWQO, this is likely related to the progressively lower pH conditions present in its leachate.

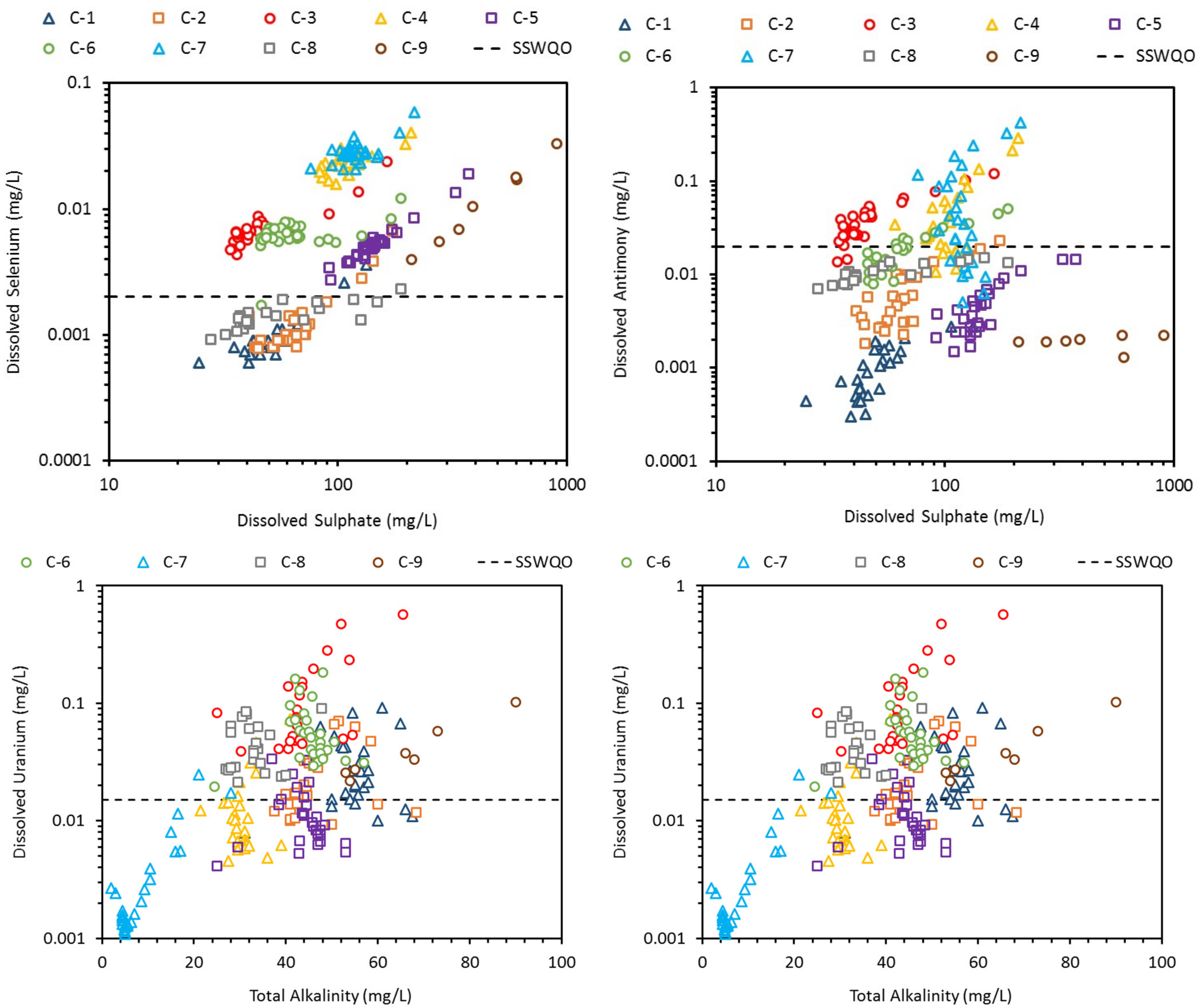
Following the initial spike for the first rinse cycle, leachate selenium concentrations declined, largely stabilized following cycle 10 and continued declining after cycle 24 (Figure 5-19). Three distinct groupings in terms of pseudo steady state selenium concentrations are observed, largely delineated by the bulk selenium content of the column composite material. Columns C-1, C-2, and C-8 all show similar pseudo steady state selenium concentrations (0.0006 to 0.0007 mg/L) below the SSWQO (0.002 mg/L). Both C-1 and C-2 have the lowest selenium content (0.3 to 0.6 ppm) and constitute the 25^{th} and 45^{th} percentile of the static dataset, respectively (Table 5-20 and Table 5-21). Columns C-3, C-5, and C-6 displayed intermediate selenium leaching behaviour, with pseudo steady state concentrations of 0.0029 to 0.0044 mg/L (Table 5-22), approximately two to three times higher than the SSWQO. The highest pseudo steady state selenium concentrations were observed for columns C-4 and C-7 (0.013 and 0.017 mg/L, respectively), which were an order of magnitude higher than the SSWQO. The composite material in these two columns also has the highest selenium content (9.1 to 9.3 ppm), which is consistent with the SFE data which also exhibited a positive correlation between bulk selenium content and SFE leachable selenium concentrations (Figure 5-13). The trickle leachate selenium concentrations largely showed a positive correlation with sulphate levels (Figure 5-20), suggesting that the selenium release is linked to sulphide oxidation, which corroborates electron microscopic observations of selenium association with metal sulphide phases (BMC, 2015 and references therein).

First flush leachate uranium concentrations exceeded the SSWQO (0.015 mg/L) for all columns, with the cycle one leachate from columns C-3 and C-6 an order of magnitude higher (Figure 5-19). The leachate uranium concentrations have declined over the course of the testing, and still appear to be decreasing at the time of writing such that only the leachate from columns C-3 and C-6 (average concentration since cycle 25 of 0.038 and 0.027 mg/L, respectively) are above the SSWQO at the most recent cycle. In contrast to other elements, the uranium concentration was lowest in the leachate from column C-7. However, an increasing trend in uranium concentrations from C-7 was observed after cycle 20 and uranium concentrations are now greater than that of C-4 and C-5 at the most recent cycle (0.0044 mg/L), but still an order of magnitude lower than the KZ-9 SSWQO. No strong relationship was observed between the leachate uranium concentration and the bulk uranium content, sulphur content, or waste class category of the column composite material. However, leachate uranium concentrations did show a positively correlation with sulphate, and a moderate link with alkalinity levels (Figure 5-20). The mineralogical association of uranium in the ABM open pit host rocks is not well constrained, however, the correlations observed may suggest that:

1. Uranium associated with metal sulphide is released during sulphide oxidation; and/or

2. Alkalinity, which is largely in the form of the bicarbonate anion in the circumneutral leachate pH and is supplied via the dissolution of carbonate minerals due to sulphide oxidation, promotes the leaching of uranium via carbonato-complexation. Indeed, bicarbonate leaches are commonly used to evaluate uranium mobility in geologic materials (Zhou and Gu, 2005).

The gradual decline in leachate uranium concentrations observed for most columns suggests that the bicarbonate-leachable uranium component declines during rinsing such that uranium mobilization is much more limited in the later stages of the kinetic testing.



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-20: Relationship Between Selenium and Sulphate (top left), Antimony and Sulphate (top right), Uranium and Sulphate (bottom left), and Uranium and Alkalinity (bottom right) in Leachate from Waste Rock Trickle Leach Columns

5.2.1.2 ***Humidity Cells***

Two waste rock-bearing humidity cells were initiated as part of the 2016 AEG kinetic testing. Cell HC-1 was composed of the same composite material present in trickle leach column C-5. Cell HC-2 comprised rock from the same Cominco drill core interval as the material used in Cominco humidity cell II-15 (BMC sample ID B00264207; CARB MDS/RHY geodomain). These materials were selected to provide a comparison with (i) trace element release rates from the trickle leach column; and (ii) major constituent (sulphate, calcium, and magnesium) concentrations and release rates observed in the Cominco humidity cell. The composition of the material in the two waste rock humidity cells is provided in Table 5-24. The total sulphur (1.18 wt.%), NP (47 kg CaCO3/t), and NP/AP (1.3) for the HC-2 sample was comparable to that of the Cominco II-15 (total sulphur = 1.06 wt.%, NP = 40 kg $CaCO_3$/t, NP/AP = 1.2; Table 5-25); both materials were sampled from the same geodomain drill core interval.

Table 5-24: Composition and Percentile Ranking for Selected ABA and Trace Element Parameters in Humidity Cells

	Composition of Parameters of Interest							
	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
Detection Limit:	**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**0.3**	**0.5**	
Column ID								
HC-1	0.32	26.7	1.99	0.02	1.97	61.6	34.3	0.6
HC-2	0.43	35.8	1.18	0.01	1.18	36.9	47	1.3
	Antimony	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Selenium**	**Uranium**	**Zinc**
	ppm	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
Detection Limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
Column ID								
HC-1	1.51	29.6	2.69	651.7	94.2	5.4	1.71	402
HC-2	2.27	24.7	0.58	16.2	73	1.8	3.69	189
	Percentile Ranking Relative to Static Dataset							
Column ID	**Total Inorganic Carbon**	**Carbonate NP**	**Total Sulphur**	**Sulphate Sulphur**	**Sulphide Sulphur**	**AP**	**NP**	**NP/AP**
HC-1	29%	29%	92%	66%	93%	93%	28%	17%
HC-2	37%	37%	81%	0%	81%	81%	43%	29%
	Antimony	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Selenium**	**Uranium**	**Zinc**
HC-1	74%	78%	92%	99%	84%	91%	59%	92%
HC-2	81%	76%	80%	47%	81%	74%	78%	85%

The full dataset collected to date for the AEG humidity cells is presented in Appendix I. Consistent with the reporting for the Cominco waste rock humidity cells (NDM, 1996), the two AEG 2016 humidity cells have exhibited circumneutral pH throughout their operation to date (Figure 5-21). Sulphate, calcium, and magnesium concentrations peaked in the first few rinse cycles as soluble sulphates and carbonate fines were rinsed out of the cell, before appearing to stabilize after cycle ten.

The controlled environment of humidity cells enables the measurement of primary reaction rates and for the calculation of depletion times for acid generating, acid neutralizing, and metal leaching minerals. Humidity cells permit the measurement of primary reaction rates such as sulphide oxidation, which is the major source of acid production. Although NP can be consumed by a variety of different pathways, the dominant route is via neutralization of acid produced from sulphide oxidation as shown in the two equations below:

pH <6.3: $FeS_2 + 3.75O_2 + 3.5H_2O + 2(Ca,Mg)CO_3 \rightarrow Fe(OH)_3 + 2SO_4^{2-} + 2H_2CO_3^0 + 2[Ca^{2+},Mg^{2+}]$

10.3>pH >6.3: $FeS_2 + 3.75O_2 + 3.5H_2O + 4(Ca,Mg)CO_3 \rightarrow Fe(OH)_3 + 2SO_4^{2-} + 4HCO_3^- + 4[Ca^{2+},Mg^{2+}]$

Based on these equations, the rate of NP consumption from sulphide oxidation can be calculated using the carbonate molar ratio (CMR), which is the ratio of the summed molar release rates of calcium and magnesium against the molar production rate of sulphate in humidity cell leachate. This assumes that sulphate, calcium and magnesium are not lost from solution as secondary precipitates (which is unlikely in a well flushed humidity cell), sulphate is derived from sulphide oxidation, and the major source of calcium and magnesium is from carbonate minerals; the latter account for the bulk of NP in ABM open pit area waste rock (Figure 5-4).

The idealized reaction pathway of carbonate dissolution by sulphide oxidation is pH dependent. At pH <6.3, neutralization of the acid produced from pyrite (FeS_2) oxidation releases one mole of calcium for each mole if sulphate produced, resulting in a 1:1 CMR. At circumneutral pH, neutralization of acid produced by sulphide oxidation requires twice the molar amount of carbonate than at pH<6.3, producing 2 moles of calcium per mole of sulphate resulting in a CMR of 2. Therefore, depending on the pH, the CMR should range between 1 and 2 assuming that the calcium and magnesium released to solution are due to carbonate dissolution induced by the acid produced from sulphide oxidation.

The average CMR, calculated for the last two months of data from both the Cominco and AEG waste rock humidity cells, generally ranged between 1 and 2 (Table 5-25), indicating that sulphate, calcium, and magnesium release was largely related to sulphide mineral oxidation and subsequent carbonate mineral neutralization. As such, the AP and NP depletion rates were calculated based on the average molar loss of sulphate and calcium plus magnesium, respectively, over the past two months of data from the AEG and Cominco humidity cells. These were applied to the measured AP and NP content of each cell to determine the time until exhaustion of AP and NP in each cell. Two exceptions to the NP depletion calculation were Cominco cells II-11 and II-17, which both had an average CMR that was substantially greater than 2 (Table 5-25). Such higher CMR is suggestive of enhanced carbonate dissolution by the deionized water (pH ~5.6) used to rinse the cell. In order to calculate the NP depletion rate from sulphide oxidation alone for both of these cells, the sulphate production rate was multiplied by 2 (i.e., the theoretical CMR for the circumneutral pH range observed in the humidity cell leachate):

Theoretical NP consumption = 2 * [SO_4 production (mg/kg/wk) * 100.09/96.06]

The calculated times to AP and NP depletion and associated likelihood of acid generation are presented in Table 5-25. The AP and NP calculated depletion time ranges for waste rock material were 46 to 337 years and 22 to 319 years, respectively. NP is calculated to be exhausted before AP in humidity cells with NP/AP ≤1.8, indicating that these materials would be likely to generate acid in the long term.

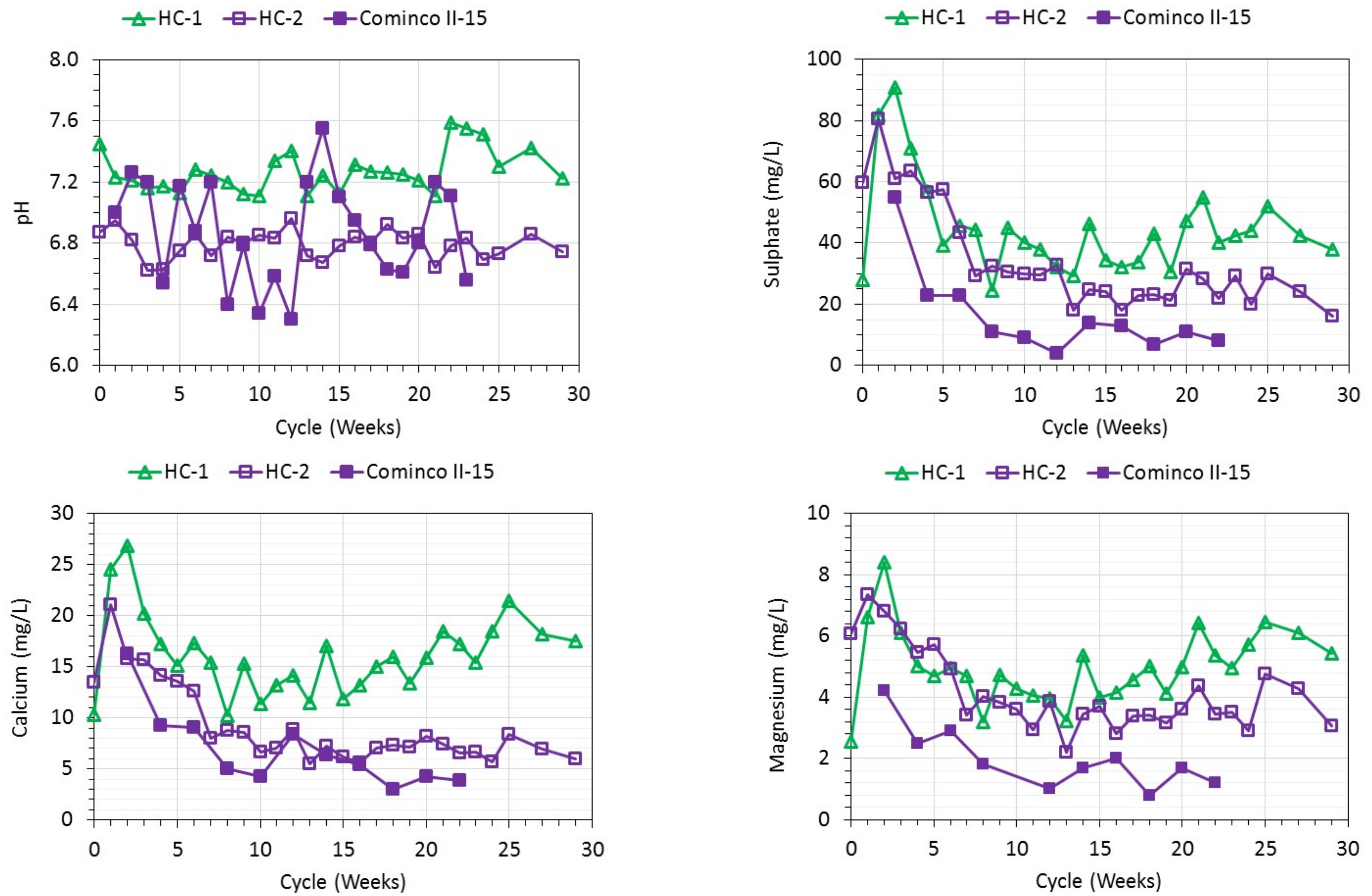


Figure 5-21: Trends in pH, Sulphate, Calcium, and Magnesium Concentrations in Leachate from AEG and Cominco II-15 Waste Rock Humidity Cells

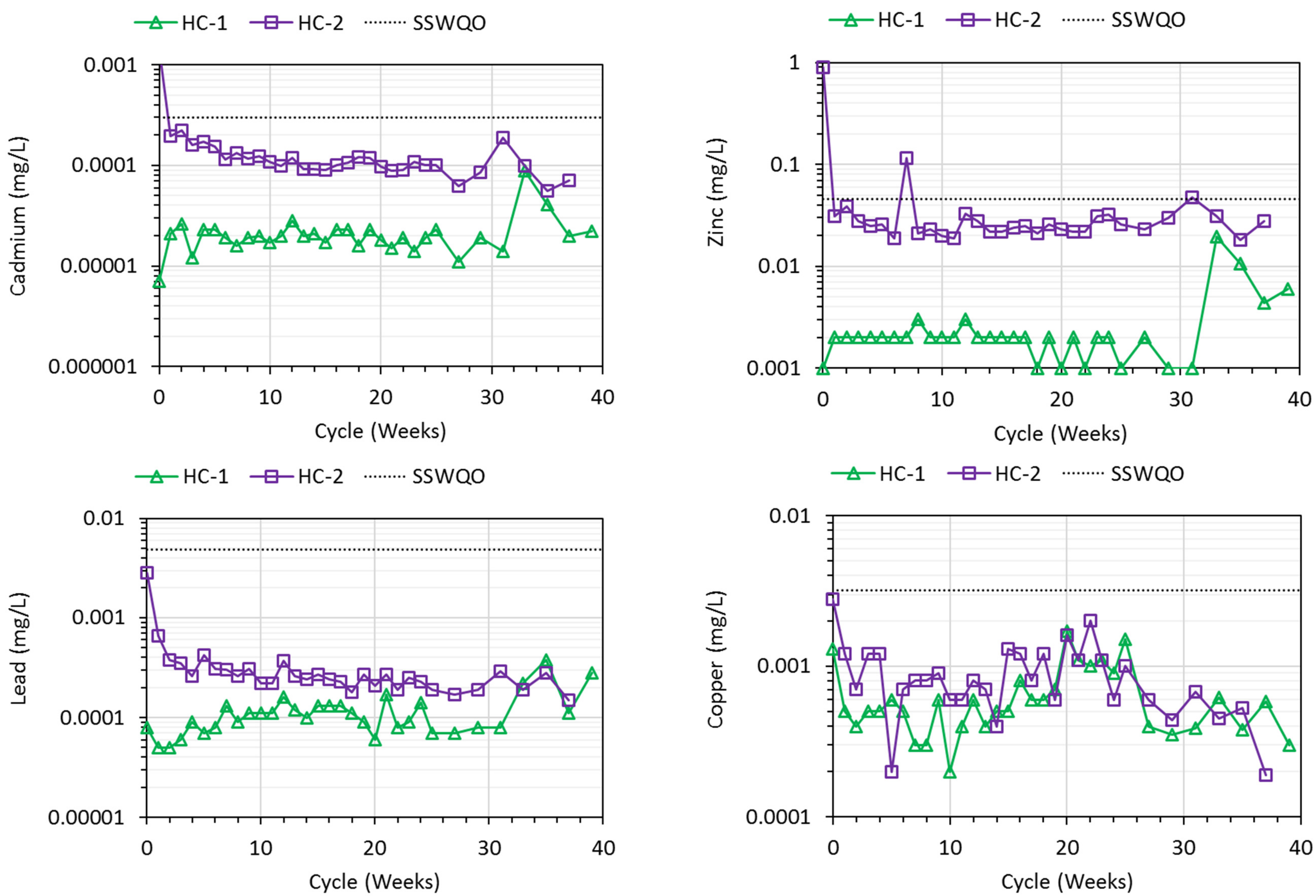
Table 5-25: Depletion Rate Calculations for Cominco and AEG Waste Rock Humidity Cells

Cominco Cell ID	AEG Cell ID	Geodomain	Total Sulphur	AP	NP	NP/AP	Sulphur Depletion	NP Depletion	ARD Classification	CMR [a]
			wt.%	kg $CaCO_3$/t			years			
II-18		PY CL RHY	1.44	45	4	0.1	337	22	PAG	1.44
I-02		Unknown	1.12	35	18	0.5	82	27	PAG	1.60
	HC-1	PY AK RHYv	1.99	62	34	0.6	53	19	PAG	1.48
II-14		PY AK RHYv	1.67	62	44	0.7	200	76	PAG	2.15
II-09		PY AK RHYv	1.77	55	48	0.9	174	93	PAG	1.62
II-12		Unknown	4.29	134	138	1.0	384	290	PAG	1.42
II-08		PY AK RHYv	1.80	56	61	1.1	108	69	PAG	1.72
II-15		CARB MDS/RHY	1.06	33	40	1.2	144	110	PAG	1.59
II-05		AK RHYc	1.03	32	39	1.2	123	67	PAG	2.15
	HC-2	CARB MDS/RHY	1.18	37	47	1.3	56	55	PAG	1.31
II-10		Unknown	0.95	30	41	1.4	128	89	PAG	2.17
I-04		Unknown	0.45	14	23	1.6	101	80	PAG	2.08
II-11		PY AK RHYv	0.76	24	43	1.8	124	112	PAG	**2.35**
II-13		AK RHYc	0.76	24	49	2.0	110	131	non-PAG	1.84
I-03		Unknown	1.35	42	88	2.1	46	77	non-PAG	1.25
II-07		AK RHYv	0.96	30	64	2.1	87	117	non-PAG	1.61
II-16		MU PY RHY	1.62	51	109	2.1	174	212	non-PAG	1.93
II-06		MU PY RHY	0.90	28	86	3.1	85	137	non-PAG	1.91
II-17		CA CL MAF	0.52	16	129	8.1	80	319	non-PAG	**2.63**

[a] Carbonate molar ratio (CMR) calculated from average of last 2 months of cell data; bolded values indicate CMR greater than 2.2

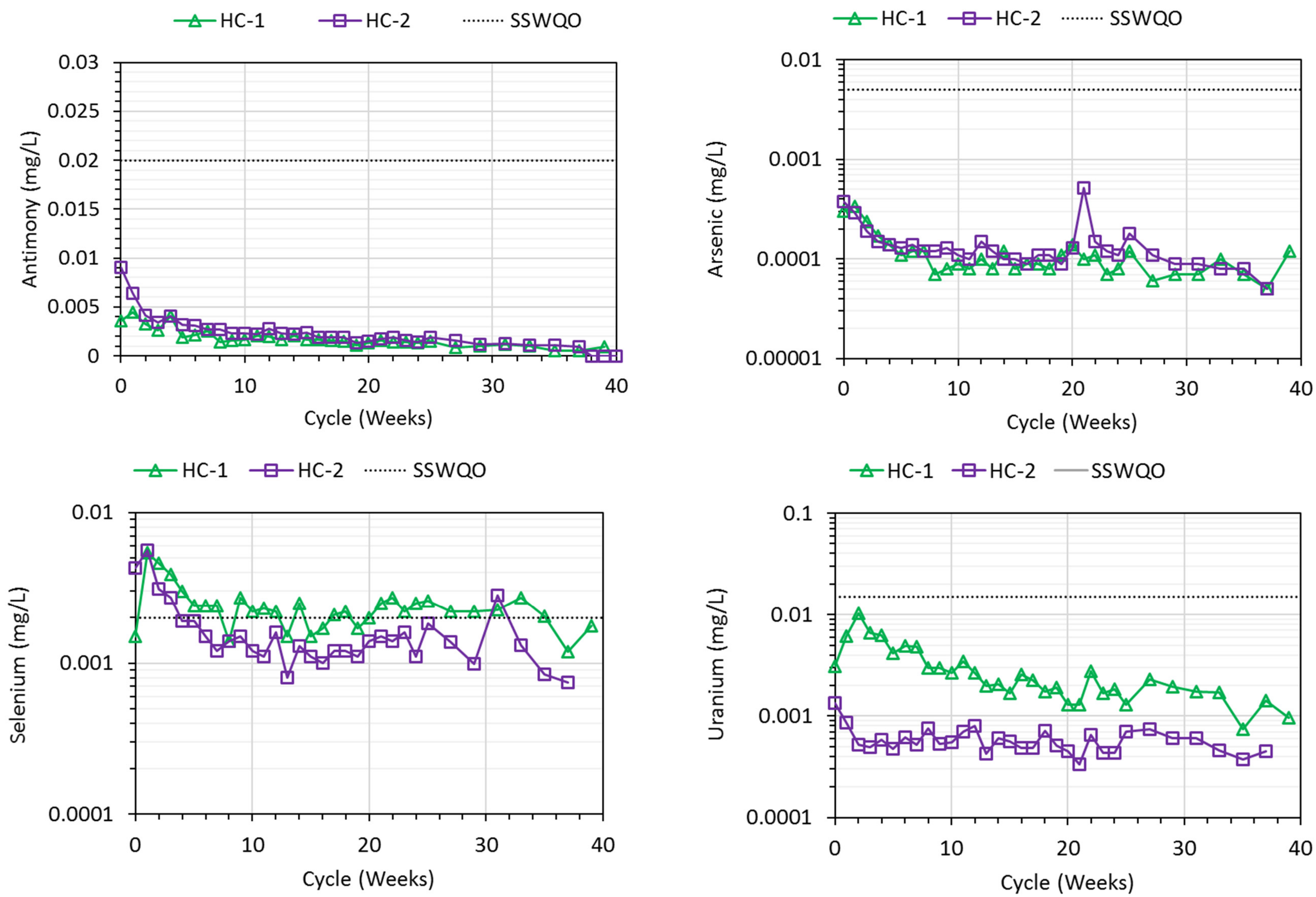
The trace element concentrations in the humidity cell leachates have been compared to the SSWQO developed for site KZ-9 on Geona Creek in order to highlight elevated concentrations of constituents of interest. Given the much larger average particle size, lower flushing rate and lower temperatures that would be expected at a site waste rock Storage Facility, the trace element concentrations observed in the humidity cell leachate are likely higher than those that would be observed in the field. As such, the comparison to the SSWQO is for reference purposes only and does not imply compliance or otherwise with the SSWQO or other water quality guidelines.

The highest trace element concentrations were typically observed in the first few weeks of operation in both AEG humidity cells (Figure 5-22 and Figure 5-23). Following this flushing of soluble elements, the concentrations of most constituents of interest in both humidity cells appeared to stabilize from week 10 onwards and were below their respective SSWQO, with the exception of selenium in cell HC-1, which has oscillated around the SSWQO since week 5 (Figure 5-23). Due to the poor detection limits, no comparison between trace element concentrations and/or release rates from the AEG HC-2 and Cominco II-15 humidity cells can be made. Although the pseudo steady state leachate concentrations in humidity cell C-1 (Table 5-26) were generally much lower than those in its comparator trickle leach column C-5 (Table 5-22), the release rates (mg/kg/wk) were approximately 5 times higher for major constituents (sulphate, calcium, and magnesium), and between 3 and 11 times higher for trace elements of interest (Table 5-23 and Table 5-27). This reflects the more fully flushed nature of the humidity cell, which limits the accumulation of secondary weathering products.



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-22: Trends in Cadmium, Zinc, Lead, and Copper Concentrations in Leachate from AEG Waste Rock Humidity Cells



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-23: Trends in Antimony, Arsenic, Selenium, and Uranium Concentrations in Leachate from AEG Waste Rock Humidity Cells

Table 5-26: Pseudo Steady State Concentrations for Selected Parameters in Leachate from AEG Waste Rock Humidity Cells

	Constituent [a]																	
Column ID	pH	Total Alkalinity	SO_4	Hardness ($CaCO_3$)	Al	Sb	As	Cd	Ca	Cu	Fe	Pb	Mg	Mn	Ni	Se	U	Zn
		mg $CaCO_3$/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
HC-1	7.2	27.6	33	63	0.0262	0.0008	0.00008	0.00004	16.5	0.0005	0.0020	0.00021	5.4	0.037	0.00023	0.0020	0.0013	0.0084
HC-2	6.5	8.4	141	22	0.0024	0.0009	0.00006	0.00008	4.6	0.0004	0.0018	0.00018	2.6	0.023	0.00014	0.0011	0.0004	0.025
SSWQO at KZ-9			309		0.193	0.02	0.005	0.0003		0.0032	2.11	0.0051		1.2	0.126	0.002	0.015	0.048

[a] Steady state concentrations calculated from average of measurements from cycle 30 onwards; **Bold** values exceed the SSWQO

Table 5-27: Pseudo Steady State Release Rates for Selected Parameters in Leachate from AEG Waste Rock Humidity Cells

	Constituent [a]																	
Column ID	pH	Total Alkalinity	SO_4	Hardness ($CaCO_3$)	Al	Sb	As	Cd	Ca	Cu	Fe	Pb	Mg	Mn	Ni	Se	U	Zn
		mg/kg/wk																
HC-1	7.2	13	16	31	0.013	0.00040	0.000040	0.000018	8.1	0.00022	0.00097	0.00010	2.6	0.018	0.00011	0.00097	0.00064	0.0041
HC-2	6.5	4.1	68	11	0.0012	0.00043	0.000029	0.000040	2.2	0.00018	0.00088	0.000089	1.3	0.011	0.000069	0.00056	0.00018	0.012

[a] Steady state concentrations calculated from average of measurements from cycle 30 onwards

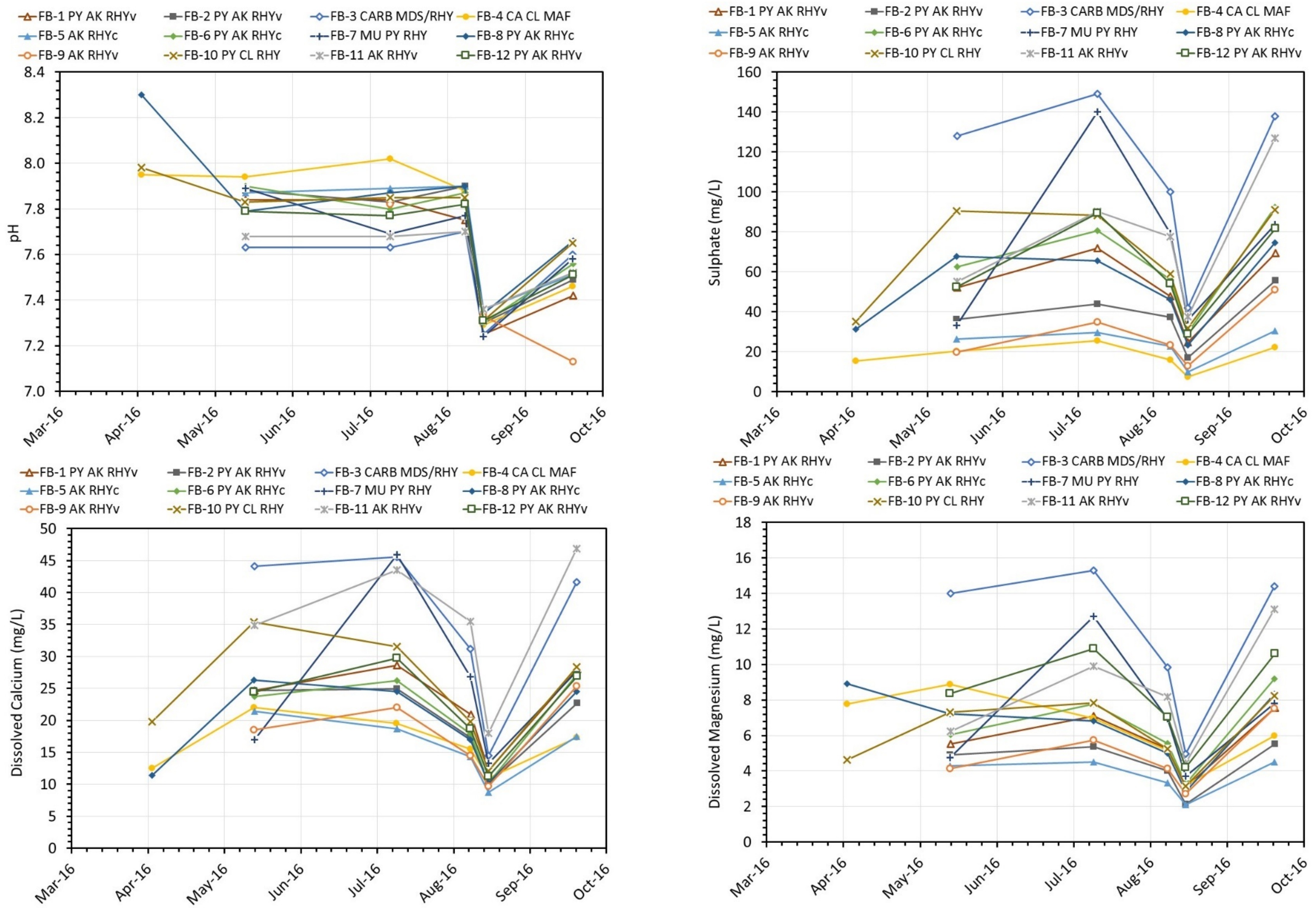
5.2.1.3 *Field Barrels*

Twelve field barrels were established at site in late 2015 and approximately six months of leachate data (April/May to October, 2016) are available to date. Each field barrel was filled with approximately 260 kg of drill core predominantly collected from a single geodomain. The trends in leachate chemistry for selected parameters of interest are presented in Figure 5-24 to Figure 5-26. The full dataset collected to date for the field barrels is presented in Appendix J.

Similar to the laboratory-based kinetic testing data, all of the field barrel leachate samples were circumneutral to mildly alkaline (pH 7.1 to 8.3). Sulphate concentrations ranged between 7 and 149 mg/L (Figure 5-24). The leachate from the CARB MDS/RHY (FB-3), MU PY RHY (FB-7) and PY CL RHY (FB-10) barrels exhibited the highest sulphate concentrations consistent with the static testing dataset which indicated that these three geodomains typically had higher sulphide sulphur content, and lower NP/AP ratios than the other geodomains (Section 5.1.1.2). The leachate samples from the AK RHYc (FB-5), AK RHYv (FB-9), and CA CL MAF (FB-4) field barrels had the lowest sulphate levels (7 to 51 mg/L), in line with the relatively low sulphide sulphur and high NP/AP ratios that characterize these three geodomains (Section 5.1.1.2).

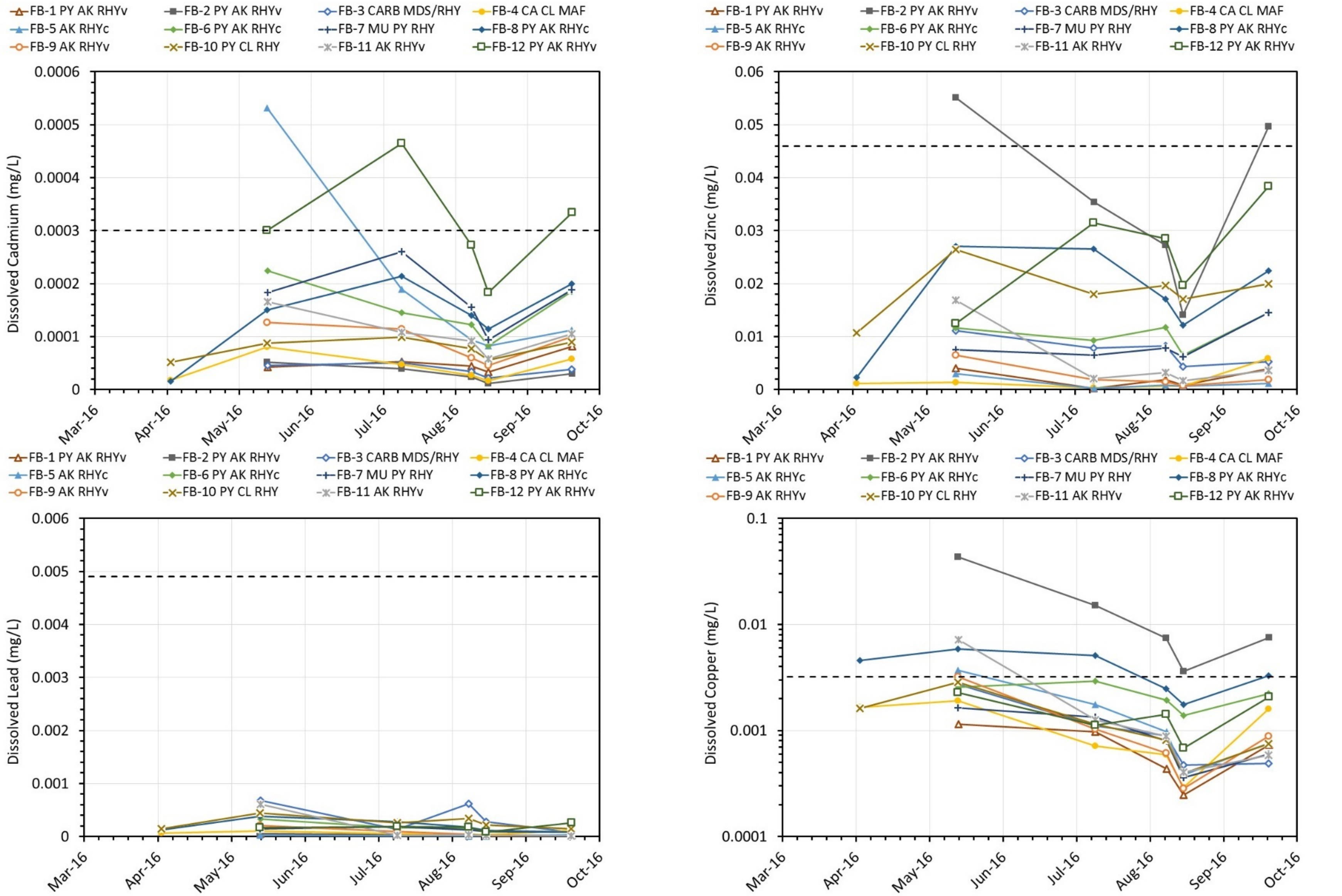
The field barrel leachate concentration of both calcium and magnesium showed a positive correlation with sulphate, suggestive of their release via the dissolution of carbonate minerals during neutralization of acid released by sulphide oxidation. The average CMR in the leachate from all but three field barrels was between 1 and 2, which also indicates calcium and magnesium release was related to sulphide oxidation. Three field barrels had an average CMR greater than 2 (FB-5 AK RHYc, FB-6 AK RHYv, and FB-4 CA CL MAF), which suggests that calcium and magnesium release was not strongly influenced by sulphide oxidation. These field barrels had the lowest dissolved sulphate concentrations, and the geodomains that dominate their waste rock composition are demonstrated to have low sulphide sulphur and relatively high NP content, with associated elevated NP/AP ratios.

The trace element concentrations in the field barrel leachates have been compared to the SSWQO developed for site KZ-9 on Geona Creek in order to highlight elevated concentrations of constituents of interest. This comparison to the SSWQO is for reference purposes only and does not imply compliance or otherwise with the SSWQO or other water quality guidelines. Relatively low levels of cadmium, zinc, lead, and copper leaching were observed in the majority of field barrels (Figure 5-25) over the six months of data collected to date. Only sporadic leachate samples from PY AK RHYv-bearing field barrels exhibited elevated concentrations of cadmium (FB-12) and zinc (FB-2), whereas all leachate samples had lead concentrations well below the SSWQO. Dissolved copper concentrations were consistently above the SSWQO (0.0032 mg/L) in leachate from FB-2 (PY AK RHYv; 0.0035 to 0.043 mg/L), although the concentrations appear to be on a declining trend (Figure 5-25) Copper levels in the leachate from FB-8 (PY AK RHYc; 0.0018 to 0.0059 mg/L) have also oscillated about the SSWQO.



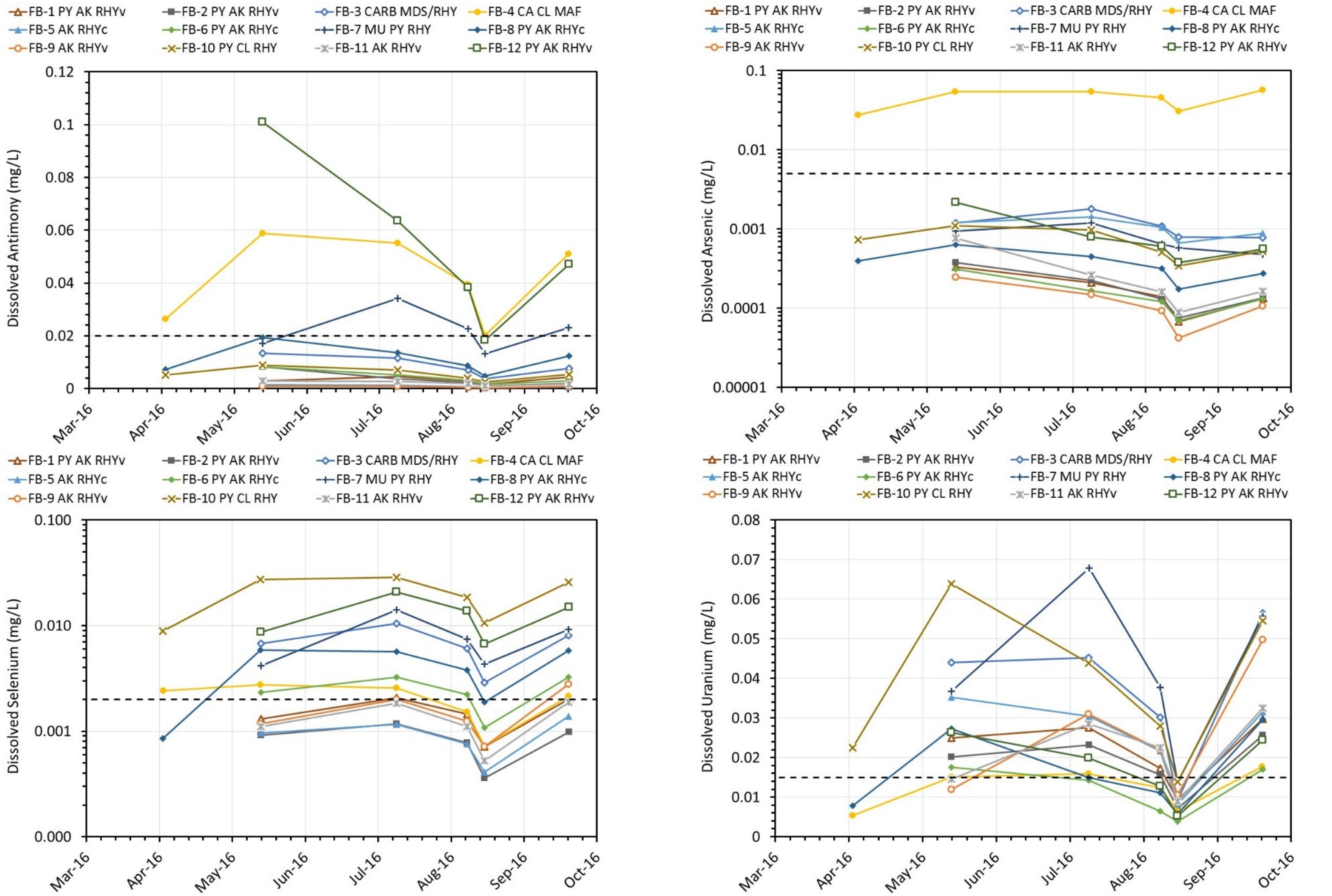
The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-24: Trends in pH, Sulphate, Calcium, and Magnesium Concentrations in Leachate from Waste Rock Field Barrels



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-25: Trends in Cadmium, Zinc, Lead, and Copper Concentrations in Leachate from Waste Rock Field Barrels



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-26: Trends in Antimony, Arsenic, Selenium, and Uranium Concentrations in Leachate from Waste Rock Field Barrels

Dissolved arsenic concentrations in the leachates collected from all but one field barrel were below the SSWQO (Figure 5-26). The exception was FB-4 (CA CL MAF), which had leachable arsenic concentrations of 0.028 to 0.057 mg/L, between six and ten times higher than the arsenic SSWQO (0.005 mg/L). This is in agreement with static testing, which indicated that the bulk arsenic content and SFE leachable arsenic concentrations were elevated in CA CL MAF geodomain samples relative to other geodomains.

The CA CL MAF field barrel (FB-4) also exhibited elevated antimony concentrations (0.02 to 0.06 mg/L) as did FB-12 (PY AK RHYv; 0.02 to 0.1 mg/L), although the latter appeared to decline over the sampling season (Figure 5-26).

Selenium concentrations were consistently above the SSWQO in the leachate from five field barrels including FB-10 (PY CL RHY), FB-7 (MU PY RHY), and FB-3 (CARB MDS/RHY), which reported the highest dissolved sulphate concentrations. Indeed, concentrations of dissolved selenium and sulphate in the leachate from such high selenium field barrels were positively correlated, suggesting that selenium was mobilized via the oxidation of sulphide material, consistent with the laboratory-based trickle leach column data.

Dissolved uranium concentrations showed SSWQO exceedances in the leachate collected from the majority of field barrels (Figure 5-26), although the magnitude of these exceedances varied widely between sampling events for each field barrel. A moderate correlation was noted between uranium concentrations and sulphate levels, similar to that observed in the trickle leach columns.

5.2.2 TAILINGS

One humidity cell containing tailings sample "Test 29 cycle 1-6" was set up to allow for the calculation of NP and AP depletion times and assess trace element leaching. A trickle leach column (C-10) was also prepared that contained a mixture of approximately three parts tailings to one part sulphidic waste rock to approximate the current mine plan considerations of co-disposal of tailings with potential acid generating waste rock.

The individual composition of each sample that was used to construct trickle leach column C-10 is presented in Appendix G. The ABA and selected trace element content for the trickle leach composite sample that was prepared is displayed in Table 5-28 alongside the characteristics of the tailings humidity cell. Both materials exhibited very high sulphide sulphur content (22 to 28 Wt.%), moderate levels of NP (74 to 96 kg $CaCO_3$/t), and were classed as potentially acid generating based on their NP/AP of 0.1. High concentrations of trace elements were also observed in both samples.

The data collected to date for the trickle leach column and humidity cell is presented in Appendix H and I, respectively. At the time of writing, 19 weeks of data are available for the humidity cell, and nine weeks for the trickle leach column. The humidity cell leachate has broadly displayed a gradual increasing trend to date from pH 7.1 (cycle 1) to 7.5 (cycle 20) (Figure 5-27). Elevated concentrations of sulphate (570 to 1230 mg/L), calcium (150 to 447 mg/L), and magnesium (43 to 146 mg/L) have been observed to date (Figure 5-27), related to sulphide oxidation and associated neutralization by carbonate mineralization.

The trickle leach column leachate has remained circumneutral to date (pH 7.2 to 7.4). Sulphate and magnesium concentrations in the leachate during the first flush was very high (3,800 and 760 mg/L, respectively, in cycle 0).

Magnesium concentrations decreased sharply to 26 mg/L by the most recent cycle (cycle 8). However, sulphate remained elevated at concentrations between 1480 and 1580 mg/L between cycle 3 and 8, related to sulphide oxidation. Elevated calcium has been observed to date (450 to 740 mg/L) associated to acid neutralization by carbonate mineralization.

Table 5-28: Selected ABA and Trace Element Composition of the Tailings Trickle Leach Column and Humidity Cell

	Composition of Parameters of Interest							
	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
Detection Limit:	**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**0.3**	**0.5**	
Column ID								
HC-3	1.35	113	28.2	0.08	28.1	879	95.6	0.1
C-10	0.68	56.7	22.6	0.08	22.6	705	74.4	0.1
	Antimony	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Selenium**	**Uranium**	**Zinc**
	ppm	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
Detection Limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
Column ID								
HC-3	47.3	2054	35.4	1128	2052	4.7	3.51	4672
C-10	39.7	2165	13.3	1488	1530	44.9	3.55	2091

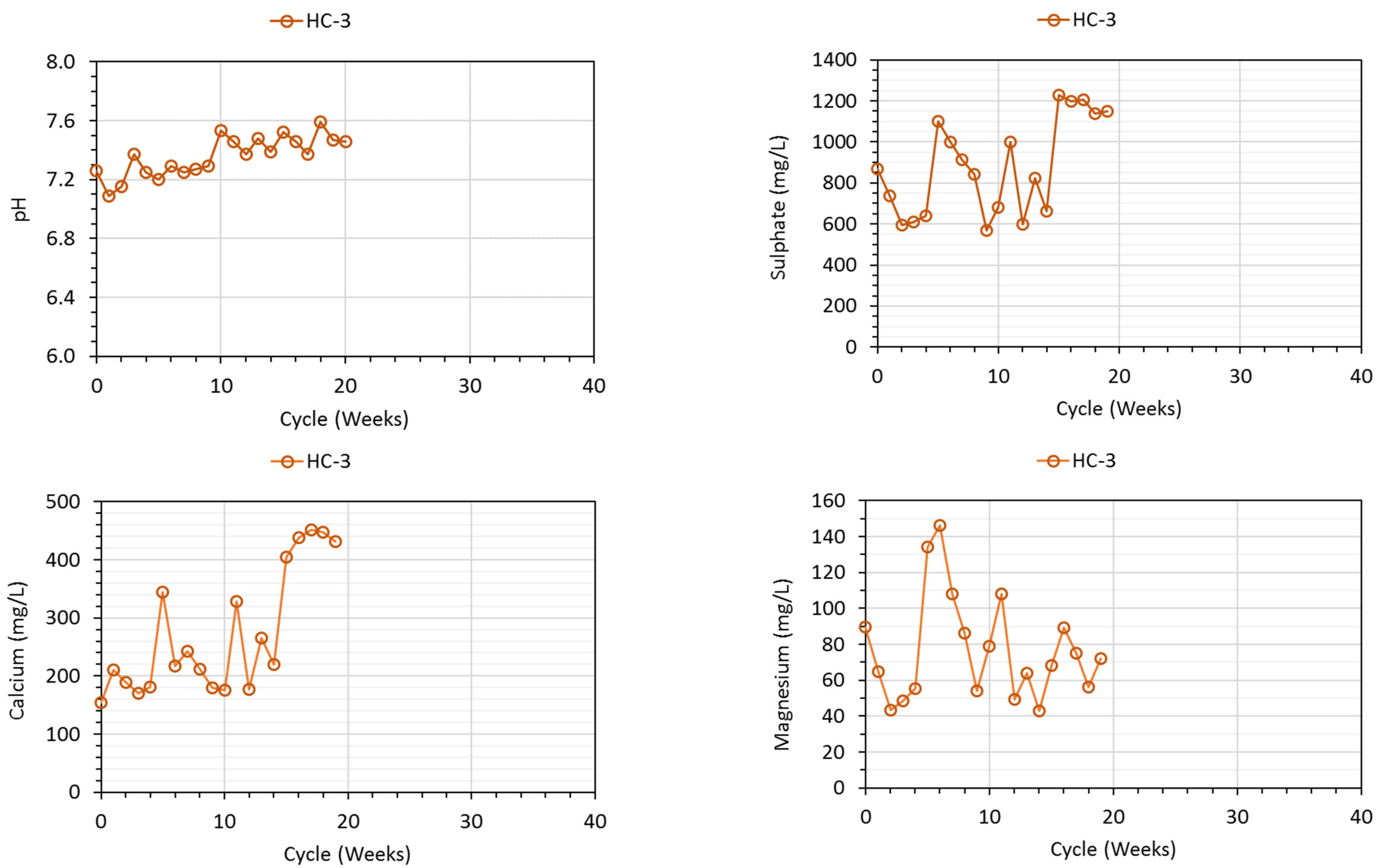


Figure 5-27: Trends in pH, Sulphate, Calcium, and Magnesium Concentrations in Leachate from Tailings Humidity Cell

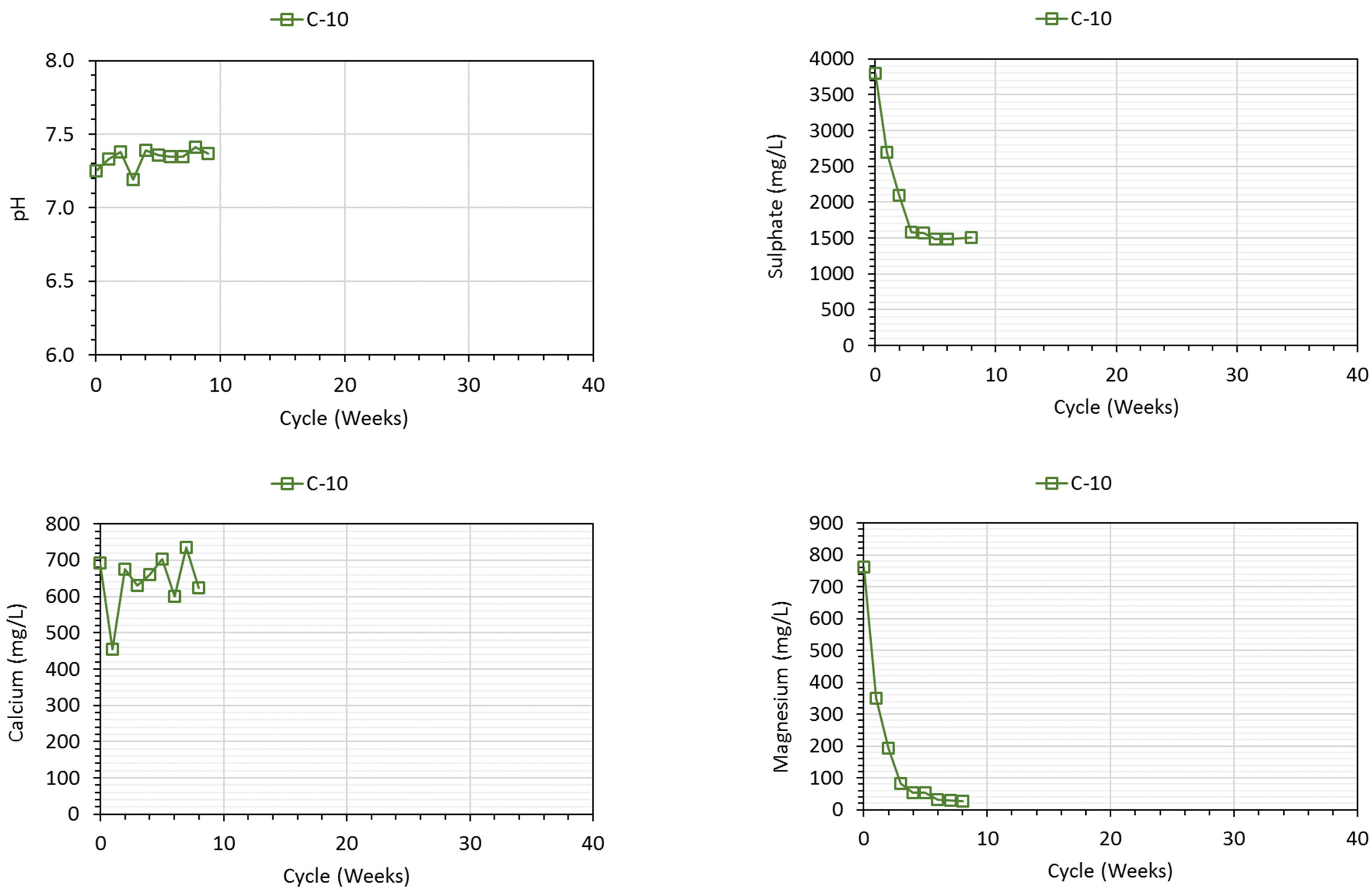


Figure 5-28: Trends in pH, Sulphate, Calcium, and Magnesium Concentrations in Leachate from Tailings Trickle Leach Column (C-10)

Concentrations of cyanide, used as part of the locked cycle testing, were present in the humidity cell leachate at up to 0.0025 mg/L for the first few cycles, before declining to below the detection limit (i.e., <0.0005 mg/L) for cycles 5 through 7 (Figure 5-29), after which cyanide monitoring was discontinued.

The trace element concentrations in the tailings humidity cell and trickle leach column leachate have been compared to the SSWQO developed for site KZ-9 on Geona Creek in order to highlight elevated concentrations of constituents of interest. Given the much lower flushing rate and lower temperatures that would be expected at a site tailings storage facility, the trace element concentrations observed in the humidity cell leachate are likely higher than those that would be observed in the field. As such, the comparison to the SSWQO is for reference purposes only and does not imply compliance or otherwise with the SSWQO or other water quality guidelines.

The highest concentrations of elements associated with the sulphide mineralization (zinc, lead, copper, cadmium) were present in the humidity cell leachate during the first leaching cycle as soluble metal salts were flushed from the cell, before declining by an order of magnitude over the first nine cycles (Figure **5**-**30**). Lead concentrations declined to and have remained marginally below the lead SSWQO to date. Copper concentrations also declined to below the copper SSWQO but have since increased to marginally above the SSWQO (0.0042 mg/L at cycle 19). Zinc and cadmium concentrations have remained an order of magnitude above their respective SSWQOs. A slight increasing trend is also evident for copper, zinc and cadmium over the most recent five leach cycles. Selenium, which is known to be present at relatively high levels in the ABM mineralization (BMC, 2015 and references therein), is consistent with the elevated selenium levels observed to date in the tailings humidity cell leachate (Figure 5-31). Relatively low leachate concentrations of antimony, arsenic, and uranium have been observed to date, well below their respective SSWQOs, however uranium concentrations have indicated a broad increasing trend (Figure 5-31).

Similar to the humidity cell test, the highest concentrations of zinc, lead, copper and cadmium were present in the trickle cell leachate during the first leaching cycle before declining over the subsequent cycles. In the case of copper, lead and zinc, however, the initial flushing concentrations in the trickle leach column leachate and the concentrations to which these elements have decreased to are roughly an order of magnitude greater than those present in the humidity cell leachate at equivalent leach cycles (**Error! Reference source not found.**). The highest concentration of selenium was also present in column leachate of the first leaching cycle and has since declined while remaining elevated above the selenium SSWQO by two orders of magnitude-in line with the relatively high selenium levels in the ABM mineralization. Concentrations of antimony, uranium and arsenic are elevated relative to the humidity cell leachate concentrations (Figure 5-33). Arsenic concentrations have consistently been above the SSWQO whereas antimony and uranium have been broadly in line with their respective SSWQOs.

Although a declining trend was evident for many elements in the early stages of both kinetic tests, development of acidic conditions that are expected in the long term in the tailings storage facility will result in marked increases in trace element concentrations. Ongoing humidity cell analysis will help determine the approximate delay to acidic conditions. Given that the concentrations of the majority of constituents have yet to stabilize, no steady state concentrations or associated release rates of been calculated.

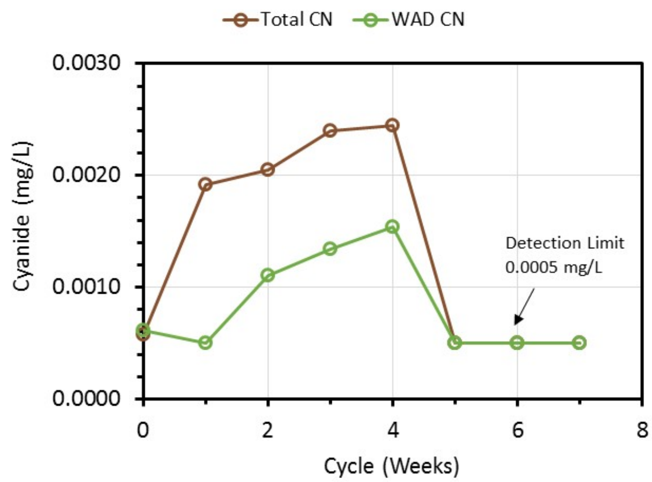
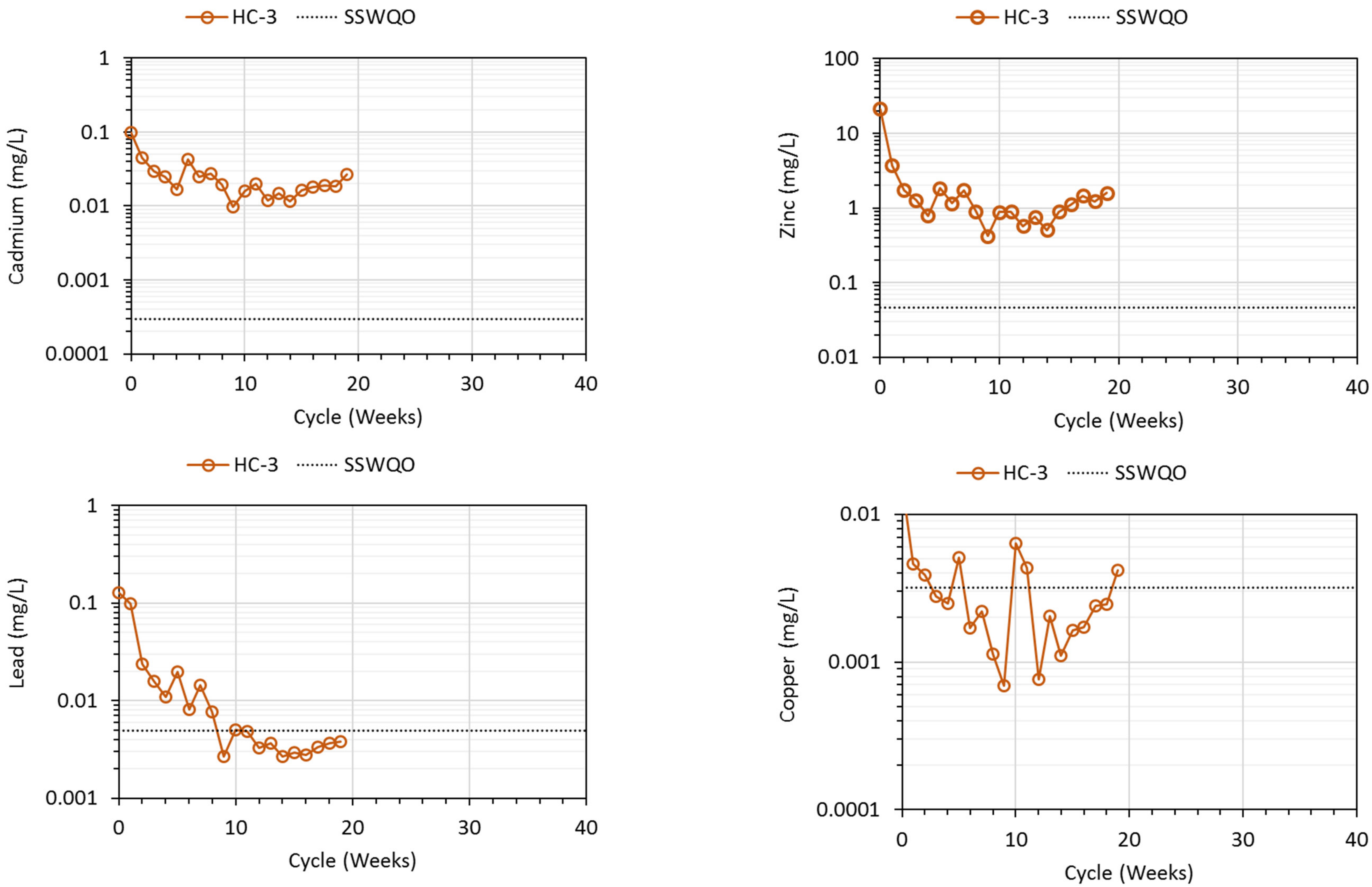
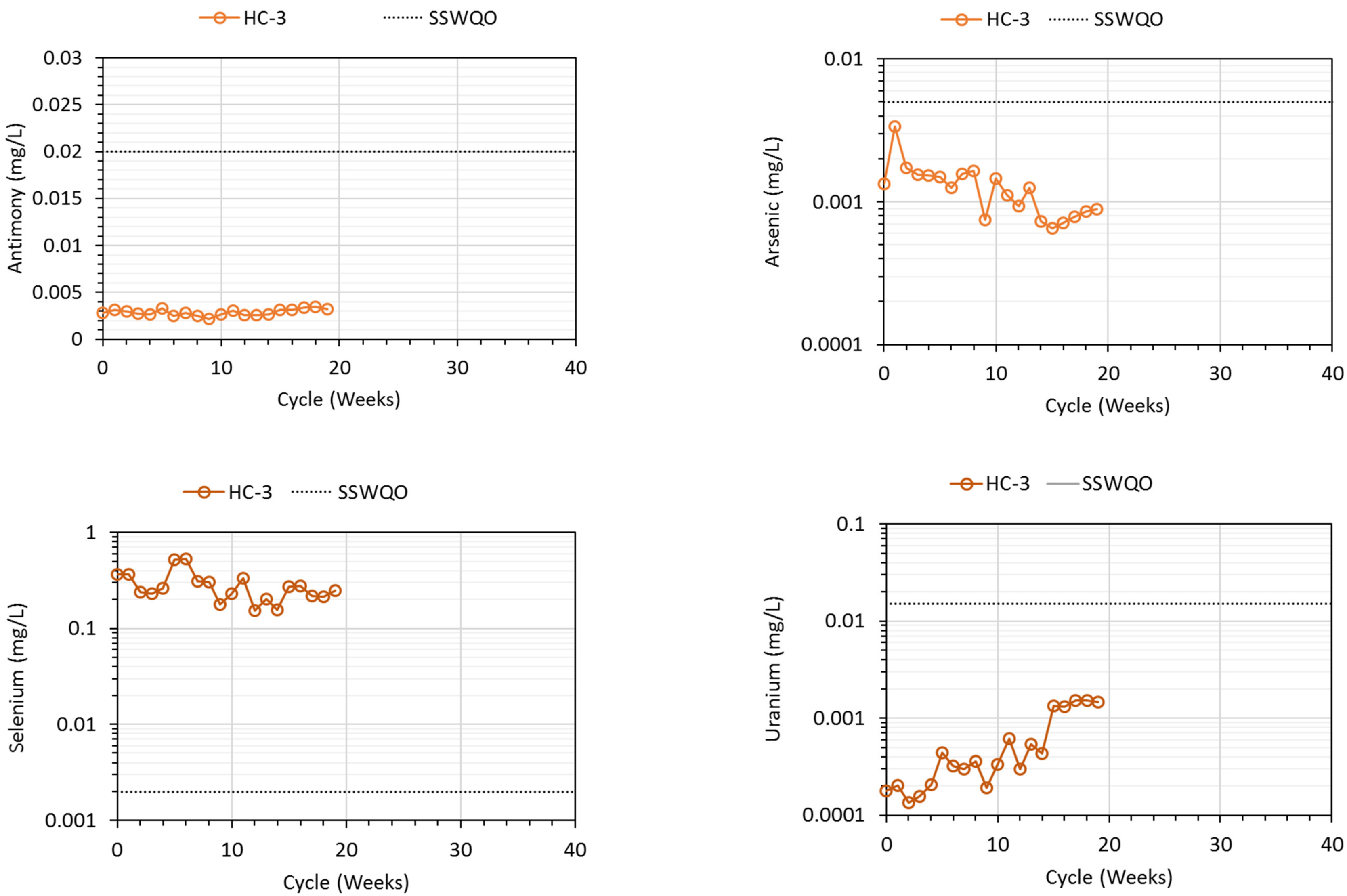


Figure 5-29: Trends in Total Cyanide and Weak Acid Dissociable Cyanide Concentrations in Leachate from Tailings Humidity Cell



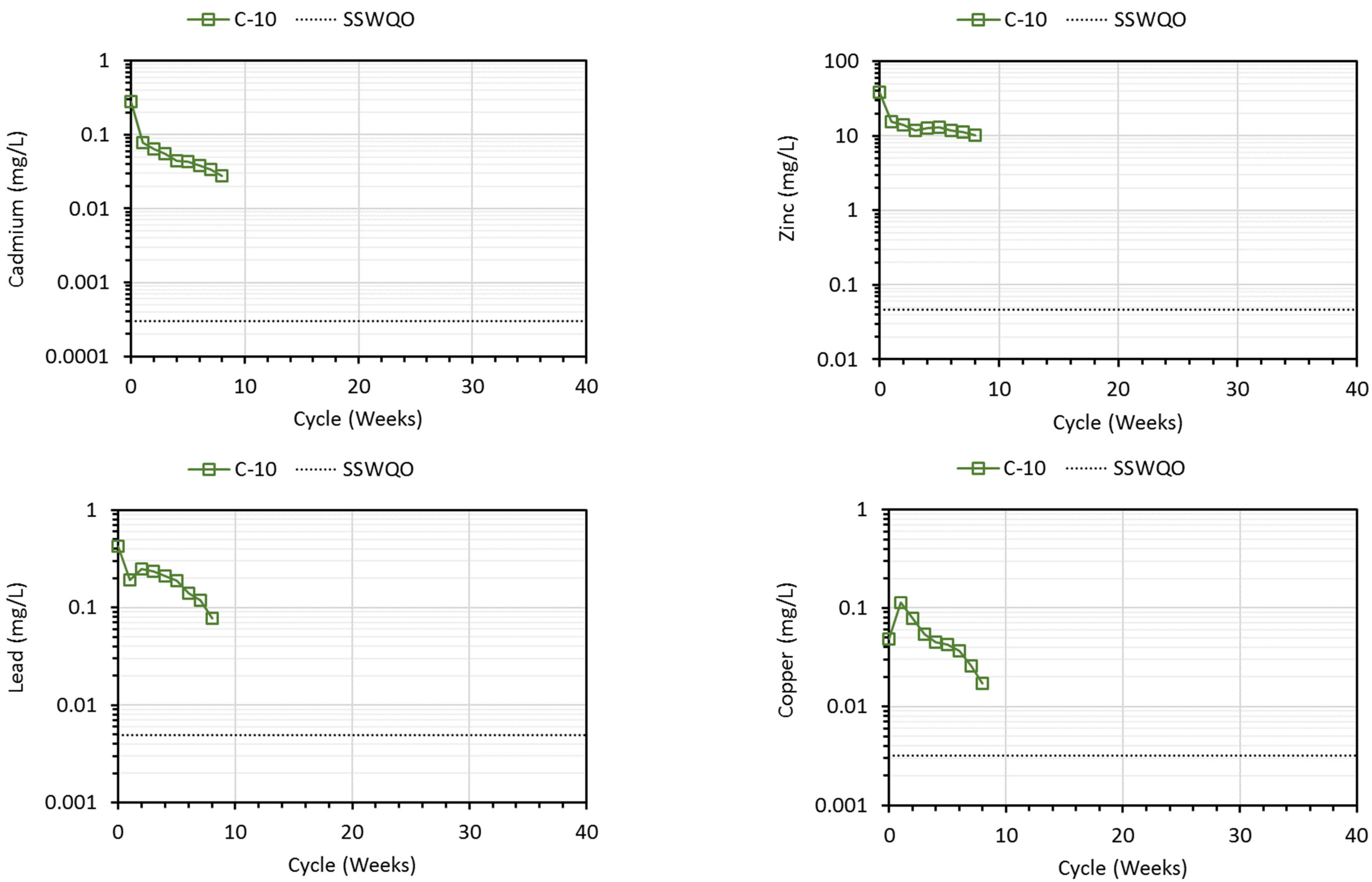
The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-30: Trends in Cadmium, Zinc, Lead, and Copper Concentrations in Leachate from Tailings Humidity Cell



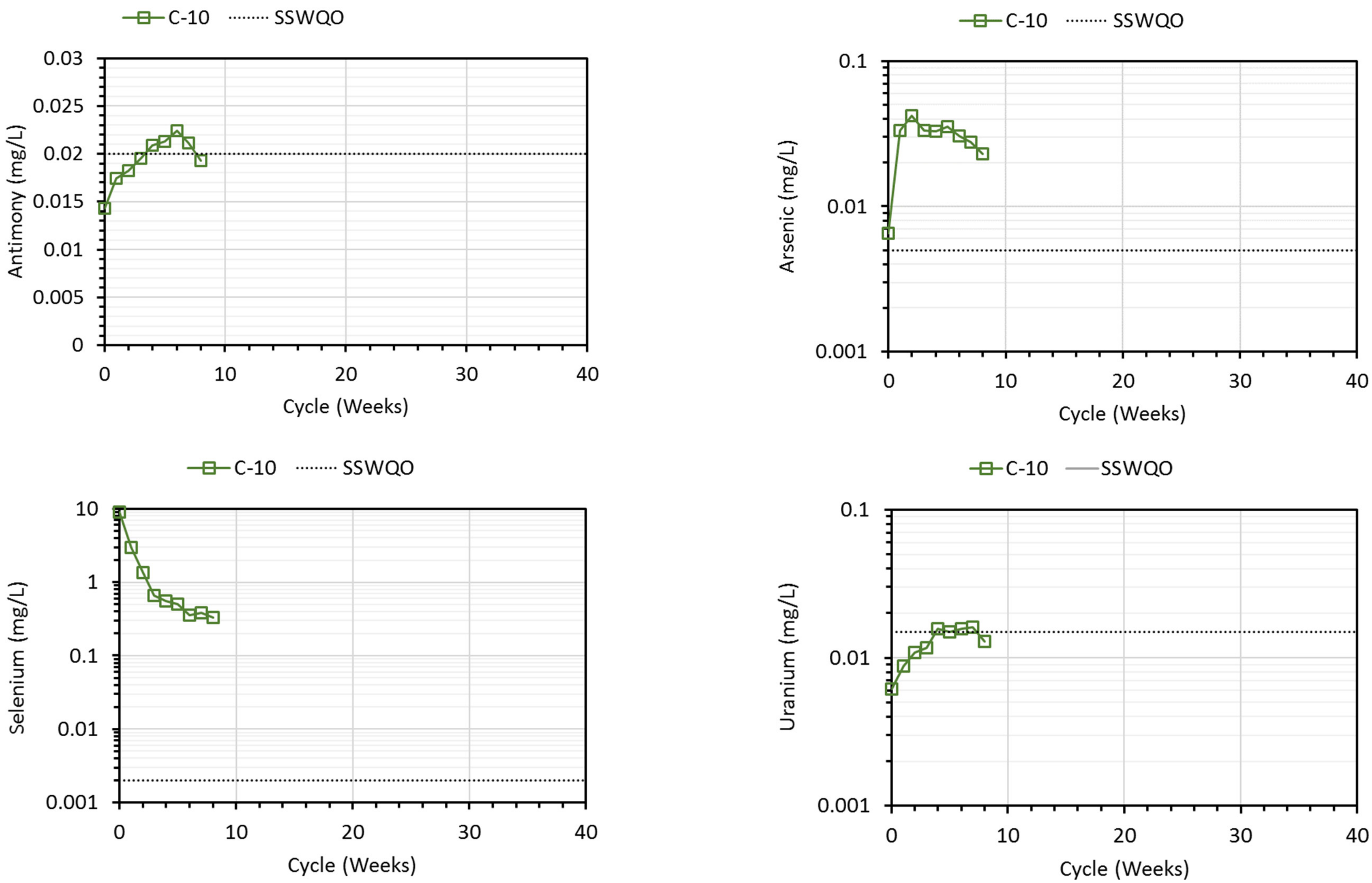
The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-31: Trends in Antimony, Arsenic, Selenium, and Uranium Concentrations in Leachate from Tailings Humidity Cell



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-9

Figure 5-32: Trends in Cadmium, Zinc, Lead, and Copper Concentrations in Leachate from the Tailings Trickle Leach Column (C-10)



The dashed line represents the SSWQO for KZK water quality monitoring site KZ-

Figure 5-33: Trends in Antimony, Arsenic, Selenium, and Uranium Concentrations in Leachate from Tailings Trickle Leach Column (C-10)

6 IMPLICATIONS FOR WASTE ROCK MANAGEMENT

6.1 GEODOMAIN GROUPING

Ten waste rock geodomains have been identified in the ABM open pit, however, mapping of these geodomains at the pit face during active mining operations is not feasible due to safety concerns. Furthermore, drilling and blasting of the rock during mining will obliterate many of the visual features that distinguish various geodomains. Given these constraints, BMC have indicated that three groups of waste rock material can be determined in the pit during operations (BMC, 2016):

- Wind Lake Formation, which comprises the MDS geodomain;
- Mafic Volcanics, which comprises the CA CL MAF geodomain; and
- Felsic Volcanics, which comprises the remaining eight geodomains (i.e., AK RHYc, PY AK RHYc, AK RHYv, PY AK RHYv, PY CL RHY, MU PY RHY, CARB MDS/RHY, and RHYi).

Any visual-based separation of waste rock at the pit face will be restricted to these three groupings. Although the Wind Lake Formation and Mafic Volcanics comprise only one geodomain each (MDS and CA CL MAF, respectively, both of which are largely non-PAG), the Felsic Volcanics group is made up of eight geodomains that have a span a range of acid generating and potentially metal leaching characteristics. As such, visual sorting of material alone will not be sufficient to properly classify and appropriately manage waste rock derived from the ABM open pit. Limited testing of material will be required for this purpose and suitable criteria need to be developed to differentiate the different types of waste rock.

6.2 WASTE ROCK CLASSIFICATION

The current mine plan envisages three types of Storage Facilities:

- Class A Storage Facility, which will host rock that is strongly acid generating and has an associated potential for elevated trace element leaching;
- Class B Storage Facility, which will house mildly acid generating rock that has a lower susceptibility to trace element leaching; and
- Class C Storage Facility, which will host non-acid generating rock with a low potential for trace element leaching.

Cominco proposed a similar three tier classification system for waste rock produced from the ABM open pit (Table 6-1). The Cominco classification criteria were based solely on the acid generation potential of the material; no consideration was given to its susceptibility to leach trace elements of concern under circumneutral conditions prior to the onset of any acidic drainage.

Table 6-1: Cominco Waste Rock Classification Criteria

Waste Rock Class	Cominco ABA waste rock classification criteria
Strongly Potentially Acid Generating	Total sulphur >2.9 wt.%, NP <18 kg $CaCO_3$/t
Weakly Potentially Acid Generating	Total sulphur <2.9 wt.%, NP >18 kg $CaCO_3$/t, NP/AP <1.7
Potentially Acid Consuming	Total sulphur <2.9 wt.%, NP >18 kg $CaCO_3$/t, NP/AP >1.7

In developing scoping waste management criteria, we have used the Cominco classification as a starting point, evaluating it against the expanded static dataset and applying modifications based on trace element leaching data and changes to the mine plan.

6.2.1 SEPARATION OF CLASS A MATERIAL FROM CLASS B

The current mine plan envisages that tailings and strongly acid generating waste rock will be comingled in the lined Class A Storage Facility. Drainage from this Facility will be collected a directed to a water treatment plant during operations. At closure, the Class A Storage Facility will be covered with a low permeability cover and revegetated. Any minimal drainage will be directed towards a passive treatment system (constructed wetlands or bioreactor) for long term treatment. Material that is more weakly potentially acid generating, or expected to take longer to develop acidic conditions, will be housed in the Class B Storage Facility. Water from the Class B Storage Facility will be treated during operations and during active closure. Post-closure drainage from the Class B Storage Facility will be directed towards the passive treatment system.

Cominco classified waste rock that had greater than 2.9 wt.% total sulphur as strongly potentially acid generating. Consideration of the sample distribution in NP vs AP space (Figure 5-8) indicates that all of the samples with total sulphur in excess of 2.9 wt.% (i.e., AP>92 kg $CaCO_3$/t) are predicted to be potentially acid generating, with NP/AP ratios typically much less than one. As such, this criterion still appears to be suitable for use to distinguish Class A material from Class B.

During Operations, drainage from the Class B Storage Facility will be subject to water treatment. At Closure, a minimum NP is required to buffer acid generation in the Class B Facility until reclamation measures can be enacted at the end of mining and any drainage directed for post-closure passive treatment. The minimum NP required can be calculated based on the average of the NP consumption rates observed in the humidity cells that exhibited both circumneutral leachate (pH 6.5 to 8) and a carbonate molar ratio (CMR) of between one and two (i.e., suggestive of calcium and magnesium release in response to neutralization of sulphide oxidation). Converted to $CaCO_3$ equivalents, the average NP consumption rate is 12 mg $CaCO_3$/kg/wk. Assuming a mine life of ten years, this equates to 6.2 kg $CaCO_3$/t NP. However, not all of this NP will be available for neutralization under field conditions because of particle size; based on literature information on availability and on blasted particle size (and therefore surface area of the waste rock in the dump) and it was estimated that 60% of this NP would be available for acid neutralization based on the disseminated nature of much of the carbonate mineralization in the ABM open pit host rocks. As such a calculated NP threshold of 10 kg $CaCO_3$/t should be sufficient to maintain circumneutral drainage over the proposed life of the mine.

Therefore, two criteria are proposed for the separation of Class A and Class B material. Waste rock is Class A if it:

- Has a total sulphur content >2.9 wt.% (i.e., AP>92 kg $CaCO_3$/t); or
- Has NP <10 kg $CaCO_3$/t.

Based on the predicted tonnages of each geodomain that will be excavated from the ABM open pit (Table 4-1) and the combined Cominco and AEG static ABA dataset, the separated Class A waste rock is calculated to have a weighted average 2.3 wt.% sulphur, 17 kg $CaCO_3$/t NP, and a resulting NP/AP of 0.2. When combined with the tailings material that will be comingled with the Class A waste rock, the composite material is calculated to have 17.6 wt.% sulphur, 61 kg $CaCO_3$/t NP, and a resulting NP/AP of 0.1. Such high sulphur Class A material is anticipated to be acid generating in the near to mid term with associated elevated trace element concentrations in its drainage, as evidenced by the elevated trace metal concentrations in the mildly acidic leachate from the Class A trickle leach column C-7 (Section 5.2.1.1).

6.2.1.1 ***Proximity to ABM Mineralization***

As part of the initial waste rock classification evaluations, a conservative assumption was tested regarding the geochemical characteristics of rock proximal to the orebody. There were two objectives; first to evaluate any significant "halo" of potential Class A material clearly defined by location and second to allow flexibility for changes in definition of ore and low grade, to ensure that potentially reactive low grade and/or pit rock was identified.

Application of the Class A selection criteria to the ABA dataset indicates that a significant proportion of PY CL RHY (46%), MU PY RHY (25%), and CARB MDS/RHY (23%) samples would be Class A material. All of these geodomains are located proximal to the ABM mineralization. Alongside the footwall CA CL MAF unit, samples from these geodomains were examined for correlations between sulphur content and proximity to the mineralization contact (Figure 6-1). The CA CL MAF samples had the lowest range of total sulphur concentrations (<0.01 to 0.3 wt.%), largely within the lower to upper quartile span for this geodomain (0.02 to 0.3 wt.%) and proximity to the orebody did not correlate with sulphur content. Similarly, the majority of CARB MDS/RHY, MU PY RHY, and PY CL RHY geodomain samples collected within 20 m of the orebody contact returned total sulphur concentrations largely within their respective lower and upper quartile ranges (~0.5 to 1.6 wt.%). Total sulphur levels in excess of the upper quartile were observed for two MU PY RHY samples (n=10) and one sample each from CARB MDS/RHY (n=9) and PY CL RHY (n=8); however, only two of those samples were collected immediately adjacent to the orebody. Of the four geodomains, only the MU PY RHY samples showed a tentative increase in total sulphur contact with approach to the ABM mineralization contact (Figure 6-1), but in general there is not a strong relationship between sulphur content and distance to mineralization. This suggests that the waste rock classification need not include overly conservative classification criteria related to proximity to orebody. Instead, the A/B/C waste classification criteria are sufficient to delineate reactive low grade ore and/or pit waste rock to facilitate waste management planning and scheduling.

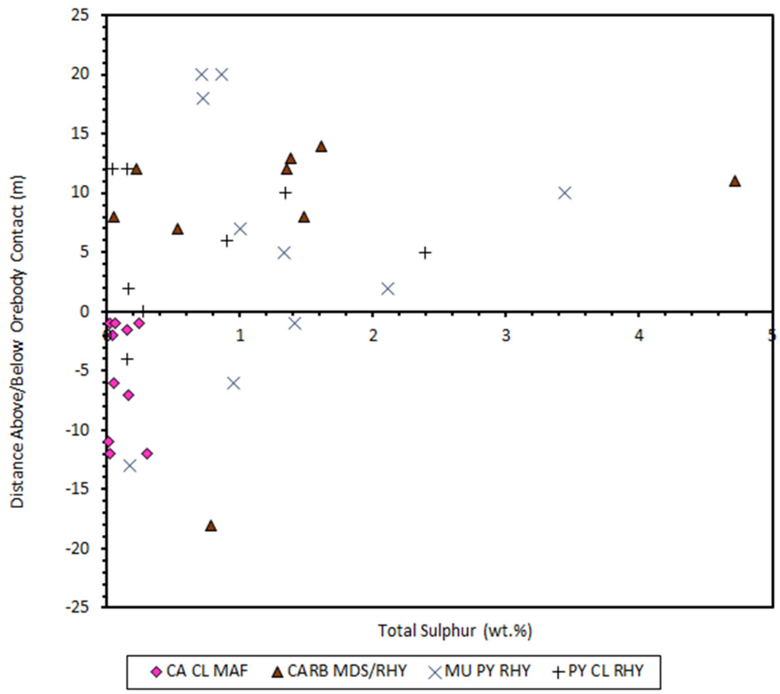


Figure 6-1: Total Sulphur Content of Samples Collected close to ABM Mineralization

6.2.2 SEPARATION OF CLASS C MATERIAL FROM CLASS B

In order to maintain circumneutral pH drainage, the rate of acid generation should not exceed the rate of neutralization. As discussed in Section 5.2.1.2, the relative rates of waste rock acid generation (primarily from pyrite oxidation) and acid neutralization (primarily from the dissolution of calcium- and magnesium-bearing carbonates) can be determined from humidity cell data using the sulphate molar release rate and calcium plus magnesium molar release rates, respectively. Since the resulting carbonate molar ratio (CMR) is a measure of the ratio of acid neutralization by carbonate mineral dissolutions (calcium plus magnesium release rate) to acid generation by sulphide oxidation (sulphate release rate), it can be used to develop a site specific NP/AP ratio to segregate potentially acid generating (PAG) and not potentially acid generating (non-PAG) material.

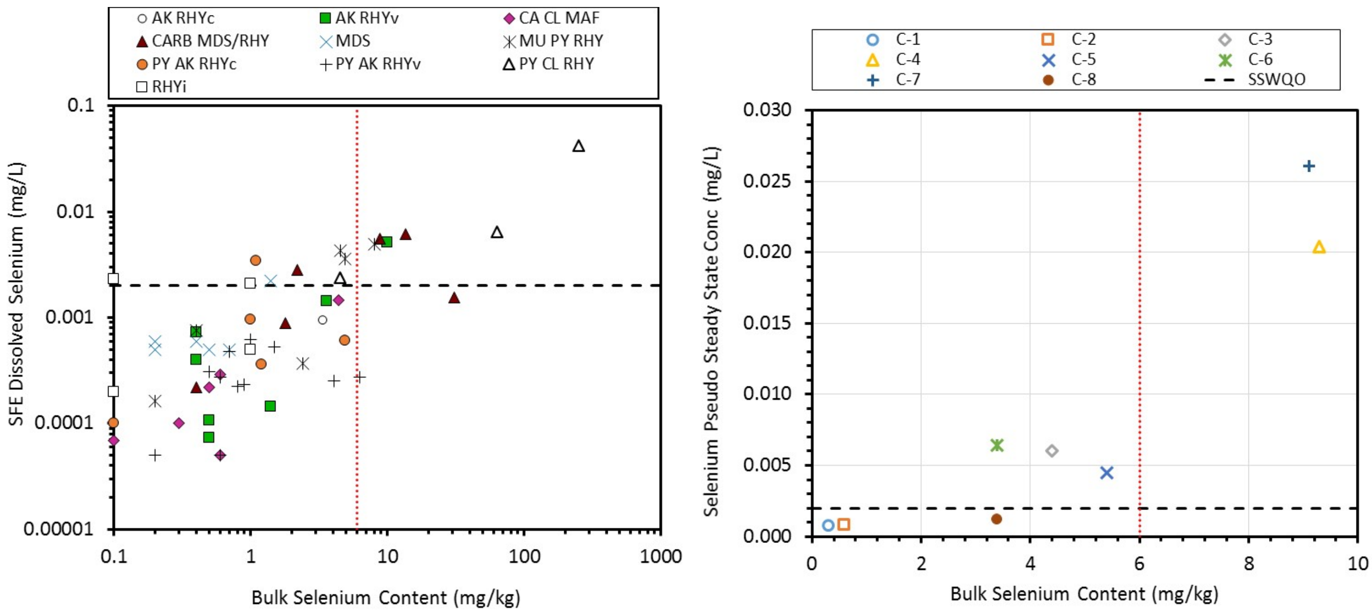
Cominco used the average carbonate molar ratio (CMR) from “Type 2” humidity cells, characterized by circumneutral leachate pH and decreasing sulphate release, to determine a site-specific NP/AP ratio of 1.7 that was used to delineate weakly potentially acid generating material from potentially acid consuming material. Expanding the CMR calculation to include only those Cominco and AEG waste rock humidity cells that returned a CMR of between one and two (i.e., suggestive of calcium and magnesium release in response to neutralization of sulphide oxidation) also returned an average CMR of 1.7. An examination of the humidity cell data indicated that waste rock cells with NP/AP ≤1.8 were PAG (i.e., NP estimated to be consumed prior to AP), and all cells with NP/AP >1.8 were non-PAG. The calculated lag time to net acidic conditions for the NP/AP = 1.8 cell (Cominco cell II-11) indicated that this cell was PAG, however, the time to NP depletion (112 years) was only slightly less than the time to AP depletion (124 years) for this cell. Therefore, the site specific NP/AP ratio has conservatively assumed to be 1.9 for the purposes of separating potential acid generating Class B material from potentially acid neutralizing Class C material.

Trace element leaching is also an aspect of potential concern that needs to be addressed in separating the Class B and Class C materials. The concentrations of the majority of constituents of potential interest peaked during flushing of the trickle leach columns, however, initially elevated concentrations declined to levels compatible with the SSWQO for the majority of parameters. Inspection of both the laboratory and field-based kinetic testing indicates that selenium, antinomy, arsenic, and uranium are constituents of potential concern in materials that are not strongly potentially acid generating. All of these elements appear to show prolonged leaching such that their pseudo-steady state concentrations in the trickle leach testing and/or field barrel leachate levels were elevated, although it should be noted that the laboratory-based kinetic testing is still ongoing and the field barrel kinetic testing is still in its early phase with only six months of data collected. Furthermore, the smaller particle size, higher temperature, and higher flushing rate of the laboratory-based tests likely result in higher leachate concentrations of selenium that might otherwise be observed at the field scale. Therefore, any trace element waste classification criteria should be viewed as preliminary at this time.

6.2.2.1 ***Selenium***

Elevated concentrations of selenium were observed in leachate from Class A, B, and C trickle leach columns (Figure 5-19) and from multiple field barrels (Figure 5-26). Dissolved selenium concentrations in shake flask extracts showed a moderate positive correlation with the bulk selenium content determined by aqua regia digestion (Figure 6-2). Similarly, the bulk selenium concentration in the trickle leach composite samples also showed a moderate correlation with the pseudo steady state leachate selenium levels (Figure 6-2). Examination of both relationships suggests that a selenium threshold of 6 ppm may serve to separate waste rock that is susceptible to selenium leaching at levels in excess of the SSWQO (Figure 6-2) from Class C material.

Approximately 8% of samples from the AEG aqua regia ICP-MS static dataset (n=324) contain selenium concentrations greater than 6 ppm. Cross referencing these samples with the ABA-based waste classification criteria set out above indicates that the majority of these high selenium samples already report to the Class A (44%) or Class B (48%). Indeed, the waste rock in field barrels that exhibited the higher leachable selenium concentrations were largely from PY CL RHY, MU PY RHY, and CARB MDS/RHY geodomains, which predominantly classify as Class A or Class B material under the ABA-based selection criteria. Only 2 samples from the 324 sample dataset present in the ABA-sorted Class C fraction have a selenium content in excess of 6 ppm. Such minor misclassification suggests that the proposed ABA-based selection criteria may already adequately address selenium leaching concerns. This is consistent with the observation that selenium leaching is well correlated with sulphate (i.e., sulphide oxidation). As such, the 6 ppm selenium threshold is not proposed to be used for waste classification at this time, however, this should be revisited upon completion of the laboratory-based kinetic testing and the receipt of further seasons of field barrel data.



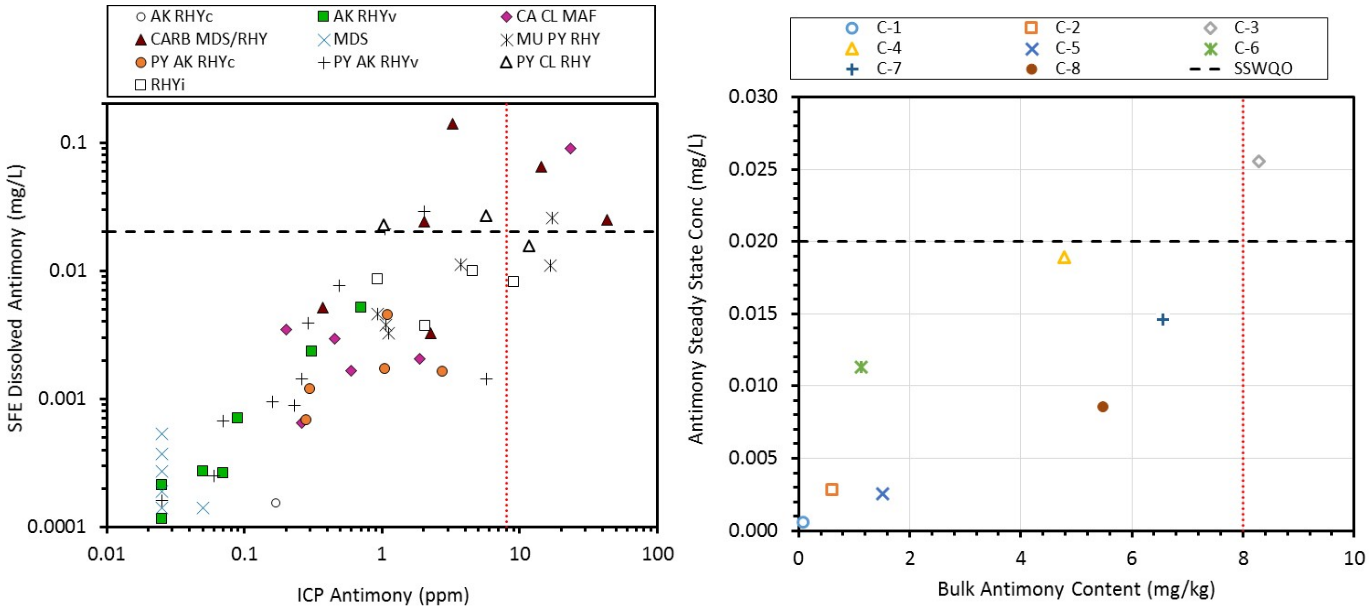
Horizontal dashed line represents the SSWQO for KZK water quality monitoring site KZ-9; Vertical dotted red line indicates 6 ppm bulk selenium content.

Figure 6-2: Relationship between SFE leachable (left) and Pseudo Steady State Trickle Leach Column Leachate (right) Selenium Concentrations with Bulk Selenium Content

6.2.2.2 *Antimony*

Marked antimony leaching was observed in the early stages of the majority of waste rock trickle leach columns, however, concentrations abated to levels approaching, or below the SSWQO for KZ-9. Field barrel leachate also showed elevated antimony for two of the field barrels. Although antimony leaching does not appear to be of significant concern, the data were assessed for the presence of a bulk criterion that could be used to separate material that exhibited leaching of antimony at elevated levels. SFE leachable antimony concentrations were positively correlated with the bulk antimony content of the sample as were pseudo steady state release rates of antimony in the trickle leach columns (Figure 6-3). A threshold of 8 ppm bulk antimony content appears to separate largely those samples that showed elevated SFE leachable antimony without capturing a high proportion of lower leaching samples (Figure 6-3). The same threshold also separated the highest antimony leaching trickle leach column (Figure 6-3).

The AEG aqua regia metals static dataset (n=324) contains 25 rock samples (8%) that have an antimony content in excess of 8 ppm. Of these, the majority partition to the Class A (36%) and Class B (52%) categories using the ABA-based selection criteria described above. Only three samples that the ABA-based sorting criteria identified as Class C had an antimony concentration greater than 8 ppm, which comprise just 2% of the samples sorted into the Class C category. Given this low level of apparent miscoding, an 8 ppm antimony threshold is not proposed to separate C material from B at this time, however, this should be revisited upon completion of the laboratory-based kinetic testing and the receipt of further seasons of field barrel data.



Horizontal dashed line represents the SSWQO for KZK water quality monitoring site KZ-9; Vertical dotted red line indicates 8 ppm bulk antimony content.

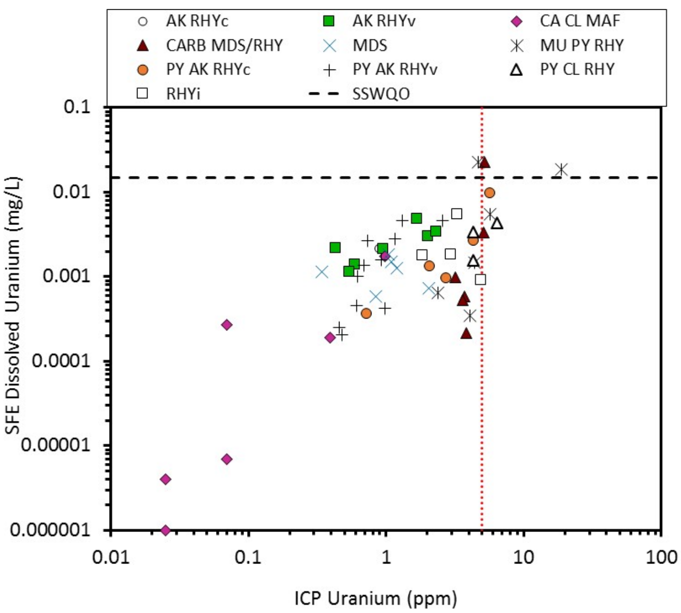
Figure 6-3: Relationship between SFE leachable (left) and Pseudo Steady State Trickle Leach Column Leachate (right) Antimony Concentrations with Bulk Antimony Content

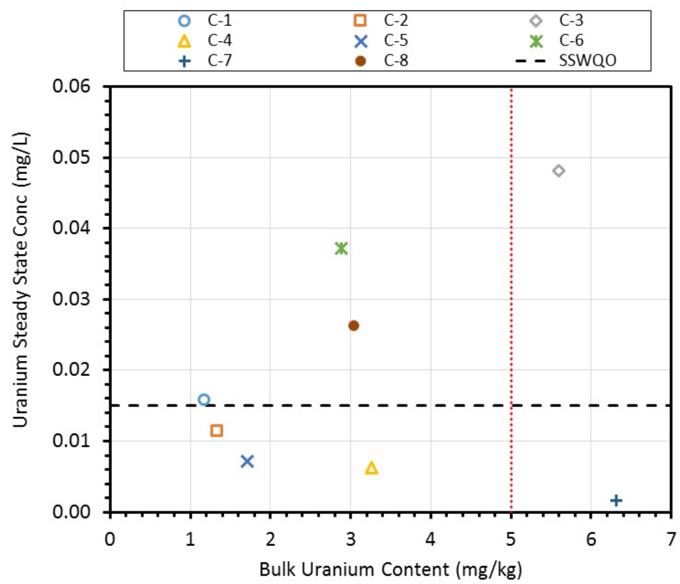
6.2.2.3 ***Uranium***

Elevated dissolved uranium concentrations were observed in the early flushing stages of the majority of trickle leach column experiments (Figure 5-19), however, the uranium concentrations in most column leachates subsided as the testing progressed such that only three columns exhibit concentrations that are elevated relative to the SSWQO. Elevated uranium concentrations were also observed in the leachate produced by the bulk of the field barrels. Such data need to be treated with caution since the uranium concentrations in the trickle leach columns still appear to be declining and the field barrel testing program is in its early stages however, development of a waste selection criterion designed to target uranium leaching waste rock merits consideration.

Leachable uranium appears to be controlled in part by alkalinity (i.e., bicarbonate) level under circumneutral conditions, however, no correlation of dissolved uranium concentration was observed with either inorganic carbon content or NP. The relationship between bulk uranium content and the pseudo steady state release rate from the trickle leach columns was also equivocal, although the highest leaching column (C-3) did have elevated uranium content in its waste rock composite (Figure 6-4). Such limited correlation of leachable uranium with a measurable solid phase parameter complicates the development of a uranium classification criterion, however, a moderate correlation was observed between shake flask leachable uranium concentrations and aqua regia extractable arsenic content (Figure 6-4). A bulk uranium threshold of 5 ppm largely delineated the few elevated shake flask extract uranium concentrations and also separated the highest leaching trickle leach column (Figure 6-4).

The AEG aqua regia static dataset contains 24 samples (7%) that have greater than 5 ppm uranium. Similar to the other elevated trace elements, the majority of these high uranium samples are assigned to Class A (46%) or Class B (33%) based on the proposed ABA waste classification criteria. Of those samples that were placed in Class C, only five (3% of the Class C samples) had a uranium concentration higher than 5 ppm. This relatively minor level of misclassified samples suggests that the application of a 5 ppm uranium threshold to delineate Class B material from Class C appears unnecessary, however, this should be revisited upon completion of the laboratory-based kinetic testing and the receipt of further seasons of field barrel data since moderately elevated uranium leaching is observed across geodomain and waste rock classifications.





Horizontal dashed line represents the SSWQO for KZK water quality monitoring site KZ-9; Vertical dotted red line indicates 5 ppm bulk uranium content.

Figure 6-4: Relationship between SFE leachable (left) and Pseudo Steady State Trickle Leach Column Leachate (right) Uranium Concentrations with Bulk Uranium Content

6.2.2.4 ***Arsenic***

Arsenic leaching at elevated levels was only apparent for two trickle leach columns (C-7 and C-8; Figure 5-19), both of which would be categorized as A or B material based on the ABA-based selection criteria proposed. The field barrel data indicated that only the CA CL MAF barrel consistently returned elevated leachate arsenic concentrations that were an order of magnitude higher than the SSWQO (Figure 5-26). This geodomain also comprised the majority of elevated SFE dissolved arsenic concentrations (Figure 5-11). Although a positive correlation was noted between the SFE leachable arsenic concentration and the aqua regia bulk arsenic content for the entire SFE dataset (Figure 5-13), no clear correlation was apparent within the CA CL MAF geodomain subset which SFE and field barrel testing indicate is the material that is most prone to arsenic leaching. Therefore, given the propensity of this material to leach arsenic, it is considered prudent to assign all of the CA CL MAF geodomain material that would otherwise be assigned to Class C, to Class B. Since CA CL MAF comprises the Mafic Volcanics waste management grouping, and occurs as the footwall material, it should be possibly to visually distinguish this waste rock at the pit face and separate it accordingly. Although the diversion of CA CL MAF waste rock will increase the volume of Class B material, the high NP associated with this geodomain is expected to ameliorate acid generation in the Class B Storage Facility and prolong the onset to acid generation.

In summary, two criteria are proposed to differentiate Class B material from Class C. Following the application of the Class A/B selection criteria, Waste Rock is Class B if it:

- Has an NP/AP ratio<1.9; or
- Is of the CA CL MAF geodomain (i.e., Mafic Volcanics) and does not meet the Class A criteria.

Based on the predicted tonnages of each geodomain that will be excavated from the ABM open pit (Table 4-1) and the combined Cominco and AEG static ABA dataset, the separated Class B material is calculated to have a weighted average 1.2 wt.% sulphur, 51 kg $CaCO_3$/t NP, and a resulting NP/AP of 1.4. The Class C material is estimated to have a weighted average 0.5 wt.% sulphur, 85 kg $CaCO_3$/t NP, and a resulting NP/AP of 5.4.

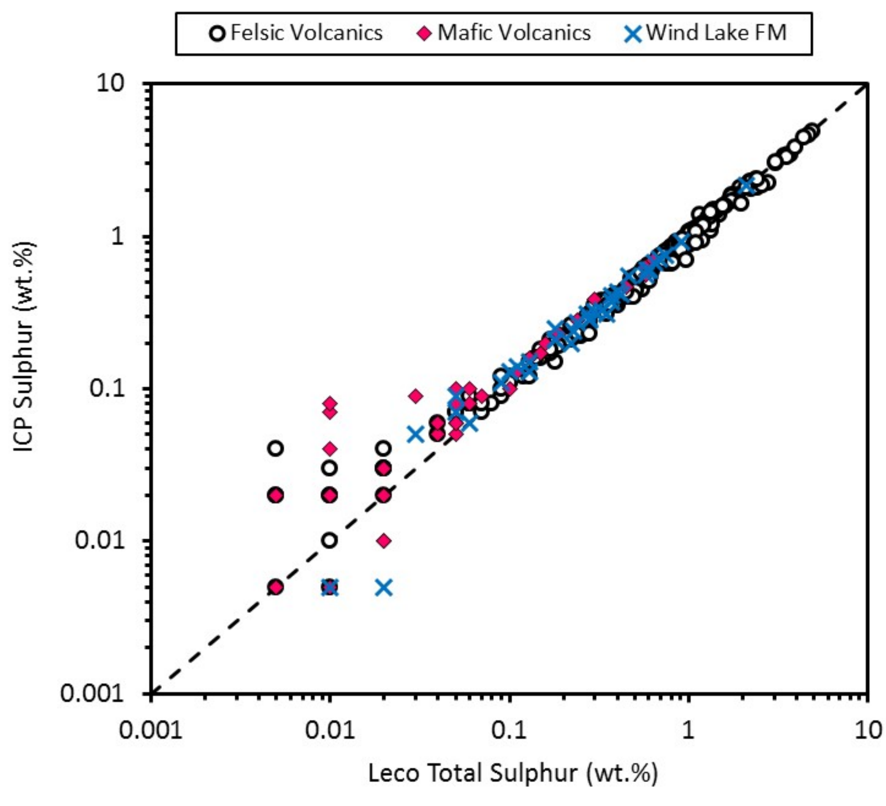
6.2.3 OVERBURDEN

Overburden material collected to date had sulphide sulphur levels that were typically below detection, with low, but measureable NP, suggesting that acid generation is considered unlikely. SFE testing found that soluble levels of metals associated with the ABM mineralization (e.g. zinc, lead, cadmium) tended to be higher in samples collected from the ABM open pit area, but were generally not considered high enough to cause any significant impact to the water quality of the downstream receiving environment. Copper concentrations in SFE leachate were also slightly elevated relative to the SSWQO, but showed no geographic trend and are likely mobilized by dissolved organic carbon, which would ameliorate some of the copper toxicity to fish. Overburden samples collected along the Tote Road showed relatively low concentrations of SFE soluble trace elements Aluminum was elevated in the rock sample SFE leachates, however, this is likely due to the sample crushing involved; the larger rock fragments that are considered for use as rip rap are not expected to leach aluminum and other trace elements at levels of concern in the field. Overall, the overburden is considered non-PAG and suitable for use for appropriate cover and construction applications.

6.3 SURROGATES FOR AP AND NP DETERMINATION IN WASTE ROCK MANAGEMENT

The application of a single analytical technique to determine sulphide sulphur, NP, and trace element concentrations would facilitate the process of waste segregation and potentially lower its overall cost. In addition to providing the concentrations of key trace elements of interest to waste segregation (e.g. selenium, antimony, arsenic, uranium), aqua regia digestion with ICP-AES/MS analysis also reports sulphur and calcium concentrations that could be used in place of sulphide sulphur and NP measurements.

The total sulphur concentration determined by Leco and by ICP analysis following aqua regia digestion were in excellent agreement at a 1:1 ratio (Figure 6-5), aside from some scatter close to the detection limit of both techniques. The close correlation indicates that ICP aqua regia sulphur concentrations could be used to calculate the surrogate AP of a sample. In ABA work, AP is calculated based on the sulphide sulphur concentration. The use of total sulphur concentrations rather than sulphide sulphur will lend some conservatism to the AP surrogate calculation, although ABA data indicate that sulphide sulphur comprises the vast majority of total sulphur in the rock samples from the ABM open pit area.

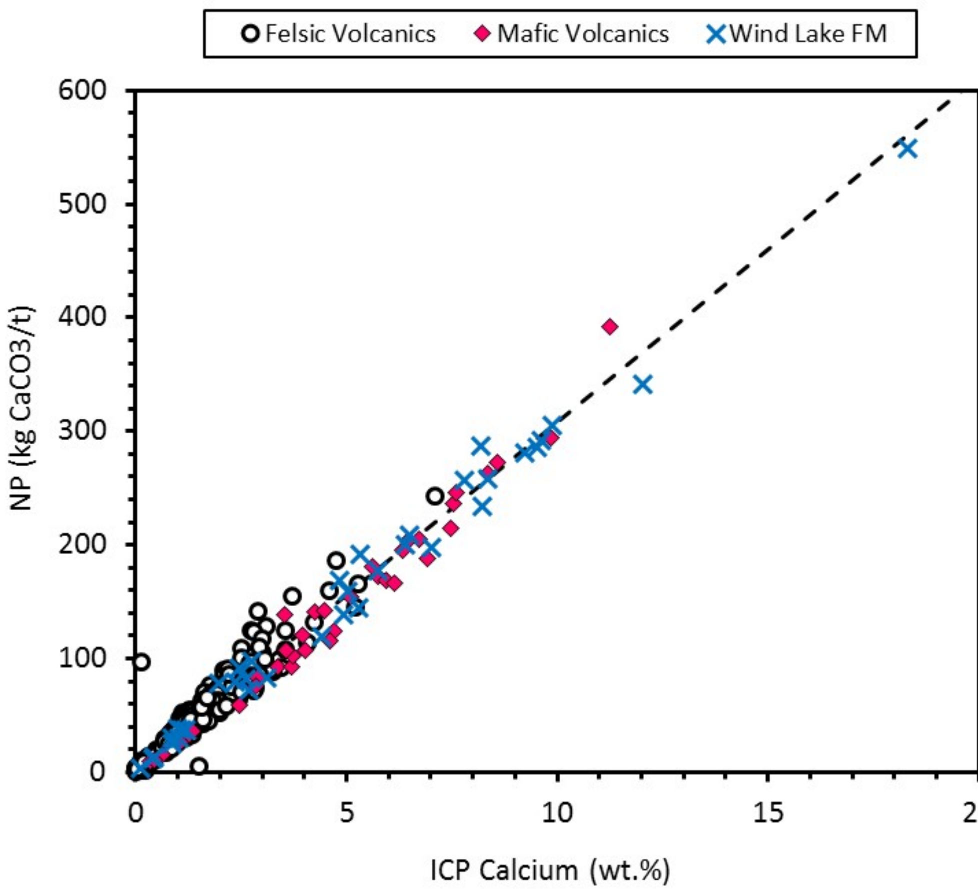


Dashed line indicates unity.

Figure 6-5: Comparison of Sulphur Concentrations Determined by Leco and Aqua Regia ICP

A strong correlation was also observed between NP and aqua regia ICP calcium content (Figure 6-6), since calcium-bearing likely carbonate minerals provide the bulk of the NP in these samples. The relationship between NP and aqua regia calcium + magnesium concentrations was also investigated since magnesium is also likely to be a prominent component of the waste rock carbonate mineral assemblages, however, much greater scatter was observed compared to the calcium only comparison. The best fit linear trendline of NP with aqua regia ICP calcium yielded the following relationship:

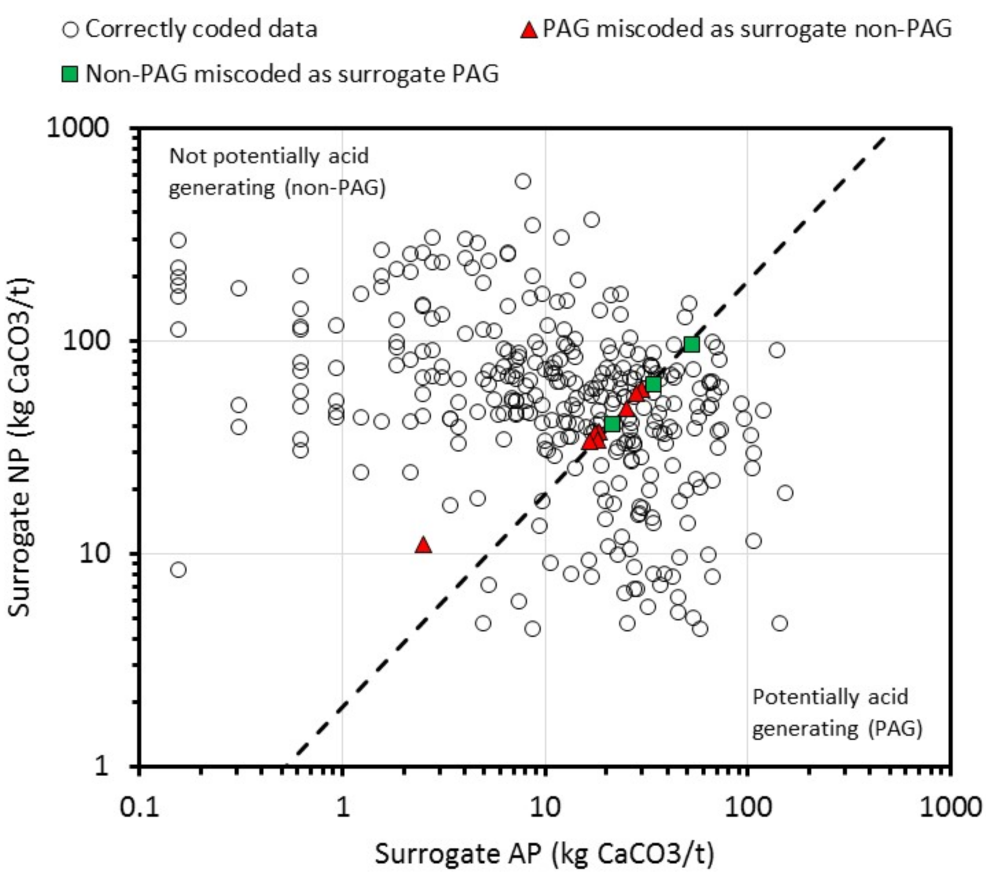
$$\text{Surrogate NP (kg } CaCO_3\text{/t)} = (30.4 * \text{ICP Ca (wt.\%)}) + 4.09$$



Dashed line indicates best fit linear trendline

Figure 6-6: Relationship of Modified Sobek NP with Aqua Regia ICP Calcium Content

This equation was used to calculate surrogate NP and the ICP sulphur data were used to calculate surrogate AP. The resulting surrogate NP/AP ratios were then sorted into PAG (NP/AP<1.9) and non-PAG (NP/AP≥1.9) and compared with the original ABA data. In total, 11 samples were miscoded, which represents 3% of the dataset. Three samples (1% of dataset) were classified as PAG but which the ABA data indicated were non-PAG. Eight samples (2% of dataset) were classified as non-PAG based on the surrogate data which the ABA data indicated were PAG. Those samples that were miscoded typically had surrogate and companion ABA NP/AP ratios that straddled the PAG to non-PAG divide (NP/AP = 1.9) (Figure 6-7). Only one sample showed a marked disagreement in its surrogate NP/AP (4.4) and ABA NP/AP (0.6), however, this sample had very low concentrations of both calcium and sulphur concentrations (and ABA measured NP and NP), leading to relatively large analytical uncertainty. Furthermore, the low sulphur content of this sample suggests its misclassification is unlikely to present an ARD risk in practice. That the vast majority of samples were correctly coded using surrogate NP and AP data indicates that aqua regia sulphur and calcium data can be reliably used to classify the ARD potential of waste rock during operations. As a precaution, and consistent with best practice, regular spot checks of total sulphur and NP content of waste rock material should be performed using conventional ABA methods (Leco sulphur and modified Sobek NP) to confirm the surrogate data during operations.



The dashed line indicates the site specific NP/AP = 1.9 which delineates Class C (non-PAG) material from Class A and B (PAG)

Figure 6-7: Surrogate NP/AP Data with Miscoded Samples Highlighted

7 SOURCE TERM DEVELOPMENT

Source terms generally refer to the unit release rate or leachate concentration of a range of constituents that are anticipated following the contact of water with geological materials (i.e., waste rock, tailings, etc.) under the expected conditions at a particular site. These source terms are used as inputs to the water quality prediction model to assess the effects of the project could potentially have on the receiving environment.

Preliminary source terms were developed using the results of the trickle leach column and humidity cell tests carried out by AEG. The historic kinetic test results from Cominco (NDM, 1996) were not considered for source term calculations due to their degraded detection limits. To determine long term, steady state source term concentrations, stabilization of constituent concentrations should be observed in the kinetic tests. Although many of the constituents of interest appear to be showing signs of stabilization in the longer running waste rock kinetic testing, some parameters have yet to fully stabilize, particularly in the shorter-running tests. As such, the source terms presented in this report should be considered preliminary and will be refined as necessary as sufficient kinetic testing data becomes available.

It is well recognized within the industry that prediction of field scale water chemistry from laboratory testing is an inexact science. The scaling of laboratory testing to field sized waste rock or tailings facilities, and then predicting the interactions of natural processes over the short and long term is complex. However, there is a growing body of knowledge in the industry of these processes and the practical application of laboratory and small scale field testing results to mine planning.

Laboratory testing can clearly show the potential for net acid generation, for neutralization and for metal leaching from different rock units. The kinetic test results indicate the relative rates of the reactions controlling acid generation and metal leaching. Geologic information combined with kinetic testing provides the basis for scaling up parameters that are controlled by particle size e.g. surface area, availability of neutralizing minerals. Field scale tests can provide calibration of water flow and flushing (albeit at a small scale). And then literature information wherein laboratory test programs are compared with actual field drainage water chemistry informs the prediction of the range of water chemistry that could be expected from mine components.

Taken together, this package of information provides a basis to:

- Identify rock units (geodomains) and mine components for which drainage water management is required;
- Design facilities to appropriately manage those rock types or mine products (such as tailings) to safely contain these materials;
- Design water management and water treatment facilities for the range of water quality that could be expected over the mine life and through closure; and
- Identify materials that can be used for construction or for mine closure without presenting an environmental risk.

And finally, as a result of these design decisions, the geochemical characterization program provides the basis for estimating the expected range of water chemistry and potential environmental impact for the selected design. This is an iterative process between the mine design, water quality objectives and the water quality predictions.

In order to convert laboratory-based constituent release rates to weathering rates that might be expected in the field, scaling factors need to be applied. Such scalars endeavour to compensate for release rate differences caused by a number of factors including:

- Water contact;
- Temperature; and
- Particle size and surface area.

7.1 SCALING FACTORS

7.1.1 PARTICLE SIZE

The weathering rate of waste rock is expected to be influenced by its particle size, with finer grained material weathering at a faster rate than coarser particles. Fines (2006) examined the grain size distribution of granitic waste rock at a site in northern Ontario and determined that approximately 30% of was <30 mm, 12% of material was <20 mm, and 3% was <5 mm in size. Studies of other waste rock particle size distribution returned comparable values (Neuner, 2009, Frostad et al., 2005). Tran (2003) also found that particles in the 5 to 30 mm size range experienced the majority of flushing were responsible for the majority of flushing of oxidation products.

Both the waste rock humidity cells (85% passing 6.3 mm) and trickle leach columns (100% passing 44 mm, majority in the ~30 mm size fraction) contain crushed material that is expected to contain a larger proportion of fines than the waste rock piles constructed in the field. To compensate for the differences in weathering rates related to particle size, scaling factors of 0.1 and 0.3 were applied to the humidity cell and trickle leach column data, respectively, broadly in line with the proportion of fines in each kinetic test that might be expected in the field scale waste rock pile.

The grain size of tailings used in the kinetic testing is expected to be comparable to those produced by the Process Plant. Therefore, a scaling factor of one (i.e., no change) was employed for the tailings humidity cell HC-3.

7.1.2 WATER CONTACT

The contact or flushing factor adjusts for the estimated proportion of material that will be wetted by infiltrating waters. Preferential pathways are expected to form within waste rock piles that result in only a fraction of the waste rock surface area coming into contact with water. Comparison of the annualized water flushing to rock mass ratios employed in the laboratory testing indicates the humidity cells and trickle leach columns receive approximately 26 L/kg/year and 2 L/kg/year, respectively. As part of the site water balance being developed by Knight Piésold Ltd. (KP, 2016), the annual precipitation estimated to fall on the Class A, B, and C Storage Facilities in an average precipitation year as a function of their respective mass is 0.04 L/kg/year, 0.01 L/kg/year, and 0.006 L/kg/year, respectively. The application of a scaling factor on these magnitudes may underestimate the loading rates. Furthermore, the flushing that the waste rock experiences will vary depending on the frequency and magnitude of rainfall events, and during snowmelt. Therefore, conservative scaling factors of 0.1 and 0.25 were applied to the humidity cell and trickle leach column data, respectively, to provide some adjustment for the lower flushing that the waste rock would be expected to experience in the field.

7.1.3 TEMPERATURE

The laboratory-based kinetic tests operate at room temperature (~22°C), much higher than the temperature of precipitation and run-off that might interact with the waste materials. The Arrhenius equation is commonly used to adjust for differences in temperature-depended reactions. Prior to the onset of acid generation, the oxidation of metal sulphides proceeds at a slower rate at lower temperatures. SRK and Mehling (2006) indicate that the oxidation rate of pyrite (and pyrrhotite), both of which are dominant metal sulphides detected in the waste rock and tailings material (Sections 5.1.1.1 and 5.1.3, respectively), at 5°C (i.e., average field temperature) is approximately 70% lower than that at room temperature (i.e., laboratory). Therefore, a scaling factor of 0.3 was deemed appropriate to compensate for the temperature difference. However, this was only applied to those constituents whose release was expected to be related to the oxidation of metal sulphide assemblages (i.e., sulphate, Sb, As, Bi, Cd, Co, Cu, Fe, Pb, Ni, Se, Ag, Te, Tl, U, Zn) or from the dissolution of carbonate phases in response to sulphide oxidation (e.g. alkalinity, acidity, Ca, Mg, Sr, Ba).

7.1.4 SCALED SOURCE TERMS

The various individual scaling factors are typically combined to produce an overall bulk scaling factor that is applied to the laboratory-based kinetic data to produce mass release rates that are an approximation of those anticipated under field conditions. The scaling factors employed are presented in Table 7-1. The cumulative scaling factors for constituent release rates from waste rock are 0.003 to 0.01 for the humidity cells and 0.023 to 0.075 for the trickle leach columns. Kirchner and Mattson (2015) compared the neutral drainage chemistry of mafic volcanic waste rock pile in a semi-arid climate to water quality predictions based on scaled kinetic testing. They found that cumulative scaling factors between 0.0001 and 0.04 were required to simulate the actual drainage chemistry, suggesting that the combined scaling factors employed here may be appropriate, or even relatively conservative.

Table 7-1: Scaling Factor Assumptions Employed in Source Term Estimations

	Waste Rock		Tailings
	Trickle Leach Columns	Humidity cells	Humidity cell
Particle size	0.3	0.1	1
Flushing	0.25	0.1	0.1
Temperature	0.3, 1 [a]	0.3, 1[a]	0.3
Cumulative scaling factor	0.0225, 0.075	0.003, 0.01	0.03

[a] Only those constituents expected to be released due to the oxidation of metal sulphide assemblages (i.e., sulphate, Sb, As, Bi, Cd, Co, Cu, Fe, Pb, Ni, Se, Ag, Te, Tl, U, Zn) or from the dissolution of carbonate phases in response to sulphide oxidation (e.g. alkalinity, acidity, Ca, Mg, Sr, Ba) were subjected to the 0.3 temperature scalar; all other constituents did not receive a temperature correction.

The last two months of trickle leach and humidity cell data release rates, which largely represent pseudo steady state conditions, were averaged and the appropriate scaling factors applied. The tailings humidity cell (HC-3) has clearly not reached steady state and is still undergoing flushing, however, in the interests of developing a conservative estimate of drainage quality, the average of the latest eight weeks of release rate data was used for HC-3. Similarly, trickle leach column C-9 (MDS geodomain) is in its early stages; the eight weeks of weekly release rate data for this column were used, although the concentrations of many constituents still appear to be declining. The resulting source term estimations for selected parameters are displayed in Table 7-2.

Comparison of trickle leach column C-5 with humidity cell HC-1, which are charged with the same composite waste rock material, indicates they have similar scaled constituent leaching rates which are typically within a factor of two of each other.

No laboratory-based kinetic testing is available for the CA CL MAF geodomain. Although the field barrel testing only has five sets of monthly data, the constituent release rates from the CA CL MAF field barrel (FB-4) from the early field bin data were used to represent element leaching from this geodomain. Weekly constituent release rates were calculated for each sampling event based on the parameter concentration, volume of leachate collected, and time elapsed between sampling events. The average of these release rates was then used. Given that the field bins are composed of course chips of drill core material and are located at site, no scaling factors for particle size and temperature were applied. However, the flushing that the field barrel experienced from precipitation between November, 2015 and October, 2016 was 0.25 L/kg. Given the small overall size of the field barrel rock compared to the final waste rock storage configuration, a scaling factor for flushing is appropriate and has conservatively been estimated as 0.5 for this field barrel. Therefore, an overall scaling factor of 0.5 was applied to the CA CL MAF field barrel average mass loading rate for each constituent of interest.

Table 7-2: Source Terms Scaled from Laboratory-based Kinetic Testing for Selected Parameters

Column ID	Waste Rock Classification	Predominant Geodomain	SO_4	F	Al	Sb	As	Cd	Ca	Cu	Fe	Pb	Mg	Mn	Ni	Se	U	Zn
			mg/kg/week															
C-1	C	AK RHYv	0.028	0.00013	0.000060	0.00000020	0.00000021	0.0000000054	0.017	0.00000030	0.0000044	0.000000083	0.0084	0.0000055	0.000000053	0.00000048	0.0000071	0.0000010
C-2	C	PY AK RHYv, PY AK RHYc	0.034	0.00012	0.000071	0.0000012	0.000000046	0.000000010	0.018	0.00000029	0.0000016	0.000000046	0.0071	0.000089	0.000000059	0.00000053	0.0000064	0.00000082
C-3	B	MU PY RHY	0.026	0.00011	0.000047	0.000011	0.00000026	0.00000019	0.015	0.00000048	0.0000016	0.00000083	0.0040	0.00014	0.00000012	0.0000033	0.000029	0.000012
C-4	B	CARB MDS/RHY	0.071	0.000080	0.000018	0.0000068	0.00000019	0.00000030	0.022	0.00000042	0.0000020	0.00000023	0.0084	0.00027	0.0000020	0.000011	0.0000030	0.000031
C-5	B	PY AK RHYv	0.077	0.000089	0.000033	0.00000086	0.000000053	0.000000043	0.026	0.00000047	0.0000018	0.000000056	0.0096	0.00017	0.00000017	0.0000024	0.0000031	0.0000041
C-6	C	Mix	0.033	0.000085	0.000053	0.0000051	0.00000018	0.000000091	0.018	0.00000040	0.0000016	0.00000028	0.0058	0.00014	0.00000012	0.0000036	0.000020	0.0000065
C-7	A	CARB MDS/RHY, PY CL RHY	0.088	0.00014	0.000060	0.0000029	0.0000090	0.000015	0.020	0.000041	0.00013	0.00011	0.0077	0.0028	0.000029	0.000014	0.0000034	0.0014
C-8	B	RHYi	0.020	0.00011	0.000065	0.0000044	0.000043	0.00000016	0.011	0.00000045	0.0000016	0.00000063	0.0027	0.00013	0.00000016	0.00000056	0.000015	0.000011
C-9	C	MDS	0.11	0.00023	0.000030	0.0000013	0.0000029	0.000000023	0.040	0.00000054	0.0000016	0.00000014	0.012	0.000013	0.0000037	0.0000016	0.000041	0.000002
HC-1	B	PY AK RHYv	0.048	0.00010	0.00013	0.0000012	0.00000012	0.000000054	0.024	0.00000066	0.0000029	0.00000031	0.0079	0.00018	0.00000033	0.0000029	0.0000019	0.000012
HC-2	B	CARB MDS/RHY	0.21	0.00018	0.000012	0.0000013	0.000000088	0.00000012	0.007	0.00000054	0.0000026	0.00000027	0.0038	0.00011	0.00000021	0.0000017	0.00000055	0.000036
HC-3	A	Tailings	15	0.0025	0.000021	0.000045	0.000013	0.00024	5.1	0.000031	0.000038	0.000051	1.0	0.025	0.00045	0.0034	0.000014	0.014

8 CONCLUSIONS

8.1 STATIC TESTING

- ABA measurements of sulphide content and NP indicated that majority of waste rock associated with the AK RHYc, AK RHYv, MDS, and CA CL MAF geodomains is predominantly non-PAG. These units largely comprise the shallower portions of the ABM open pit (AK RHYc, AK RHYv) and the footwall (CA CL MAF).

- Waste rock from geodomains associated with the upper mineralization envelope (PY CL RHY, MU PY RHY, CARB MDS/RHY) tended to have higher sulphide sulphur content than the other geodomains and is predominantly PAG. Samples from the Krakatoa Zone RHYi geodomain were also largely PAG, primarily due to their low NP content.

- Elevated trace element concentrations (e.g., lead, selenium, antimony, arsenic) were observed more frequently in rock samples from the predominantly PAG geodomains (PY CL RHY, MU PY RHY, CARB MDS/RHY), although the CA CL MAF geodomain also returned elevated arsenic concentrations for the majority of its samples.

- SFE testing indicated that, where present elevated soluble trace element concentrations were generally associated with rock samples from the PY CL RHY, CARB MDS/RHY, and MU PY RHY geodomains. Notable exceptions included consistently elevated levels of soluble arsenic from the CA CL MAF rock samples, likely related to its high arsenic content, and pH driven solubilisation of aluminum noted across almost all geodomains. SFE soluble levels of arsenic, antimony, and selenium exhibited moderate positive correlations with their bulk concentration across the dataset as a whole.

- Mineralized rock samples were all PAG, although the moderate to relatively high NP content found in the majority of samples may significantly delay the onset of acid generation. SFE leachate from the mineralized rock samples typically showed elevated concentrations of selenium, lead and zinc.

- Tailings samples were all PAG and also had relatively high levels of NP that may delay acid generation for many years. SFE tailings leachates consistently contained elevated concentrations of selenium, copper, cadmium, zinc, and lead. Supernatant from the tailings locked cycle tests also contained elevated concentrations of copper, lead, and selenium.

- Overburden samples all had very little sulphur and were non-PAG, with generally low levels of SFE soluble metals, although moderate levels of soluble copper were associated with overburden collected from the ABM open pit area.

8.2 KINETIC TESTING

- Following initial flushing, consistently elevated concentrations of selenium, antimony, arsenic, and uranium were observed in a number of waste rock trickle leach columns. Antimony, selenium, and uranium leachate concentrations showed a positive correlation with sulphate suggesting their release was related to sulphide oxidation. Carbonate complexation likely plays a role in facilitating the mobilization of uranium at the circumneutral pH of the column leachates.

- Columns composed of low sulphur and higher NP material (i.e., Class C waste rock) tended to exhibit lower levels of trace element leaching. Conversely, the Class A column (C-7) typically showed the highest trace element concentrations, including metals such as cadmium, zinc, lead, and copper which showed an increasing trend as the leachate pH has declined.

- Relatively low trace elements concentrations were observed in the waste rock humidity cell leachates, although elevated selenium concentrations were noted. Depletion rate calculations for the waste rock humidity cells indicated that samples with a site-specific NP/AP ratio of 1.9 would be unlikely to generate acid in the long term. Calculated times to NP depletion also suggested that acid generation in the PAG material may take decades to appear.

- Elevated levels of selenium and uranium were observed in the leachate from numerous field barrels. Both elements exhibited a moderate positive correlation with sulphate concentration. Arsenic was consistently elevated for the CA CL MAF geodomain only, consistent with the SFE data for this rock type.

- The circumneutral pH of the tailings humidity cell leachate returned very high concentrations of cadmium, zinc, and selenium.

8.3 WASTE ROCK CLASSIFICATION

- Inspection of NP/AP ratios suggested that material with a total sulphur content greater than 2.9 wt.% should be separated as Class A (i.e., strongly PAG and metal leaching) waste rock. Based on the life of mine and average humidity cell NP depletion rates, waste rock with an NP less than 10 kg $CaCO_3$/t is also Class A.

- Humidity cell data regarding the rates of acid production and neutralization, and the time to sulphide and carbonate mineral depletion indicated that rock with an NP/AP ratio greater than 1.9 can be categorized as Class C waste rock, which is non-PAG and has low potential for metal leaching.

- Class B material (weakly acid generating and moderately metal leaching) is classified as material with an NP/AP ratio less than 1.9, but which does not satisfy the Class A criteria. Due to its propensity to leach arsenic, all of the CA CL MAF (i.e., Mafic Volcanics grouping) waste rock that would otherwise be categorized as Class C is designated Class B.

- Although antimony, selenium, and uranium leaching was also identified to leach at elevated levels for some samples, the ABA-based classification criteria were effective in allocating the vast majority of samples that had elevated concentrations of these trace elements to the Class A and B waste categories.

- Surrogate measures of total sulphur and NP based on aqua regia ICP-AES/MS measurements of sulphur and calcium content, respectively, were effective in reproducing the ABA-based waste classification distribution in the sample set, with only minor (3%) miscoding of acid generating samples. As such, aqua regia digest data may be used in place of more expensive and time consuming ABA analyses, although periodic cross checking of surrogate data with ABA analysis is recommended.

9 RECOMMENDATIONS

- Laboratory-based kinetic testing should be continued beyond 40 weeks until constituent concentrations of interest have stabilized to allow greater confidence in source term calculations and scoping drainage water quality estimates;

- When the kinetic testing was initially planned, the CA CL MAF geodomain was anticipated to represent a minor proportion of the ABM open pit waste rock (5%). Although it still only comprises 7% of the overall rock expected to be excavated, its tendency to leach arsenic suggests that the initiation of a CA CL MAF laboratory-based kinetic test would be beneficial to understanding its long term arsenic leaching potential. This would enhance the development of this source term and provide a comparator to the field barrel data;

- Similarly, the MDS geodomain was anticipated to comprise a minor component of the waste rock (3%) but now comprises 9% of the overall excavated waste rock mass. Although a trickle leach column charged with MDS waste rock is ongoing, the construction of an MDS field barrel should also be considered to evaluate drainage chemistry of a larger scale and provide a comparator to the laboratory data; and

- The source terms that have been developed to date are based on near neutral drainage chemistry. Both the Class A and Class B Storage Facilities are anticipated to become net acid generating at which time trace element release rates can be expected to increase. It may take many months or years for the current low NP/AP laboratory kinetic experiments to become acidic, therefore, consideration should be given to constructing NP-depleted tailings and waste rock kinetic experiments to accelerate the development of acidic conditions. The acidic trace element release rates from these experiments would then inform the drainage water quality anticipated in the longer term from the Class A and B Storage Facilities.

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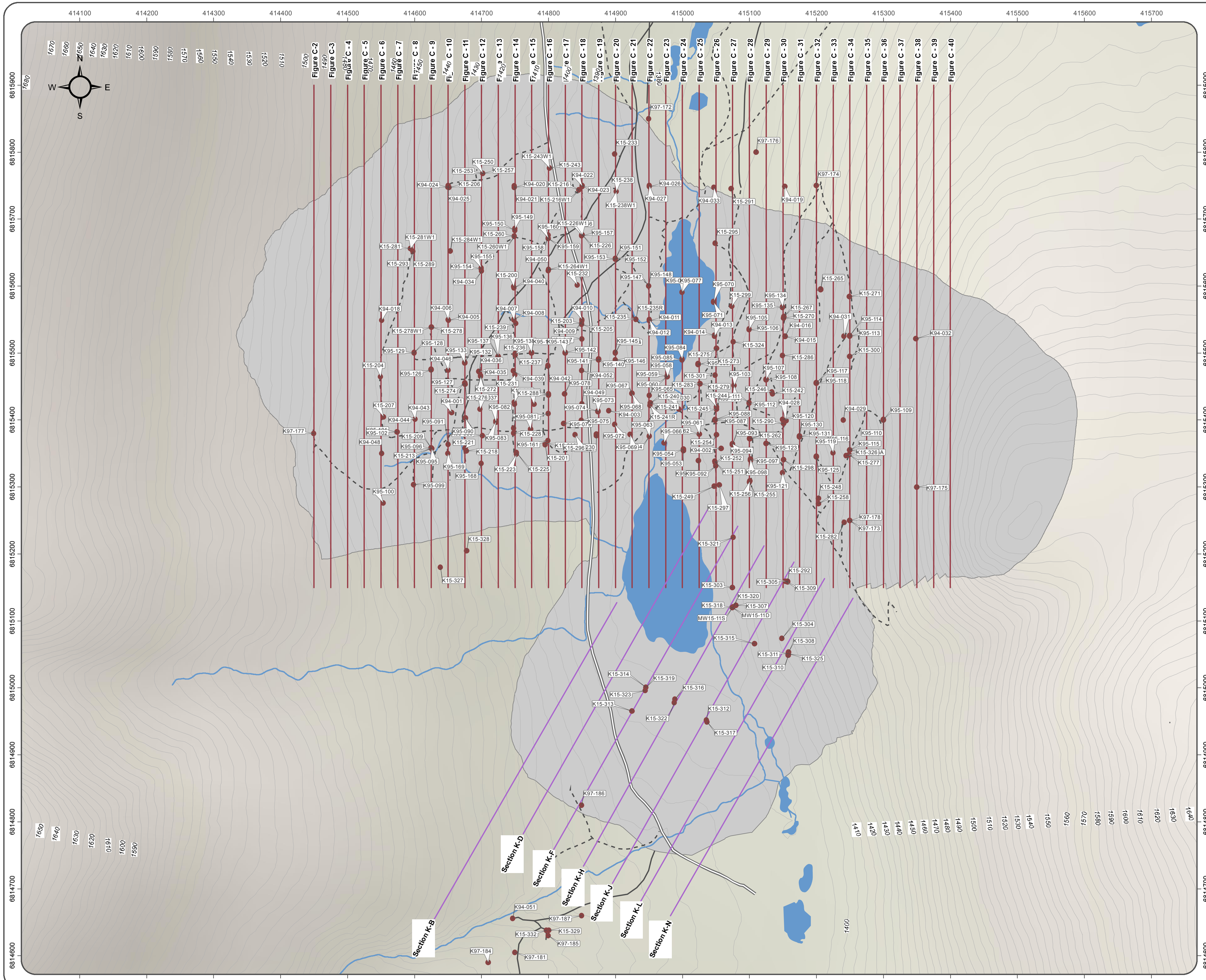
APPENDIX A.
Sampling Locations in ABM Open Pit (Cross Sections and Plan View)



BMC MINERALS

KUDZ ZE KAYAH PROJECT

FIGURE C-1
1994, 1995, 1997 AND 2015
DRILL HOLE LOCATIONS

MAY 2016

- Drill Hole Locations
- Krakatoa Zone Cross Section
- ABM Zone Cross Section
- Tote Road
- Secondary Road
- Trail
- Watercourse
- Waterbody
- Contour (5m Interval)
- ABM Pit

Alexco Environmental Group

Digital elevation model created by the Yukon Department of the Environment interpolated from the digital 1:50,000 Canadian National Topographic Database (NTDB Edition 2) contour and watercourse layers. Obtained from Geomatics Yukon.

Transect Lines were reproduced from Equity Exploration Consultants Ltd. (2015) report "ABM Deposit Waste Rock Geodomains. Release 1.0, November 6, 2015"

Datum: NAD 83; Projection UTM Zone 9N

1:5,500 when printed on 11 x 17 inch paper

0 50 100 150 200 250

Meters

D:\Project\AllProjects\Kudz_Ze_Kayah\Maps\01_Overview\03-SpecificTopics\CrossSectionTransects\Krakatoa_Pit_Transects_20160524.mxd
(Last edited by: amatlashevska; 5/25/2016/09:21 AM)

1500m
1400m
1300m
1200m
6815400mN
6815600mN
K97-177
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
0
40m
1 : 500
BMC Minerals (No.1) Ltd.
KZK Project
414450E
Looking West
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-2

LEGEND

- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

414475E
Looking West

EQUITY

Date: 19-May-2016	Figure:
Proj: UTM 9 - NAD83	C-□
Prov: YK	

LEGEND

- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

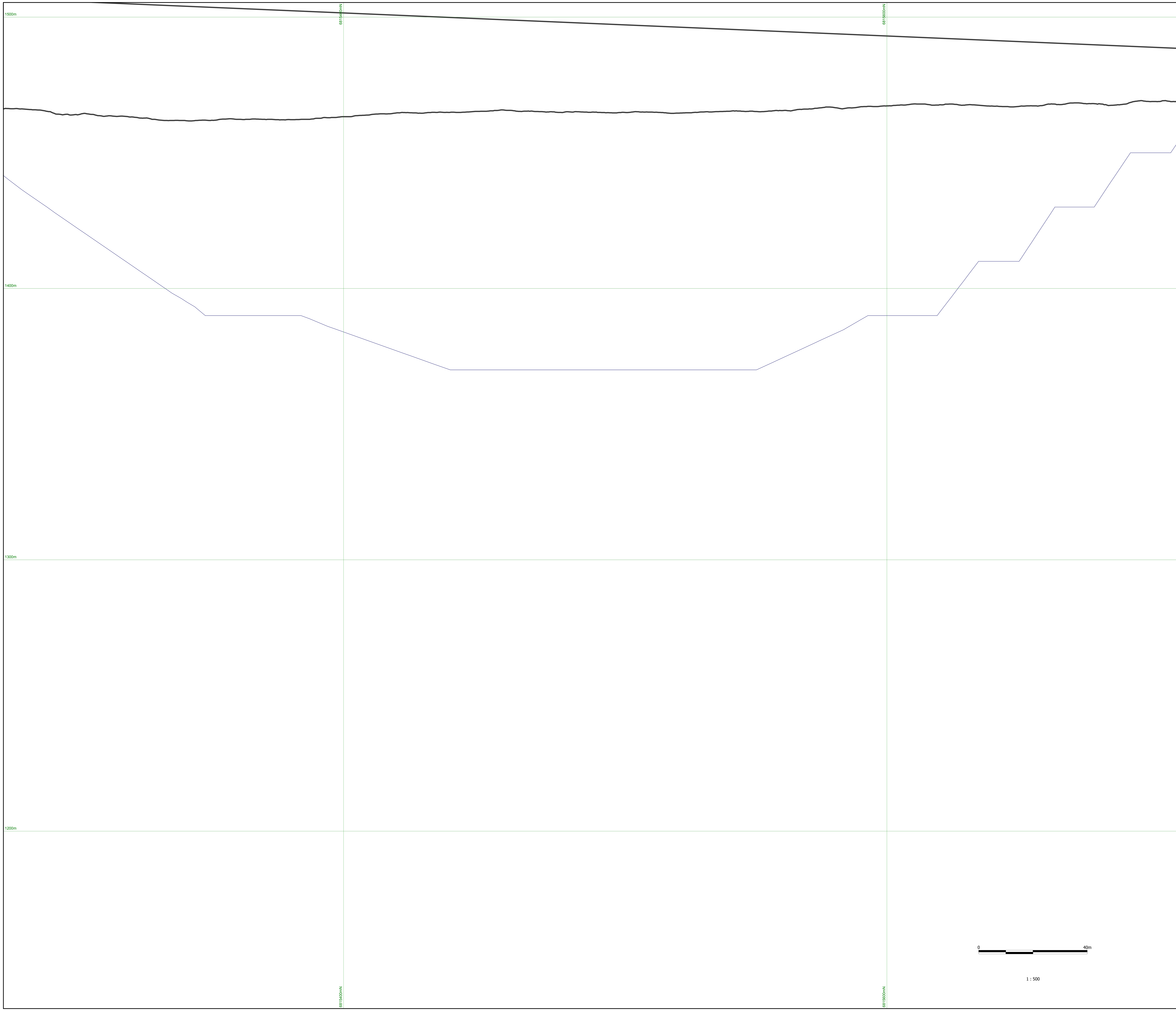
KZK Project

414500E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-□



LEGEND
- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

414525E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: C-☐


1500m
1400m
1300m
1200m
K94-048
K15-207
K15-204
K94-018
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PY AK RHYc
B00264215
B00264213
2015_207_30.1
PY AK RHYc
PY AK RHYc
PY AK RHYc
2015_204_23.2
PY AK RHYc
2015_204_29.6
PY AK RHYc
B00264242
2015_204_58.74
CARB MDS/RHY
CARB MDS/RHY
2015_207_57.5
PY CL RHY
2015_207_63.55
2015_207_65.7
PY CL RHY
PY CL RHY
2015_207_66.7
PY CL RHY
2015_204_95.6
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PY CL RHY
PY CL RHY
2015_204_107.1
PY CL RHY
2015_204_129.4
MU PY RHY
0
40m
1 : 500
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
414550E
Looking West
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-☐


1500m
6815400mN
6815600mN
1500m
1400m
1400m
K95-101
K95-102
1300m
1300m
K15-281W1
K15-281
1200m
K94-018
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
414575E
Looking West
0
40m
1 : 500
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-☐
6815400mN
6815600mN

1500m
1400m
1300m
1200m
6815400mN
6815600mN
K94-043
K94-044
K95-128
K95-129
K15-281
K15-281W1
K15-289
K15-293
CARB MDS/RHY
0
40m
1 : 500
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
414600E
Looking West
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-□

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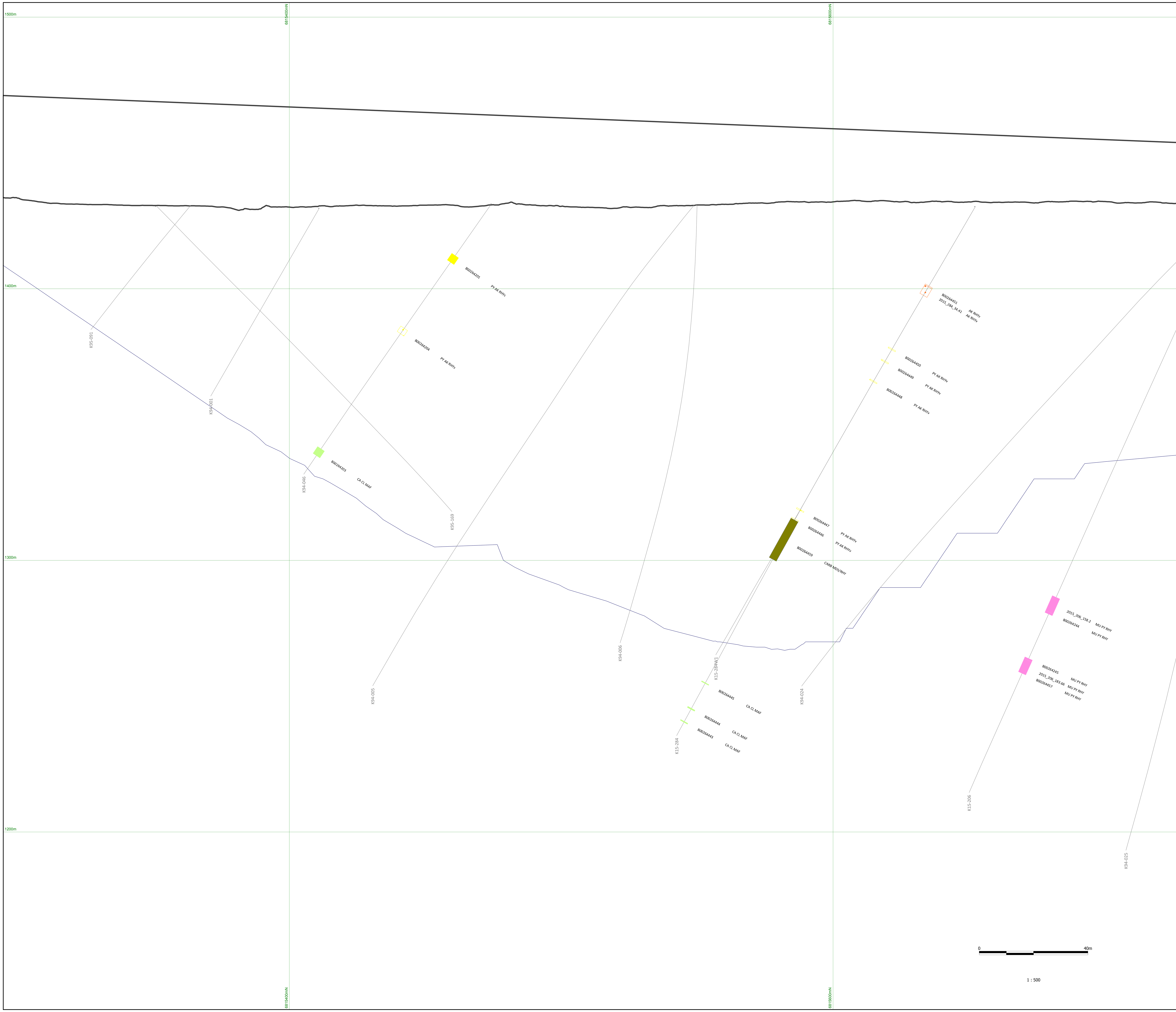
KZK Project

414625E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-□



LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi

BMC Minerals (No.1) Ltd.

KZK Project

414650E
Looking West

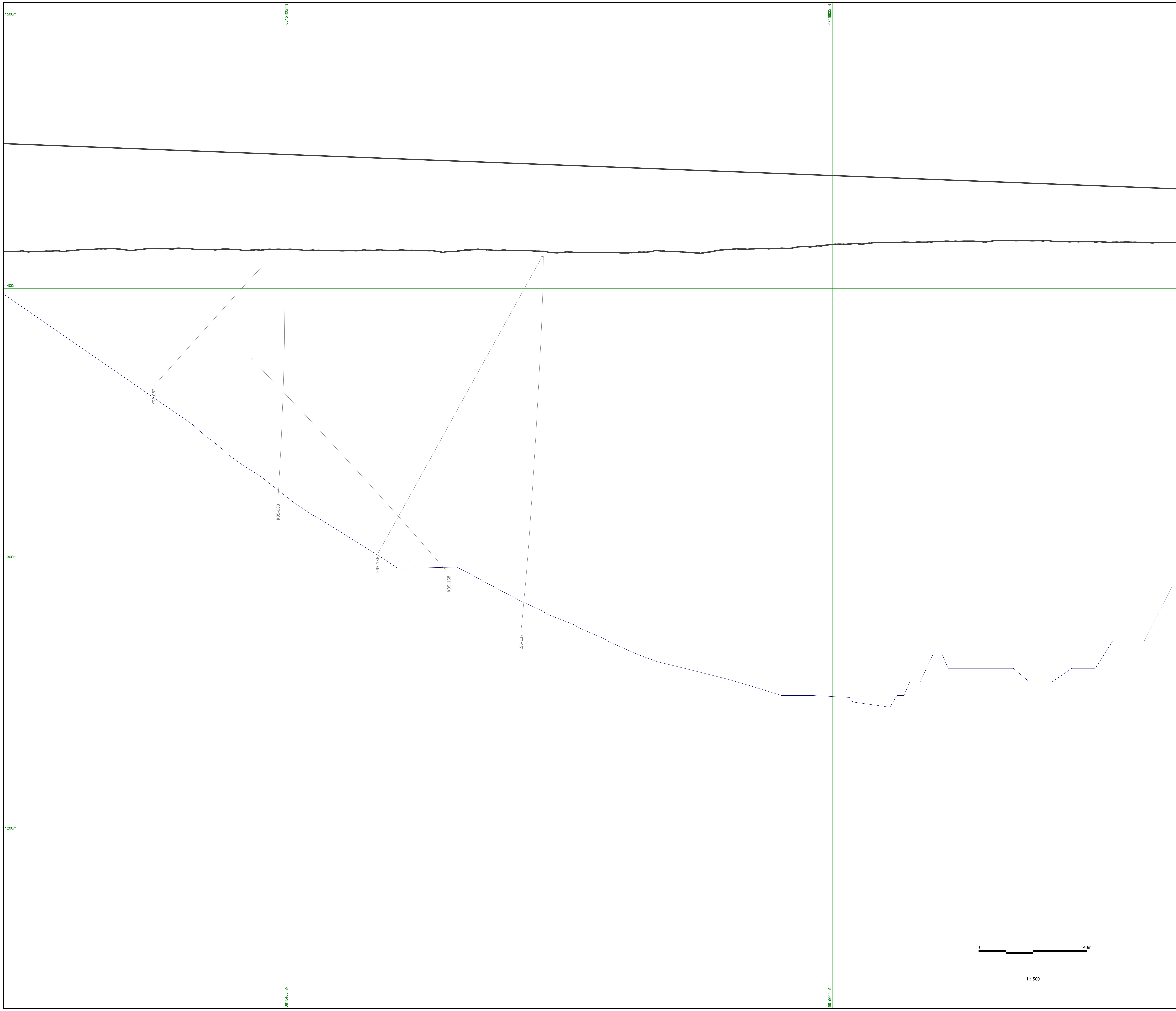
EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-□□


1500m
1400m
1300m
1200m
6815400mN
6815600mN
6815800mN
K15-218
K15-221
K95-089
K95-090
K15-276
K15-274
K95-132
K95-133
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
0
40m
1 : 500
BMC Minerals (No.1) Ltd.
KZK Project
414675E
Looking West
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-□□

1500m
1400m
1300m
1200m
K95-168
K95-036
K94-037
K15-269
K15-272
K94-035
K94-034
K95-154
K95-155
K15-250
K15-253
K15-257
0
40m
1 : 500
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
414700E
Looking West
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-2



LEGEND
- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

414725E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: C-13


LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
414750E
Looking West
0
40m
1 : 500
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-1

LEGEND

- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

414775E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: C-1

BMC Minerals (No.1) Ltd.

KZK Project

414800E
Looking West

EQUITY

Date: 19-May-2016

Proj: UTM 9 - NAD83

Prov: YK

Figure:

C-1

1500m
1400m
1300m
1200m
6815400mN
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K95-142
K95-143
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2015_216_185.9
CA CL MAF
CA CL MAF
K15-216
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
414825E
Looking West
0
40m
1 : 500
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-1

BMC Minerals (No.1) Ltd.

KZK Project

414850E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: C-1


1500m
1400m
1300m
1200m
6815400mN
6815600mN
6815800mN
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B00293234
RHYi
RHYi
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CA CL MAF
CA CL MAF
K95-073
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K95-074
K95-140
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K15-238
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
414875E
Looking West
0
40m
1 : 500
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-1

BMC Minerals (No.1) Ltd.

KZK Project

414900E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: C-

LEGEND

- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

414925E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-1

1500m
1400m
1300m
1200m
6815400mN
6815600mN
K95-063
K95-064
K15-240
K15-241R
K95-065
K94-011
K15-235R
K15-235
K95-148
K94-026
K94-027
0
40m
1 : 500
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
414950E
Looking West
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-

1500m
1400m
1300m
1200m
6815400mN
6815600mN
K95-066
K95-058
K95-059
K95-060
K95-147
2015_279_180.32 PY CL RHY
2015_279_193.6 PY CL RHY
K15-291
K15-279
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
414975E
Looking West
0
40m
1 : 500
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-3

1500m
6815400mN
6815600mN
1400m
1300m
1200m
K95-053
K95-054
K94-030
K95-084
K95-085
K95-076
K15-279
K15-283
K95-077
K15-291
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
415000E
Looking West
0
40m
1 : 500
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-

1500m
6815400mN
6815600mN
1400m
1300m
1200m
K95-057
K95-061
K95-062
K95-055
K95-084
K95-056
K15-279
K15-283
K15-291
B00264456
B00264455
PY AK RHYv
PY AK RHYv
E00264367
2015_279_49.27
PY AK RHYc
PY AK RHYc
E00264422
PY AK RHYc
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
0
40m
1 : 500
BMC Minerals (No.1) Ltd.
KZK Project
415025E
Looking West
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-

BMC Minerals (No.1) Ltd.

KZK Project

415050E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-

LEGEND
- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

415075E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-

LEGEND

- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

415100E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-

LEGEND

- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

415125E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-

LEGEND

- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

415150E
Looking West

EQUITY

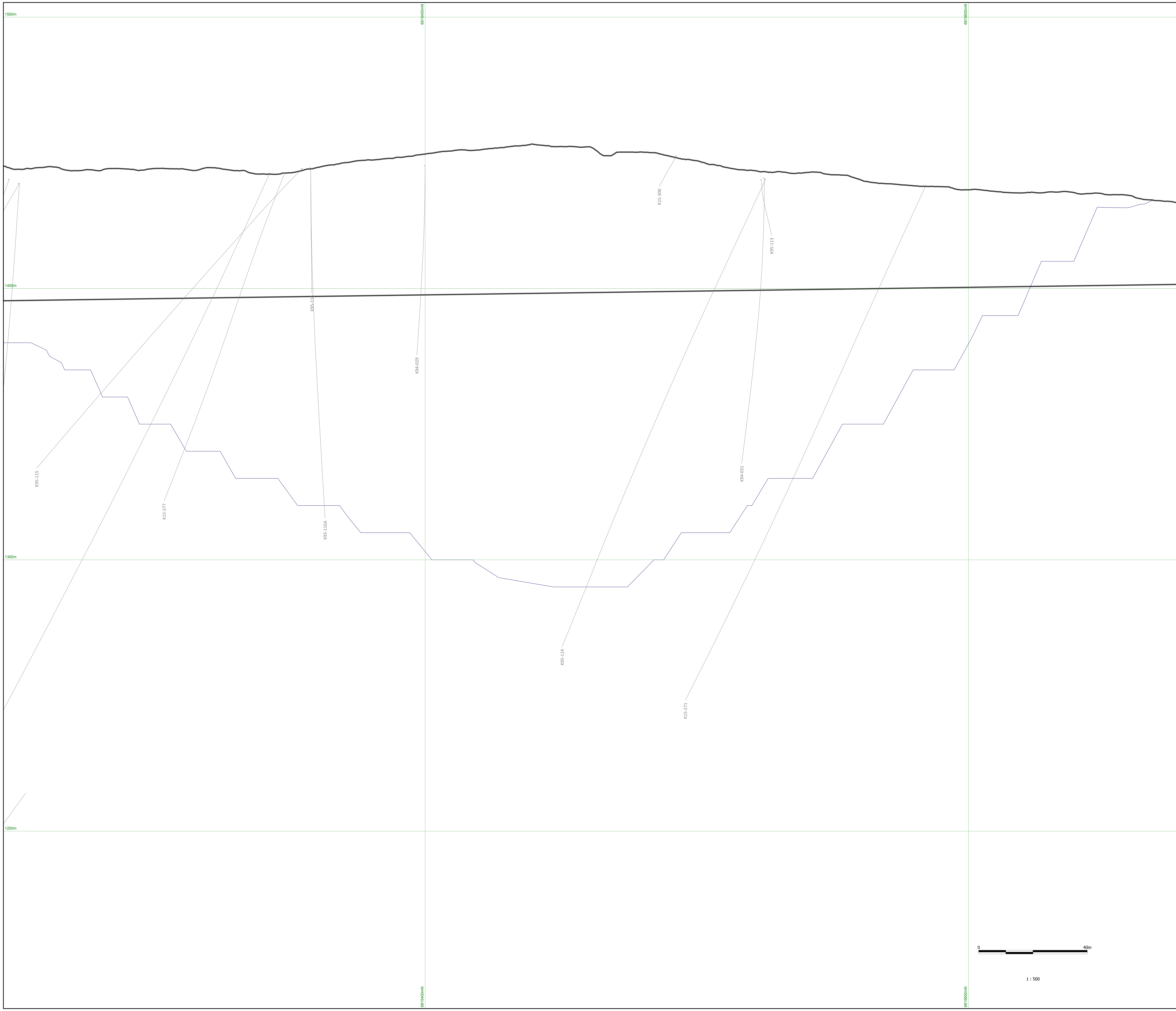
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: C-3


1500m
6815400mN
6815600mN
1400m
1300m
1200m
K95-130
K15-262
K95-131
K95-117
K15-265
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
0
40m
1 : 500
BMC Minerals (No.1) Ltd.
KZK Project
415175E
Looking West
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-31

1500m
1500m
6815400mN
6815600mN
1400m
1400m
1300m
1300m
1200m
2015_258_50.4
PY AK RHYv
K15-262
K95-125
K95-117
K95-118
K15-265
ECC264346
2015_265_200.9
MU PY RHY
MU PY RHY
2015_265_202.5
MU PY RHY
B00264338
PY AK RHYv
B00264337
CARB MDS/RHY
B00264336
MU PY RHY
2015_263_217.35
MU PY RHY
K15-263
K15-248
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
415200E
Looking West
0
40m
1 : 500
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-3
EQUITY

1500m
6815400mN
6815600mN
1400m
1300m
1200m
K95-119
K94-029
K95-114
K15-262
K15-271
K94-031
0
40m
1 : 500
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
415225E
Looking West
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-33



BMC Minerals (No.1) Ltd.

KZK Project

415250E
Looking West

EQUITY

Date: 19-May-2016

Proj: UTM 9 - NAD83

Prov: YK

Figure: C-3


1500m
6815400mN
6815600mN
1500m
K15-300
K95-113
1400m
1400m
1300m
1300m
1200m
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
0
40m
1 : 500
BMC Minerals (No.1) Ltd.
KZK Project
415275E
Looking West
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-3
6815400mN
6815600mN

BMC Minerals (No.1) Ltd.

KZK Project

415300E
Looking West

EQUITY

Date: 19-May-2016

Proj: UTM 9 - NAD83

Prov: YK

Figure: C-3

LEGEND
- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

415325E
Looking West

EQUITY	Date: 19-May-2016	Figure:
	Proj: UTM 9 - NAD83	C-3
	Prov: YK	

LEGEND

- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

415350E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-3

LEGEND
- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

415375E
Looking West

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: C-3

LEGEND
- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

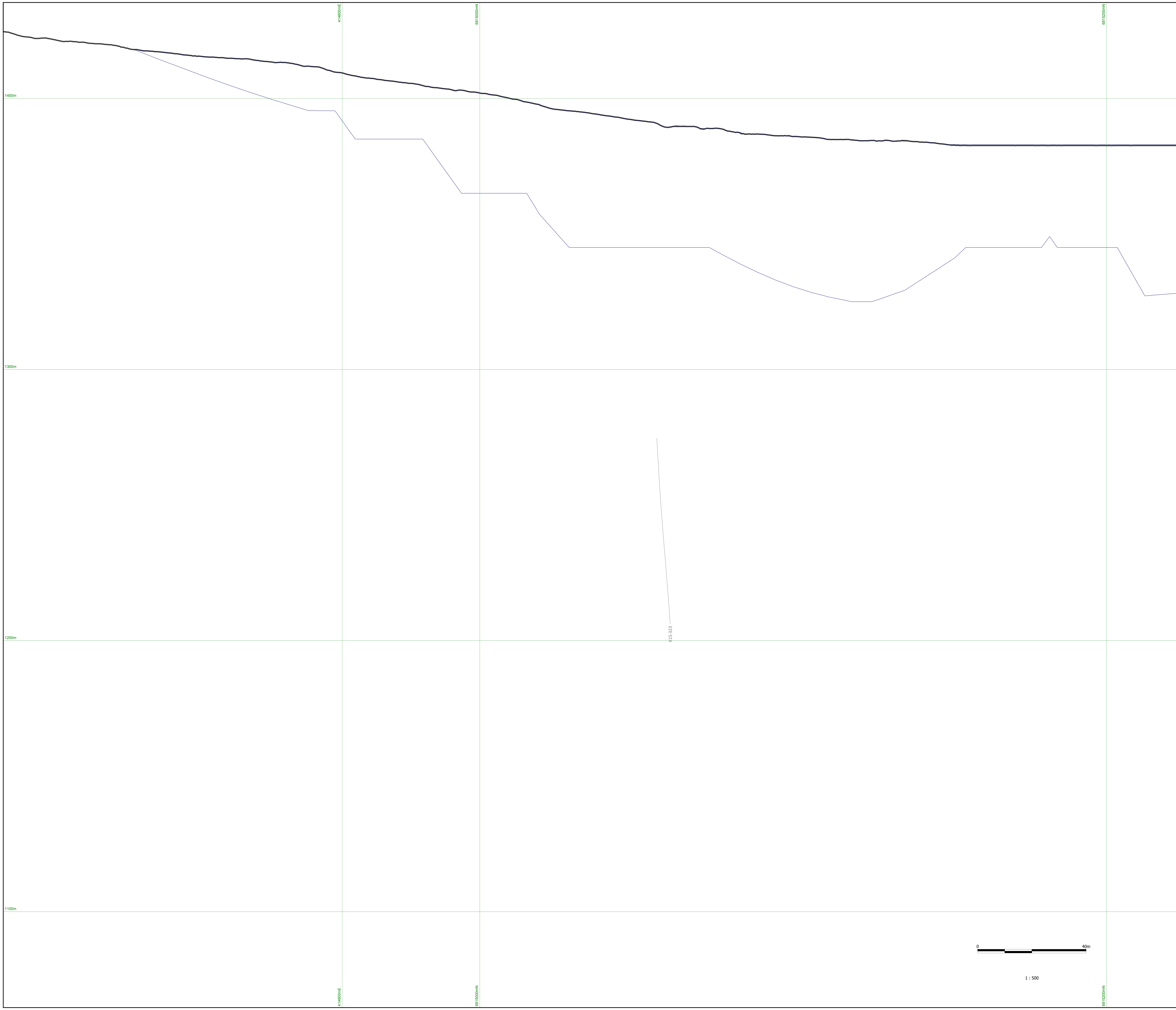
KZK Project

415400E
Looking West

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-



LEGEND

- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

K-B
Looking Northwest

EQUITY

Date: 19-May-2016

Proj: UTM 9 - NAD83

Prov: YK

Figure: C-41

LEGEND
- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

K-D
Looking Northwest

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure:
C-42

LEGEND

- AK RHYc
- AK RHYv
- CA CL MAF
- CARB MDS/RHY
- PY AK RHYc
- PY AK RHYv
- PY CL RHY
- MDS
- MU PY RHY
- RHYi

BMC Minerals (No.1) Ltd.

KZK Project

K-F
Looking Northwest

EQUITY

Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: C-43


1400m
1300m
1200m
1100m
B00293251
RHYi
B00293252
RHYi
B00293253
RHYi
B00293254
RHYi
B00264410
MU PY RHY
K15-316
K15-320
K15-322
K15-305
K15-318
K15-307
K15-303
K15-297
0
40m
1 : 500
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
K-H
Looking Northwest
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-44


1400m
1300m
1200m
1100m
K15-312
K15-315
K15-317
K15-304
K15-309
K15-305
K15-303
K15-292
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
K-J
Looking Northwest
0
40m
1 : 500
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-45
EQUITY

BMC Minerals (No.1) Ltd.

KZK Project

K-L
Looking Northwest

EQUITY

Date: 19-May-2016

Proj: UTM 9 - NAD83

Prov: YK

Figure:

C-46

6814800mN
6815000mN
415200mE
1400m
1300m
1200m
K15-325
0
40m
1 : 500
LEGEND
AK RHYc
AK RHYv
CA CL MAF
CARB MDS/RHY
PY AK RHYc
PY AK RHYv
PY CL RHY
MDS
MU PY RHY
RHYi
BMC Minerals (No.1) Ltd.
KZK Project
K-N
Looking Northwest
EQUITY
Date: 19-May-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
C-47

APPENDIX B.
ARD/ML Sampling Plan for Kudz Ze Kayah Memorandum

3 Calcite Business Centre, 151 Industrial Road
Whitehorse, Yukon Y1A 2V3
Phone (867) 668-6463 Fax (867) 633-4882
www.accessconsulting.ca

Memorandum

To: Kelli Bergh, BMC Minerals (No. 1) Ltd.

From: Andrew Gault, Linda Broughton, AEG

CC: Kai Woloshyn, AEG

Robin Black, BMC

Date: October 16, 2015

Re: Memo_ARD/ML Sampling Plan for Kudz Ze Kayah

INTRODUCTION

This memorandum summarizes the sampling plan, field barrel set-up and initial set of analyses for historic and fresh core samples drilled from the Kudz Ze Kayah deposit. A subset of historic samples (Cominco, NDM 1996) drilled in the mid 1990's have been identified for re-analysis, partly to as a quality check on the acid-base accounting (ABA) analysis performed on these samples, but also to evaluate the build-up of weathering products during the 20 years that the historic core has been stored at site. It is anticipated that an understanding of the extent of weathering, and determination of the soluble fraction that is easily flushed in particular, will provide for a rapid initial evaluation of metal mobility from these samples which may be used to provide scoping level source terms.

BACKGROUND TO SAMPLING

The sampling program proposed herein is based on the information available to date, as well as informed by recent discussions with BMC and their consultants. BMC is currently in the process of a substantial reinterpretation of the deposit geology, as well as relogging of the historic core. This will then be used for the development of the block model and subsequent mine plan and schedule. It is recognized therefore that this sampling program is being developed in parallel with BMC's drilling program and geologic characterization/modelling. It is further recognized that there may be some duplication and/or (to a lesser extent) gaps in the suite of samples, as well as potentially some re-interpretation needed in the data assessment phase, as a result of the parallel development of geologic and geo-environmental characterization. BMC's understanding of the deposit and ongoing input to this proposed plan are appreciated and will improve the representativeness of this program. For this reason, a brief description of the logic behind the sample selection is provided below.

The four main sources of variability considered in the waste rock management planning and the environmental impact assessment, and that this program is designed to address are:

1. Waste quantities – at this stage, the relative quantities of waste have been estimated by BMC in 2D for sections across the deposit and within the "Cominco pit limit". This formed the basis for estimating the most abundant waste rock and, to a lesser extent wall rock units, to prioritize sample numbers. The "Cominco pit limits" are the basis for this sampling program.

2. Spatial variability – this is linked to the geologic controls, in that both deposit evolution and structural controls determine variability across the deposit. The previous work on ML/ARD (metal leaching/acid rock drainage) focussed on samples in the western section of the pit. Thus, this program will expand to include waste from drill core on sections across the deposit. Work is planned with BMC to develop a better understanding of the variability over depth (within each geodomain). The sampling program proposed, is designed to focus on a range of samples spatially distributed across the deposit and over depth. Within that spacing, the sample numbers and intervals prioritize more variable and abundant geodomains.

3. Geologic controls and variability – BMC's ongoing work on the revised geodomains will substantially improve the interpretation of the environmental geochemistry across the deposit, and has already supported some additional understanding of some outstanding questions from the earlier ARD work. Alexco Environmental Group's (AEG) analysis of the variability of static test data from the historic core, considering both the original logging and BMC's relogging were used to inform this sampling program design. The program was designed to prioritize geodomains or zones that show a range of sulphide, carbonate or metals of interest in the available data. Discussions on October 14th, 2015 assisted this general understanding. However, the additional information BMC is developing, and the integration of the results of this program will be required to characterize this variability for waste rock management planning.

   One question that merits further discussion is about the delineation of an oxidation front within the deposit. Sampling and testing of this material, as distinct from the deeper and less oxidized sulphides, is of interest both environmentally and metallurgically. Oxidation of sulphides tends to result in more readily soluble species and therefore adversely affect water quality. Further, from a metallurgical point of view, oxidation can adversely affect flotation performance; therefore any oxidized ore that might not be processed and/or might be stockpiled needs to be considered in the environmental management plan. If there is an "oxide" or "transition zone" identified that represents substantial waste (particularly early waste), this should be identified by BMC and will be sampled distinctly within this program for evaluation of the readily soluble component.

4. Temporal - this program will evaluate both metal leaching and the evolution of net acidic drainage over time. The timing limitations to date for this project mean that kinetic testing will likely not be complete within the duration of the EA schedule. The program has been adjusted to make best value of the existing historic data, as well as the range of geochemical prediction tests now available.

HISTORIC CORE

Tables 1 and 2 lists the historic core samples that have been identified for static testing, which encompasses all the major geodomains identified by BMC geologists, with a priority for those domains that showed significant variability in the historic ABA work (PY AK RHYv, PY MU RHYc, PY MU MUDS, PY AK RHYc), or are expected to form a significant fraction of the pit wall/base (CA CL MAF). It is recognized that some of the geodomains have been updated recently but we have used the terminology herein that reflects the table of relative abundances provided October 2nd, 2015. The samples selected also exhibit a range in ABA parameters, from median to 90th percentile levels for acid potential (AP), neutralization potential (NP), and neutralization potential ratio (NPR). All 36 samples shown in these two tables will undergo the following analyses:

- Aqua regia digestion followed by inductively coupled plasma (ICP) analysis;
- ABA analysis including:
    - Siderite-corrected NP;
    - Total Sulphur by Leco;
    - Sulphate-sulphur by HCl extraction;
    - Total inorganic carbon (TIC); and
    - Paste pH.

The ICP aqua regia analysis will allow us to evaluate the surrogate ABA parameters (e.g. S, Ca, Mg) that NDM (1996) developed to determine acid potential and neutralization potential across the larger ICP database inherited from Cominco. Although such work was done by NDM (1996), the historic data supplied to AEG did not include the ICP data that was paired with the ABA samples, therefore, this needs to be addressed.

The ABA work planned here includes a siderite-corrected NP analysis. Ferrous carbonate mineralogy is noted as an important component in a number of geodomains in the form of ankerite. This does not contribute to NP under the oxidizing conditions present at surface and it is important that any NP analysis does not include it. NDM (1996) used the Coastech method to determine NP in the historic NDM (1996) work, however, it is uncertain if this method excludes the impact of ankeritic carbonate effectively, thus the use of an NP analysis which specifically corrects for ferrous carbonate is employed here as a check.

Approximately half of the historic samples selected here were used in humidity cell testing by NDM (1996). These samples have been identified for additional shake flask extraction (SFE) testing in order to determine the accumulation of weathering products during storage of the historic core at surface. The intent of this is to substantiate the Cominco data for which dissolved metal parameters were missing, as well as "accelerate" the understanding of the temporal weathering profiles since we won't have 40 weeks of data from current planned kinetic testing by the time of environmental assessment (EA) preparation.

Once the samples have been run for static testing, subsamples will be selected for kinetic testing. To avoid spuriously high metal(loid) leaching due to the accumulation of weathering products, the historic samples will be subjected to a dilute HCl rinse to remove these weathering products prior to crushing for humidity cell preparation. As described in the geochemical proposal, the humidity cell will run for a minimum of 40 weeks and the data collected will be used to better calibrate the historic humidity cell work, extend it beyond the 20 week period which is not current industry standard (Price, 2009), expand the suite of elements that were analyzed, and take advantage of the improved detection limits available today which was a notable problem in the NDM (1996) work (e.g. cadmium, zinc). Also, some may be selected for XRD analysis (particularly humidity cell samples) although this will be discussed with BMC to ensure there is no overlap with existing information.

2015 CORE

Table 3 has been developed from the excel file provided by Equity on October 2, 2015, and from the specific drillholes gleaned from the geologic sections provided by Equity and the drill plan from BMC. This table shows the distribution of the 201 samples proposed to be selected from the new core. As noted previously, it would be helpful to understand the depth of any oxidation front, to ensure that it is a representative sample.

The specific analyses for each sample will be defined (as above). Each of these samples will be analyzed for ABA and ICP. In the next week, a subset of these samples will also be selected for SFE, XRD and kinetic laboratory work. At this time, given the compressed time frame for testing to meet EA requirements, we plan to increase the number of shake flask extraction tests from the proposed (approximately double).

This suite of samples spans all geodomains across the pit, broadly in line with the abundance of each geodomain; however, some geodomains are prioritized due to the variability in their ABA parameters down core (PY AK RHY, PY MU MUDS, AK RHYc) as indicated by NDM (1996) or their likely presence in the pit wall/floor (CA CL MAF). In addition, samples of new core have been selected from the 2015 drill holes that should be similar to samples used in the historic kinetic testing i.e. holes that appear to approximately twin those tested in the old core (NDM, 1996). The purpose of this is to support estimates of geochemical evolution over time in this compressed testing program.

We appreciate the expertise available from Equity for sample selection. In the following sections are some recommendations and options for the specific sample selection, for further discussion.

SAMPLING GUIDELINES

For each sample, please collect at least 3kg of material if possible so that there is enough for static and potentially kinetic testing. During static testing, subsamples will be selected for laboratory-based kinetic testing.

If Equity can provide a spreadsheet showing the drillholes, the sample intervals, and any or all of the following information (the geodomains, the visible %S and carbonate, assays) we can select the exact intervals on the spreadsheet. In absence of that, the advice is as follows:

- When collecting multiple samples within a geodomain section on a core, start from close to the transition (e.g. 10cm); and
- then distribute samples at even intervals along the geodomain interval.

As discussed October 14th, 2015, testing the variability within any one geodomain will help with this definition for the new core. We fully support BMC's proposal to subsample 1m intervals over a ~10m length within any one geodomain, and then analysze a composite. It is recommended that the more abundant and more variable geodomains be the focus, e.g. PY AK RHY, AK RHYc, PY MU MDS),

We have identified intervals composites for kinetic testing in this same suite of samples. Some kinetic testing will be started from the old core samples immediately on receipt, in parallel with the static testing. We will also be doing the SFE test work immediately on receipt. The intent of this is to substantiate the Cominco data for which dissolved metal parameters were missing, as well as "accelerate" the understanding of the temporal weathering profiles since we won't have 40 weeks of data (although the validity of this perceived "minimum" amount of data is worth discussing further).

FIELD BARRELS

For field barrels, up to 400kg of material from the new core (not the old) may be required to fill each field barrel. Each barrel should be filled with a samples for a single major geodomain with such samples collected from across multiple cores that span the deposit and from surface to depth where possible:

- PY AK RHYv;
- PY AK RHYc;
- CARB MDS/RHY;
- CA CL MAF;
- AK RHYv; and
- MU PY RHY.

The mass of core added to each field barrel should be recorded. Also, approximately 3kg of the core sample added to each barrel should be retained for static testing:

- ABA included sulphur speciation, TIC, siderite-corrected NP;
- ICP metals from aqua regia digestion;
- Shake flask extraction; and
- XRD mineralogy.

This subsample should be as representative as possible, however, it is acknowledge that this may be challenging.

The operation and sampling of the field barrels should be done in line with the recommendations of AEG (2015).

REFERENCES

Alexco Consulting Group (AEG) (2015) Construction Guidelines for On-site Kinetic Field Test Cells for the Kudz Ze Kayah Project and Sampling Procedures. Memorandum prepared for BMC Minerals (No 1) Ltd., September 3, 2015

Equity Exploration (personal communication) includes various emails and attachments with geologic and drillhole information, September 18, October 2, October 10, October 14, 2015.

Norecol, Dames & Moore (1996) Waste and Wall Rock Geochemical Characterization, Kudz Ze Kayah Project. Report prepared for Cominco, February 21, 1996

Price, W.A. (2009) Prediction Manual or Drainage Chemistry from Sulphidic Geologic materials. MEND Report 1.20.1, December 2009.

TABLE 1

Samples in table below were run in historic humidity cells. Selected here for SFE, ICP metals (aqua regia digest), ABA inc Leco total S, SO4-S (by HCl), TIC, paste pH, siderite-corrected NP

Analysis	Rationale	Dataset	SampleID	HoleID	mFrom	mTo	Interval	FizzTest	Paste_pH	S(T)%	S(SO4)%	AP	NP	RockType_Category	Rock_MajorUnit_DHLog	GeoDomain	ARD_Class	NP/AP	Humidity cell
SFE, ICP metals, ABA	Historic humidity cell sample; high SO4, Ca and As loading, WPAG, no geodomain, so may not be available; chlorite schist (~5% abundance)	KZK_PRE2015	K94-043 30.6 34.9	K94-043	30.6	34.9	4.3		9.1	1.12	0.06	35	18	HW-2	FZ		WPAG	0.51	I-02
SFE, ICP metals, ABA	Historic humidity cell sample; high SO4, Ca and As loading, PAC, no geodomain, so may not be available; felsic tuff (~70% abundance)	KZK_PRE2015	K94-009 41.1 53.1	K94-009	41.1	53.1			8.5	1.35	0.03	42	88	HW-3m	FXXF		PAC	2.10	I-03
SFE, ICP metals, ABA	Historic humidity cell sample; high As loading but low SO4, WPAG, no geodomain, so may not be available; carbonate schist (~15% abundance)	KZK_PRE2015	K94-009 69 87	K94-009	69	87			9.2	0.45	0.01	14	23	HW-1	FZXF		WPAG	1.64	I-04
SFE, ICP metals, ABA	Historic humidity cell sample; high Cu loading, PAC, PY MU RHYc 15% abundance	KZK_PRE2015	94-34 157.3 160.3	K94-034	157.3	160.3	3	4	9.36	0.9	0	28.1	86.1		FTC	PY MU RHYc	PAC	3.06	II-06
SFE, ICP metals, ABA	Historic humidity cell sample; high Cu, Fe loading, PAC, AK RHYv 10% abundance	KZK_PRE2015	94-40 34.6 37	K94-040	34.6	37	2.4	5	9.5	0.96	0	30	64.4		FTCE	AK RHYv	PAC	2.15	II-07
SFE, ICP metals, ABA	Historic humidity cell sample; elevated Cu loading, PAC, PY AK RHYv 20% abundance	KZK_PRE2015	94-40 87.5 89.9	K94-040	87.5	89.9	2.4	4	9.31	1.77	0	55.3	48.3		FTAG	PY AK RHYv	WPAG	0.87	II-09
SFE, ICP metals, ABA	Historic humidity cell sample; high Cu loading but low SO4, WPAG, no geodomain, so may not be available (sericity alteration)	KZK_PRE2015	94-40 149.4 152.1	K94-040	149.4	152.1	2.7	5	9.43	0.95	0	29.7	40.6		QZVN		WPAG	1.37	II-10
SFE, ICP metals, ABA	Historic humidity cell sample; intermediate metal loadings, PAC, PY AK RHYv 20% abundance	KZK_PRE2015	94-46 23.4 26.4	K94-046	23.4	26.4	3	4	9.32	0.76	0	23.8	42.5		FZXR	PY AK RHYv	PAC	1.79	II-11
SFE, ICP metals, ABA	Historic humidity cell sample; intermediate metal loadings, WPAG, AK RHYc 5% abundance	KZK_PRE2015	94-50 14.4 17.4	K94-050	14.4	17.4	3	5	9.61	0.76	0	23.8	48.9		FTL	AK RHYc	PAC	2.05	II-13
SFE, ICP metals, ABA	Historic humidity cell sample; intermediate metal loadings, WPAG, PY AK RHYv 20% abundance	KZK_PRE2015	94-50 101.6 103.7	K94-050	101.6	103.7	2.1	3	8.88	1.67	0	62.2	43.9		FTA	PY AK RHYv	WPAG	0.71	II-14
SFE, ICP metals, ABA	Historic humidity cell sample; high Zn loading, WPAG, PY MU MDS 13% abundance; also had trickle and delayed leach work done	KZK_PRE2015	94-50 125.9 131.6	K94-050	125.9	131.6	5.7	1	9.22	1.06	0	33.1	39.5		FZ	PY MU MDS	WPAG	1.19	II-15
SFE, ICP metals, ABA	Historic humidity cell sample; elevated As loading; PAC, CA CL MAFi 19% abundance, footwall; also had delayed leach done	KZK_PRE2015	94-34 189 189.7	K94-034	189	189.7	0.7	5	9.6	0.52	0	16.3	128.6		FF	CA CL MAFi	PAC	7.89	II-17
SFE, ICP metals, ABA	Historic humidity cell sample; high Zn loading but low SO4; SPAG, PY CL RHY 5% abundance; also had delayed leach done	KZK_PRE2015	94-34 167.5 169.7	K94-034	167.5	169.7	2.2	0	9.06	1.44	0	45	4.4		ATXB	PY CL RHY	SPAG	0.10	II-18
SFE, ICP metals, ABA	Historic humidity cell sample; highest Zn loading but low SO4; SPAG, sulphide	KZK_PRE2015	94-34 178.8 181.1	K94-034	178.8	181.1	2.3	3	6.63	19.71	0	615.9	10.5		OC	sulfide	SPAG	0.02	II-19
SFE, ICP metals, ABA	Historic humidity cell sample; highest SO4 loading; SPAG, sulphide, also had delayed leach done	KZK_PRE2015	94-40 153.2 156.2	K94-040	153.2	156.2	3	4	4.83	45.05	0	1407.8	13.4		OAO	sulfide	SPAG	0.01	II-20
SFE, ICP metals, ABA	No HC data for this geodomain; high S, but median NPR	KZK_PRE2015	94-50 54.2 57.2	K94-050	54.2	57.2	3	5	9.55	1.34	-0.02	41.9	70.5		FTL	PY AK RHYc		1.68	

TABLE 2

Siderite-corrected NP, plus total S, SO4-S, TIC and paste pH:

Check on validity of NP method (was Coastech modified NP), historic data quality and QC of old data

Focused on major lithologies, esp ankeritic geodomains, with P90 & P50 NP, with NPR between 1 and 10 (majority between 2 and 3)

Analysis	Rationale	Dataset	SampleID	HoleID	mFrom	mTo	Interval	FizzTest	Paste_pH	S(T)%	S(SO4)%	AP	NP	RockType_Category	Rock_MajorUnit_DHLog	GeoDomain	ARD_Class	NP/AP	NNP
	High NP, NPR	KZK_PRE2015	94-34 42.8 44.7	K94-034	42.8	44.7	1.9	5	9.08	1.05	0	32.8	124.6		SX	AK RHYc		3.80	91.8
	High NP, NPR	KZK_PRE2015	94-40 18.1 20.1	K94-040	18.1	20.1	2	5	9.46	1.32	0	41.3	95.5		FTC	AK RHYv		2.31	54.2
	High NPR, NP	KZK_PRE2015	94-34 188.1 189	K94-034	188.1	189	0.9	5	9.72	0.5	0	15.6	161.8		MNX2	CA CL MAFi		10.37	146.2
	Higher AP, NPR closer to 2	KZK_PRE2015	94-46 110 113	K94-046	110	113	3	5	9.12	0.84	0	26.3	77.5		FTC	CA CL MAFi		2.95	51.2
	NPR closer to 2	KZK_PRE2015	94-50 174.7 176.7	K94-050	174.7	176.7	2	3	9.26	0.61	0	19.1	49.5		FT	CA CL MAFi		2.59	30.4
		KZK_PRE2015	94-50 45.2 48.2	K94-050	45.2	48.2	3	5	9.43	0.98	0	30.6	71.1		FTL	PY AK RHYc		2.32	40.5
		KZK_PRE2015	94-34 94 97	K94-034	94	97	3	5	9.11	1.63	0	50.9	98		FXXG	PY AK RHYv		1.93	47.1
		KZK_PRE2015	94-40 78 80.4	K94-040	78	80.4	2.4	3	8.7	0.84	0	26.3	74.6		FTXF	PY AK RHYv		2.84	48.3
		KZK_PRE2015	94-34 124.5 127.2	K94-034	124.5	127.2	2.7	5	8.84	0.9	0	28.1	57		FXXG	PY AK RHYv		2.03	28.9
	Median AP, high NP, NPR	KZK_PRE2015	94-40 95.3 98.3	K94-040	95.3	98.3	3	3	9.43	0.97	0	30.3	86		FYXB	PY MU MDS		2.84	55.7
	High NP	KZK_PRE2015	94-46 56.1 58.5	K94-046	56.1	58.5	2.4	3	8.99	0.63	0	19.7	93.9		AY	PY MU MDS		4.77	74.2
	Low NPR, high AP	KZK_PRE2015	K94-009 90 99	K94-009	90	99	9		9	2.29	0.07	72	43	HW-2	FYXB	PY MU MDS	PAG?	0.60	-29
	Median NPR, Q3 AP, NP	KZK_PRE2015	94-40 89.9 92.3	K94-040	89.9	92.3	2.4	3	9.14	1.64	0	51.3	82.1		FTAG	PY MU RHYc		1.60	30.8
	High AP	KZK_PRE2015	94-40 29.1 32.1	K94-040	29.1	32.1	3	5	9.3	1.54	0	48.1	72.5		FTCE	AK RHYv		1.51	24.4
	High AP, low NPR	KZK_PRE2015	94-50 51.2 54.2	K94-050	51.2	54.2	3	5	9.58	1.49	0	46.6	58		FTL	PY AK RHYc		1.24	11.4
	Variability in adjacent sections of core	KZK_PRE2015	94-40 139.8 142	K94-040	139.8	142	2.2	4	9.18	2.1	0	65.6	103.8		FZXB	PY CL RHY		1.58	38.2
		KZK_PRE2015	94-40 144.2 146.4	K94-040	144.2	146.4	2.2	3	9.46	1.14	0	35.6	15.4		FZXB	PY CL RHY		0.43	-20.2

Table 3

Samples for static testing from new core collected in 2015; kinetic testing and SFE samples will be selected from this pool
percent area of interpreted area within Cominco Pit (visual estimate)
Where multiple samples are collected from a core geodomain, start sampling ~10 cm from transition and sample at even intervals over geodomain

		414550	414600	# samples for ABA/ICP from composite of 414550 & 414600 cross section	414650	# samples from 414650 cross section	414700	# samples from 414700 cross section	414750	# samples from 414750 cross section
Hole ID: depth		K94-018: 309.1m	K94-043: 85m		K94-046: 121.3m		K94-034: 195.4m K94-036: 111.6m		K94-040: 172.5m	
SECTION (mE)	avg									
RHY	2%	0	0		10	1	10		0	
AK RHYc	4%	0	0		0		10	2	10	1
AK RHYv	15%	0	0		15	1	10	1	15	1
CA CL MAFi	3%	0	0		2.5	2	5	2	2	2
PY AK RHYc	13%	35	0	2	0		10		10	1
PY AK RHYv	27%	45	65	12	25	2	30	3	15	3
PY MU MDS	15%	20	20	5	30	3	10	2	15	3
PY MU RHYv	5%	0	5		0		0	0	10	
PY MU RHYc	9%	0	0		15	2	10		15	2
PY CL RHY	5%	0	10	1	2.5		5		8	
MDS	3%	0	0		0	0	0		0	
		100	100		100		100		100	
Sample subtotal				**20**		**11**		**10**		**13**
				20		10		10		10
Total # samples	201									

Cominco historic core location (try to twin these samples from new core drilled close to old ABA core (K94-034, 40, 46, 50)

	414800	# samples from 414800 cross section	414850	# samples from 414850 cross section	414900	# samples from 414900 cross section	414950	# samples from 414950 cross section	415000	# samples from 415000 cross section
Hole ID: depth	K94-050: 179.8m		K94-009: 200m K94-010: 179m K94-022: 239.6m							
SECTION (mE)										
RHY	0		0		0		0		0	
AK RHYc	15	4	5	1	10	2	0		0	
AK RHYv	10	1	15	1	10	2	0		5	1
CA CL MAFi	10	3	2	2	2	1	5	2	0	
PY AK RHYc	10	1	13	1	15	2	40	8	20	2
PY AK RHYv	20	3	25	3	25	4	10	2	25	6
PY MU MDS	18	3	20	4	10	3	20	4	25	6
PY MU RHYv	10	1	7	1	8		0	0	18	2
PY MU RHYc	7		5		10	1	20	4	5	1
PY CL RHY	0		8		10		5	1	2	
MDS	0		0		0		0		0	
	100		100		100		100		100	
Sample subtotal		**16**		**13**		**15**		**21**		**18**
		15		15		15		20		20

	415050	# samples from 415050 cross section	415100	# samples from 415100 cross section	415150	415200	# samples for ABA/ICP from composite of 415150 & 415200 cross section	Total # samples	% dist
Hole ID: depth					K94-019:306.7m				
SECTION (mE)									
RHY	15	2	0		0	0		3	1%
AK RHYc	4	2	0		10	0	2	14	7%
AK RHYv	10	2	25	5	34	30	6	21	10%
CA CL MAFi	1	1	2	1	1	5	2	18	9%
PY AK RHYc	5	1	20	4	15	0	1	23	11%
PY AK RHYv	20	5	15	3	20	40	4	50	25%
PY MU MDS	18	4	10	2	5	3	1	40	20%
PY MU RHYv	10	2	0		0	10	1	7	3%
PY MU RHYc	7	1	20	4	15	0	2	17	8%
PY CL RHY	10	2	8	1	0	0		5	2%
MDS	0		0		0	12	3	3	1%
	100		100		100	100		**201**	
Sample subtotal		**22**		**20**			**22**		
		20		20			20		

APPENDIX C
2015/16 Static Data for Waste Rock Drill Core Samples from ABM Open Pit Area

BMC Sample ID	ABM Pit Zone	Geodomain interval	From	To	Hole ID and Interval	Correct Geodomain	Comments	Paste pH	Fizz Rating	Total Inorganic C	Carbonate-NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	Siderite Corrected NP	Modified Sobek NP	NP/AP
		m	m	m				pH Units		wt %	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	kg $CaCO_3$/t	
							Detection Limit:			0.02	1.7	0.01	0.01	0.01	1.3	0.5	0.5	
B00264201	ABM Zone				94-46 23.4 26.4	PY AK RHYv		9.5	Slight	0.24	20.0	0.81	<0.01	0.81	25.3	27.3	27.0	1.1
B00264202	ABM Zone				94-50 174.7 176.7	CA CL MAF		9.6	Slight	0.06	5.0	0.58	<0.01	0.58	18.1	10.2	9.9	0.5
B00264203	ABM Zone				94-46 110 113	CA CL MAF		9.4	Strong	0.94	78.3	0.05	<0.01	0.05	1.6	111.2	83.4	53.4
B00264204	ABM Zone				94-46 56.1 58.5	CARB MDS/RHY		8.5	Slight	0.18	15.0	0.39	<0.01	0.39	12.2	49.7	46.5	3.8
B00264205	ABM Zone				94-50 14.4 17.4	AK RHYc		9.2	Moderate	0.90	75.0	0.24	<0.01	0.24	7.5	74.9	74.3	9.9
B00264206	ABM Zone				94-50 101.6 103.7	PY AK RHYv		9.1	Moderate	0.51	42.5	1.74	<0.01	1.74	54.4	54.1	53.8	1.0
B00264207	ABM Zone				94-50 125.9 131.6	CARB MDS/RHY		9.1	Slight	0.43	35.8	1.18	<0.01	1.18	36.9	49.2	47.0	1.3
B00264209	ABM Zone				94-50 54.2 57.2	PY AK RHYc		9.3	Moderate	0.51	42.5	0.97	<0.01	0.97	30.3	47.9	49.6	1.6
B00264211	ABM Zone				94-50 45.2 48.2	PY AK RHYc		9.5	Moderate	0.70	58.3	0.28	<0.01	0.28	8.8	75.2	58.7	6.7
B00264212	ABM Zone				94-50 51.2 54.2	PY AK RHYc		9.2	Moderate	0.70	58.3	0.53	<0.01	0.53	16.6	57.7	58.5	3.5
B00264213	ABM Zone	8.0-30.0	29.4	30.1	K15-207	PY AK RHYc		8.9	Strong	1.61	134.2	0.66	<0.01	0.66	20.6	170.8	144.3	7.0
B00264214	ABM Zone	8.0-30.0	8.2	8.6	K15-207	PY AK RHYc	OXIDIZED	9.1	Slight	<0.02	<1.7	1.02	<0.01	1.02	31.9	0.5	2.1	0.1
B00264215	ABM Zone	8.0-30.0	9	25	K15-207	PY AK RHYc	OXIDIZED, composite of whole interval	9.1	Strong	0.59	49.2	0.74	<0.01	0.74	23.1	79.9	62.4	2.7
B00264216	ABM Zone	45.5-63.2	48	48.4	K15-200	PY AK RHYv		9.0	Strong	0.83	69.2	0.55	<0.01	0.55	17.2	90.9	71.9	4.2
B00264217	ABM Zone	63.3-75.1	64.5	64.9	K15-200	PY AK RHYv		9.1	Strong	0.61	50.8	0.09	<0.01	0.09	2.8	50.4	52.9	18.8
B00264218	ABM Zone	78.8-86.2	79.5	79.9	K15-200	PY AK RHYc		8.7	Moderate	0.28	23.3	2.23	<0.01	2.23	69.7	34.4	32.6	0.5
B00264219	ABM Zone	104.5-108.9	103.9	104.3	K15-200	CARB MDS/RHY		9.1	Moderate	1.20	100.0	4.41	0.02	4.39	137.2	121.6	122.8	0.9
B00264220	ABM Zone	170-187.6	172.1	172.5	K15-200	CA CL MAF		9.2	Strong	1.55	129.2	0.02	0.02	0.00	0.6	240.8	142.2	227.5
B00264221	ABM Zone	109.8-130	129	129.3	K15-200	MU PY RHY		9.3	None	0.05	4.2	0.86	<0.01	0.86	26.9	6.7	5.7	0.2
B00264222	ABM Zone				94-34 157.3 160.3	MU PY RHY		9.0	Moderate	0.50	41.7	1.30	<0.01	1.30	40.6	49.1	50.0	1.2
B00264223	ABM Zone				94-34 167.5 169.7	PY CL RHY		9.3	None	<0.02	<1.7	0.84	<0.01	0.84	26.3	3.6	2.3	0.1
B00264224	ABM Zone				94-34 189 189.7	CA CL MAF		9.1	Strong	1.87	155.8	0.45	<0.01	0.45	14.1	130.5	166.8	11.9
B00264225	ABM Zone				K94-009 41.1 53.1			8.9	Moderate	0.84	70.0	0.89	<0.01	0.89	27.8	73.1	75.0	2.7
B00264226	ABM Zone				K94-009 69 87			9.1	Slight	0.27	22.5	0.44	<0.01	0.44	13.8	26.8	25.8	1.9
B00264227	ABM Zone				K94-043 30.6 34.9			8.6	None	0.02	1.7	1.41	<0.01	1.41	44.1	1.9	1.4	0.03
B00264228	ABM Zone				94-40 34.6 37	AK RHYv		9.3	Moderate	0.31	25.8	0.91	<0.01	0.91	28.4	51.0	46.3	1.6
B00264229	ABM Zone				94-40 87.5 89.9	PY AK RHYv		9.6	Slight	0.35	29.2	0.29	<0.01	0.29	9.1	35.6	31.1	3.4
B00264230	ABM Zone				94-40 18.1 20.1	AK RHYv		9.1	Moderate	1.28	106.7	0.79	<0.01	0.79	24.7	115.5	102.9	4.2
B00264231	ABM Zone				94-40 29.1 32.1	AK RHYv		9.0	Moderate	0.56	46.7	1.76	<0.01	1.76	55.0	63.3	65.0	1.2
B00264232	ABM Zone				94-40 78 80.4	PY AK RHYv		8.9	Moderate	0.87	72.5	1.33	<0.01	1.33	41.6	74.9	76.9	1.9
B0264233	ABM Zone				94-40 89.9 92.3	MU PY RHY		9.0	Moderate	0.73	60.8	1.06	<0.01	1.06	33.1	71.9	70.4	2.1
B00264234	ABM Zone				94-40 95.3 98.3	CARB MDS/RHY		8.7	Strong	0.63	52.5	1.82	<0.01	1.82	56.9	113.0	80.9	1.4
B00264235	ABM Zone				94-40 139.8 142	PY CL RHY		8.8	Slight	0.09	7.5	1.62	<0.01	1.62	50.6	16.1	13.1	0.3
B00264236	ABM Zone				94-40 144.2 146.4	PY CL RHY		8.6	None	<0.02	<1.7	1.71	<0.01	1.71	53.4	1.8	1.7	0.03
B00264237	ABM Zone				94-34 42.8 44.7	AK RHYc		9.3	Strong	1.06	88.3	0.45	<0.01	0.45	14.1	191.0	107.1	7.6
B00264238	ABM Zone				94-34 94 97	PY AK RHYv		8.9	Moderate	0.71	59.2	0.55	<0.01	0.55	17.2	63.9	62.0	3.6
B00264239	ABM Zone				94-34 124.5 127.2	PY AK RHYv		8.5	Strong	0.30	25.0	1.22	<0.01	1.22	38.1	89.4	45.6	1.2
B00264240	ABM Zone				94-34 188.1 189	CA CL MAF		9.4	Strong	2.38	198.3	<0.01	<0.01	<0.01	<0.3	259.8	203.9	>679
B00264241	ABM Zone				K94-009 90 99	CARB MDS/RHY		8.4	Slight	0.64	53.3	1.80	0.03	1.77	55.3	55.1	54.0	1.0
B00264242	ABM Zone	58-65.9	58.05	58.74	k15-204	CARB MDS/RHY		9.1	None	0.08	6.7	1.16	<0.01	1.16	36.3	6.0	4.7	0.1
B00264243	ABM Zone	95.6-101.1	99.27	100.2	k15-204	MU PY RHY		9.3	Moderate	1.13	94.2	0.25	<0.01	0.25	7.8	88.5	89.2	11.4
B00264244	ABM Zone	138.2-165.2	164.23	165	K15-206	PY AK RHYc		9.2	None	0.06	5.0	0.80	<0.01	0.80	25.0	9.8	8.8	0.4
B00264245	ABM Zone	182.9-188.9	182.9	183.66	K15-206	PY CL RHY		8.9	Moderate	1.40	116.7	2.81	0.02	2.79	87.2	192.9	140.5	1.6
B00264246	ABM Zone	32.6-38.9	32.6	33	K15-216	PY AK RHYc		9.1	Moderate	0.74	61.7	0.60	0.02	0.58	18.1	92.1	68.0	3.8
B00264247	ABM Zone	67-99	67	67.5	K15-216	PY AK RHYv		9.2	Moderate	0.63	52.5	0.18	0.02	0.16	5.0	72.5	52.5	10.5
B00264248	ABM Zone	143.6-146	143.6	144.45	K15-216	CARB MDS/RHY		7.8	None	<0.02	<1.7	4.72	0.02	4.70	146.9	1.3	0.2	0.001
B00264249	ABM Zone	157.9-163.9	157.9	158.5	K15-216	MU PY RHY		7.9	Slight	0.20	16.7	3.44	0.03	3.41	106.6	30.3	28.2	0.3
B00264250	ABM Zone	185.4-203.8	185.4	185.9	K15-216	CA CL MAF		9.3	Strong	3.26	271.7	0.05	<0.01	0.05	1.6	303.4	272.8	174.6
B00264251	ABM Zone	6-11.5	10.64	11	K15-226	AK RHYv		9.1	Slight	0.21	17.5	0.93	<0.01	0.93	29.1	27.7	22.6	0.8
B00264252	ABM Zone	19.5-22.5	19.5	20	K15-226	AK RHYc		9.1	Moderate	0.61	50.8	1.01	0.02	0.99	30.9	87.2	68.1	2.2
B00264253	ABM Zone	36-80	47.13	47.49	K15-226	AK RHYc		8.8	Moderate	0.69	57.5	0.46	0.02	0.44	13.8	76.2	58.5	4.3
B00264254	ABM Zone	86.5-107.3	86.8	87.2	K15-226	PY AK RHYc		9.3	Moderate	0.52	43.3	0.51	0.02	0.49	15.3	65.7	52.1	3.4
B00264255	ABM Zone	124.6-129.3	124.6	125.02	K15-226	CARB MDS/RHY		9.1	Moderate	0.44	36.7	0.13	<0.01	0.13	4.1	59.0	39.5	9.7

Blank cells indicate parameter was not analyzed.

BMC Sample ID	ABM Pit Zone	Geodomain interval	From	To	Hole ID and Interval	Correct Geodomain	Comments	Paste pH	Fizz Rating	Total Inorganic C	Carbonate-NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	Siderite Corrected NP	Modified Sobek NP	NP/AP
		m	m	m				pH Units		wt %	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	kg $CaCO_3$/t	
							Detection Limit:			0.02	1.7	0.01	0.01	0.01	1.3	0.5	0.5	
B00264256	ABM Zone	175.7-185.3	177.2	178.19	K15-226	CA CL MAF		9.0	Strong	2.10	175.0	0.02	<0.01	0.02	0.6	276.4	181.0	289.6
B00264257	ABM Zone	23.35-28.7	23	23.77	K15-227	MU PY RHY		9.3	Strong	1.23	102.5	1.55	<0.01	1.55	48.4	137.6	113.7	2.3
B00264258	ABM Zone	29.5-33.6	29.5	31.32	K15-227	MU PY RHY		9.2	Strong	0.70	58.3	0.32	<0.01	0.32	10.0	84.8	64.1	6.4
B00264259	ABM Zone	50.8-86	50.8	52.29	K15-227	CA CL MAF		9.1	Strong	2.30	191.7	<0.01	<0.01	<0.01	<0.3	296.1	195.9	>653
B00264260	ABM Zone	66.44-73.88	66.44	67.08	K15-232	PY AK RHYv		9.2	Strong	0.93	77.5	0.43	0.02	0.41	12.8	106.9	77.2	6.0
B00264261	ABM Zone	113-117.1	113	113.7	K15-232	CARB MDS/RHY		9.1	Moderate	0.21	17.5	3.58	0.02	3.56	111.3	50.4	33.5	0.3
B00264262	ABM Zone	140.35-145.2	141.84	142.56	K15-235R	CA CL MAF		9.5	Strong	1.25	104.2	0.04	0.02	0.02	0.6	285.0	121.0	193.6
B00264263	ABM Zone	36.77-39	36.77	37.46	K15-233	AK RHYv		9.1	Moderate	0.39	32.5	0.54	0.02	0.52	16.3	54.4	37.7	2.3
B00264264	ABM Zone	40.81-49.3	40.85	41.62	K15-233	AK RHYc		8.6	Strong	0.84	70.0	1.11	0.03	1.08	33.8	145.9	83.7	2.5
B00264265	ABM Zone	61.9-67.5	61.9	62.55	K15-233	PY AK RHYv		9.1	Moderate	1.01	84.2	0.60	0.02	0.58	18.1	90.3	76.1	4.2
B00264266	ABM Zone	110.7-127.08	126.4	127.08	K15-233	PY AK RHYv		9.0	Moderate	0.40	33.3	3.97	<0.01	3.97	124.1	51.9	44.2	0.4
B00264267	ABM Zone	127.08-139.18	127.06	127.71	K15-233	PY AK RHYc		9.1	Moderate	0.81	67.5	1.34	0.02	1.32	41.3	75.6	67.2	1.6
B00264268	ABM Zone	160.4-165	160.04	161	K15-233	CARB MDS/RHY		9.0	None	<0.02	<1.7	1.35	<0.01	1.35	42.2	4.3	4.5	0.1
B00264269	ABM Zone	165-175.2	165	166.05	K15-233	CARB MDS/RHY		9.4	Strong	1.42	118.3	0.05	<0.01	0.05	1.6	164.6	108.1	69.2
B00264270	ABM Zone	21.73-23.84	22.7	23.4	K15-235R	PY AK RHYv		9.3	Strong	0.71	59.2	0.38	0.02	0.36	11.3	119.2	61.9	5.5
B00264271	ABM Zone	55.75-64.16	55.75	56.57	K15-235R	PY AK RHYv		9.3	Moderate	1.00	83.3	1.02	0.02	1.00	31.3	97.7	85.6	2.7
B00264272	ABM Zone	64.16-70	64.16	64.91	K15-235R	PY AK RHYv		9.7	Moderate	0.71	59.2	0.25	<0.01	0.25	7.8	75.6	62.3	8.0
B00264273	ABM Zone	70-76.35	70	70.8	K15-235R	PY AK RHYv		9.8	Moderate	0.55	45.8	0.28	<0.01	0.28	8.8	74.3	53.7	6.1
B00264274	ABM Zone	76.79-82.9	76.79	77.63	K15-235R	MU PY RHY		9.5	None	<0.02	<1.7	0.62	0.02	0.60	18.8	4.5	3.8	0.2
B00264275	ABM Zone	90.64-103.46	90.64	91.62	K15-235R	CARB MDS/RHY		9.4	Slight	0.02	1.7	0.34	0.02	0.32	10.0	23.8	10.0	1.0
B00264276	ABM Zone	103.46-113.05	103.46	104.2	K15-235R	CARB MDS/RHY		9.4	Slight	0.04	3.3	1.24	0.02	1.22	38.1	27.5	12.7	0.3
B00264277	ABM Zone	117.76-130.35	117.7	118.55	K15-235R	PY CL RHY		9.4	Strong	0.98	81.7	0.15	<0.01	0.15	4.7	204.9	91.9	19.6
B00264278	ABM Zone	122.56-128	122.56	123.33	K15-236	CA CL MAF		9.2	Strong	3.54	295.0	0.30	<0.01	0.30	9.4	360.0	294.8	31.4
B00264279	ABM Zone	11.77-18.45	11.77	12.14	K15-238	AK RHYv		9.4	Strong	0.64	53.3	0.49	0.02	0.47	14.7	93.4	75.0	5.1
B00264280	ABM Zone	36.43-41.63	36.43	36.85	K15-238	PY AK RHYc		9.5	Moderate	0.38	31.7	0.04	<0.01	0.04	1.3	46.7	36.8	29.4
B00264281	ABM Zone	56.55-77.47	70.62	71	K15-238	PY AK RHYv		9.3	Strong	0.99	82.5	0.22	0.02	0.20	6.3	127.8	80.3	12.8
B00264282	ABM Zone	77.47-98.08	77.09	77.5	K15-238	PY AK RHYc		9.4	Strong	1.16	96.7	0.09	<0.01	0.09	2.8	127.8	83.3	29.6
B00264283	ABM Zone	117.44-127.38	117.44	117.52	K15-238	PY AK RHYc		9.1	Moderate	0.20	16.7	0.85	<0.01	0.85	26.6	42.4	29.6	1.1
B00264284	ABM Zone	153.52-155.32	153.52	153.78	K15-238	CARB MDS/RHY		8.8	Moderate	0.68	56.7	0.72	<0.01	0.72	22.5	77.4	66.3	2.9
B00264285	ABM Zone	66-90.58	68.91	70	K15-239	CARB MDS/RHY		9.4	Slight	0.16	13.3	1.05	<0.01	1.05	32.8	24.6	21.6	0.7
B00264286	ABM Zone	80-90.58	89.9	90.58	K15-239	CARB MDS/RHY		9.6	Slight	0.19	15.8	1.48	<0.01	1.48	46.3	25.6	24.6	0.5
B00264287	ABM Zone	9-37.36	9.74	10.3	K15-240	MU PY RHY		9.4	None	<0.02	<1.7	0.27	<0.01	0.27	8.4	0.8	1.7	0.2
B00264288	ABM Zone	11-13.5	10.3	11	K15-240	MU PY RHY		8.6	None	<0.02	<1.7	1.87	<0.01	1.87	58.4	1.8	1.5	0.03
B00264289	ABM Zone	13.5-16	17.63	18.36	K15-240	MU PY RHY		9.1	Moderate	0.27	22.5	3.56	<0.01	3.56	111.3	57.4	38.6	0.3
B00264290	ABM Zone	16-19.5	18.36	19	K15-240	MU PY RHY		9.3	Moderate	0.44	36.7	0.79	<0.01	0.79	24.7	55.6	43.9	1.8
B00264291	ABM Zone	19.5-23	19	19.7	K15-240	MU PY RHY		9.0	Moderate	0.41	34.2	2.09	<0.01	2.09	65.3	56.5	49.1	0.8
B00264292	ABM Zone	23-26.5	26.25	27	K15-240	MU PY RHY		9.5	Slight	0.12	10.0	0.71	<0.01	0.71	22.2	22.5	18.1	0.8
B00264293	ABM Zone	26.5-37.36	27	27.75	K15-240	MU PY RHY		9.4	Slight	0.24	20.0	0.72	<0.01	0.72	22.5	32.7	28.1	1.2
B00264294	ABM Zone	37.36-39.65	37.36	38.09	K15-240	MU PY RHY		9.6	Slight	0.10	8.3	1.00	<0.01	1.00	31.3	16.6	10.4	0.3
B00264295	ABM Zone	39.65-45.3	39.65	40.35	K15-240	MU PY RHY		9.7	Moderate	0.33	27.5	1.33	<0.01	1.33	41.6	47.9	37.4	0.9
B00264296	ABM Zone	23.6-27	23.6	24.3	K15-242	AK RHYv		9.7	Moderate	0.44	36.7	<0.01	<0.01	<0.01	<0.3	42.3	35.9	>119
B00264297	ABM Zone	27-33.8	31	32	K15-242	AK RHYv		9.5	Strong	0.29	24.2	0.51	<0.01	0.51	15.9	70.9	39.0	2.4
B00264298	ABM Zone	78.69-86.73	78.69	79.49	K15-242	CARB MDS/RHY		8.5	Moderate	0.15	12.5	1.61	0.03	1.58	49.4	28.6	16.9	0.3
B00264299	ABM Zone	86.73-90	86.73	87.69	K15-242	PY CL RHY		9.2	None	<0.02	<1.7	0.90	<0.01	0.90	28.1	6.1	4.0	0.1
B00264300	ABM Zone	90-92.09	90	91.78	K15-242	PY CL RHY		9.3	Strong	0.91	75.8	0.16	0.02	0.14	4.4	100.7	75.7	17.3
B00264301	ABM Zone	117.25-120	117.25	119.9	K15-242	MU PY RHY		9.5	Slight	0.11	9.2	0.95	<0.01	0.95	29.7	18.5	14.4	0.5
B00264302	ABM Zone	120-123.1	120.25	122	K15-242	CA CL MAF		9.5	Strong	0.20	16.7	0.58	<0.01	0.58	18.1	39.2	26.9	1.5
B00264303	ABM Zone	40.21-50	40.21	40.53	K15-243	AK RHYv		9.5	Strong	0.73	60.8	0.07	0.02	0.05	1.6	118.2	63.4	40.6
B00264304	ABM Zone	77.7-83	77.7	78.12	K15-243	AK RHYv		9.5	Strong	0.58	48.3	0.02	<0.01	0.02	0.6	45.4	44.7	71.5
B00264305	ABM Zone	83-86	83	83.42	K15-243	PY AK RHYc		9.6	Moderate	0.19	15.8	0.07	<0.01	0.07	2.2	40.4	21.2	9.7
B00264306	ABM Zone	86-89.32	86	86.37	K15-243	PY AK RHYc		9.4	Strong	0.99	82.5	0.12	0.02	0.10	3.1	103.2	74.3	23.8
B00264307	ABM Zone	111.97-120.87	111.89	112.29	K15-243	PY AK RHYv		9.6	Strong	0.45	37.5	0.37	<0.01	0.37	11.6	76.5	42.3	3.7
B00264308	ABM Zone	139.73-144.1	139.73	140.13	K15-243	PY AK RHYc		9.5	Strong	2.12	176.7	0.34	<0.01	0.34	10.6	67.8	154.5	14.5

Blank cells indicate parameter was not analyzed.

BMC Sample ID	ABM Pit Zone	Geodomain interval	From	To	Hole ID and Interval	Correct Geodomain	Comments	Paste pH	Fizz Rating	Total Inorganic C	Carbonate-NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	Siderite Corrected NP	Modified Sobek NP	NP/AP
		m	m	m				pH Units		wt %	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	kg $CaCO_3$/t	
							Detection Limit:			0.02	1.7	0.01	0.01	0.01	1.3	0.5	0.5	
B00264309	ABM Zone	189.63-198	192	192.4	K15-243	MU PY RHY		8.8	Strong	1.91	159.2	<0.01	0.01	<0.01	<0.3	247.5	164.6	>548
B00264310	ABM Zone	198-215.15	198	198.39	K15-243	CA CL MAF		9.9	Strong	3.12	260.0	0.01	0.01	0.00	0.0	342.0	262.6	>875
B00264311	ABM Zone	21-36	21	21.75	K15-244	AK RHYv		9.6	Strong	0.62	51.7	0.88	<0.01	0.88	27.5	84.9	59.8	2.2
B00264312	ABM Zone	38-45.5	38	38.77	K15-244	PY AK RHYv		9.6	Moderate	0.99	82.5	1.01	<0.01	1.01	31.6	91.4	82.0	2.6
B00264313	ABM Zone	52.64-60.39	52.66	53.6	K15-244	CARB MDS/RHY		9.6	None	0.02	1.7	0.53	<0.01	0.53	16.6	4.5	7.4	0.4
B00264314	ABM Zone	69.1-74	69.1	71.35	K15-244	PY CL RHY		9.7	Strong	0.75	62.5	0.27	<0.01	0.27	8.4	98.6	73.8	8.7
B00264315	ABM Zone	86-98.4	87	87.73	K15-244	CA CL MAF		9.3	Strong	2.84	236.7	0.05	0.02	0.03	0.9	325.9	235.9	251.6
B00264316	ABM Zone	6.7-11	6.72	7.12	K15-246	AK RHYv		9.4	Moderate	0.49	40.8	0.01	<0.01	0.01	0.3	173.5	42.6	136.3
B00264317	ABM Zone	12.6-19	12.6	12.95	K15-246	AK RHYv		9.2	Strong	2.21	184.2	0.21	0.03	0.18	5.6	194.0	159.0	28.3
B00264318	ABM Zone	24.6-36	24.6	24.95	K15-246	AK RHYv		9.4	Strong	1.14	95.0	0.26	0.02	0.24	7.5	126.9	94.7	12.6
B00264319	ABM Zone	62.5-66	62.5	63.05	K15-246	PY AK RHYc		9.2	Strong	0.94	78.3	2.43	0.02	2.41	75.3	128.7	100.5	1.3
B00264320	ABM Zone	66-71	66	66.35	K15-246	PY AK RHYc		8.8	Strong	1.34	111.7	1.75	0.02	1.73	54.1	156.7	116.6	2.2
B00264321	ABM Zone	48.94-67.51	48.94	49.7	K15-250	AK RHYv		9.7	Moderate	0.20	16.7	<0.01	<0.01	<0.01	<0.3	36.1	20.1	>67
B00264322	ABM Zone	101-107.04	101	101.75	K15-250	AK RHYc		9.3	Moderate	0.64	53.3	0.02	<0.01	0.02	0.6	55.3	44.7	71.5
B00264323	ABM Zone	96.79-101	96.79	97.5	K15-250	AK RHYc		9.6	Strong	0.54	45.0	0.01	<0.01	0.01	0.3	88.3	54.2	173.4
B00264324	ABM Zone	48.94-67.51	55.5	67.51	K15-250	AK RHYv	composite	9.3	Strong	1.26	105.0	0.28	<0.01	0.28	8.8	142.1	98.7	11.3
B00264325	ABM Zone	22.6-32	22.6	23.1	K15-256	CA CL MAF		8.8	Strong	5.10	425.0	0.24	0.02	0.22	6.9	447.1	392.0	57.0
B00264326	ABM Zone	22.6-32	22.6	32	K15-256	CA CL MAF	composite	9.0	None	<0.02	<1.7	0.01	0.01	0.00	0.0	24.2	15.8	>52
B00264327	ABM Zone	19.1-23	19.1	20.8	K15-259	PY AK RHYv		9.1	Moderate	1.39	115.8	0.75	0.02	0.73	22.8	121.0	110.1	4.8
B00264328	ABM Zone	23-26	24.6	25.3	K15-259	PY AK RHYv		9.5	Moderate	0.25	20.8	1.01	0.02	0.99	30.9	52.5	33.1	1.1
B00264329	ABM Zone	26-29.5	26	29	K15-259	PY AK RHYv		9.3	Moderate	0.43	35.8	2.25	0.02	2.23	69.7	69.7	52.8	0.8
B00264330	ABM Zone	29.5-33	29.5	30.2	K15-259	CARB MDS/RHY		9.1	None	<0.02	<1.7	0.78	<0.01	0.78	24.4	5.6	2.5	0.1
B00264331	ABM Zone	33-36.7	33	34.7	K15-259	CARB MDS/RHY		9.5	Moderate	0.41	34.2	0.78	<0.01	0.78	24.4	53.5	37.4	1.5
B00264332	ABM Zone	46-49.1	46	48.75	K15-259	PY CL RHY		8.4	Moderate	0.79	65.8	2.39	0.02	2.37	74.1	95.8	73.1	1.0
B00264333	ABM Zone	95.6-113	95.6	95.98	K15-260	PY AK RHYv		9.2	Moderate	0.32	26.7	3.08	<0.01	3.08	96.3	61.6	45.7	0.5
B00264334	ABM Zone	87.02-94	87.02	87.4	K15-260	PY AK RHYv		9.2	Strong	0.39	32.5	0.67	<0.01	0.67	20.9	79.6	42.5	2.0
B00264335	ABM Zone	8.7-25.36	8.7	9.05	K15-260	AK RHYv		9.5	Moderate	0.58	48.3	0.02	<0.01	0.02	0.6	63.4	46.8	74.9
B00264336	ABM Zone	216.65-225	216.65	217.35	K15-263	PY CL RHY		9.5	Moderate	0.46	38.3	1.19	<0.01	1.19	37.2	67.8	44.6	1.2
B00264337	ABM Zone	193.85-199.05	193.85	194.9	K15-263	CARB MDS/RHY		9.2	Moderate	0.54	45.0	1.12	<0.01	1.12	35.0	65.3	51.1	1.5
B00264338	ABM Zone	169.2-175	169.2	169.9	K15-263	PY AK RHYv		9.3	Moderate	0.72	60.0	0.59	<0.01	0.59	18.4	61.6	52.6	2.9
B00264339	ABM Zone	36.7-40	36.7	37.08	K15-264	AK RHYv		9.2	Strong	4.90	408.3	<0.01	0.01	<0.01	<0.3	336.4	242.8	>809
B00264340	ABM Zone	36.7-53.6	40	40.46	K15-264	AK RHYv		9.5	Strong	0.69	57.5	0.17	0.02	0.15	4.7	80.8	62.3	13.3
B00264341	ABM Zone	84.75-88.7	84.75	85.15	K15-264	PY AK RHYv		9.4	Moderate	0.63	52.5	0.74	<0.01	0.74	23.1	67.8	55.9	2.4
B00264342	ABM Zone	94.38-100.6	94.38	94.7	K15-264	PY AK RHYv		9.7	Moderate	0.73	60.8	0.28	<0.01	0.28	8.8	64.1	57.1	6.5
B00264343	ABM Zone	100.6-110	100.6	101	K15-264	PY AK RHYv		9.1	Moderate	0.87	72.5	0.85	0.02	0.83	25.9	90.8	74.0	2.9
B00264344	ABM Zone	110-119.2	110	110.37	K15-264	CARB MDS/RHY		9.5	Moderate	1.05	87.5	0.22	<0.01	0.22	6.9	93.3	84.4	12.3
B00264345	ABM Zone	167.3-171.22	167.3	168.2	K15-264	CA CL MAF		9.4	Strong	1.83	152.5	0.06	0.02	0.04	1.3	216.4	141.3	113.0
B00264346	ABM Zone	199.4-213	199.4	200.9	K15-265	MU PY RHY		8.9	Strong	0.60	50.0	2.11	<0.01	2.11	65.9	92.0	62.6	0.9
B00264347	ABM Zone	63.5-65	63.5	64.2	K15-267	AK RHYv		9.2	Strong	0.37	30.8	0.05	0.02	0.03	0.9	47.3	34.9	37.2
B00264348	ABM Zone	37.4-44	37.4	37.8	K15-270	AK RHYv		9.1	Strong	0.59	49.2	0.26	0.02	0.24	7.5	74.8	54.4	7.3
B00264349	ABM Zone	48.3-54.1	48.3	48.6	K15-270	AK RHYv		9.1	Strong	0.91	75.8	0.46	0.03	0.43	13.4	134.3	89.5	6.7
B00264350	ABM Zone	84.3-90.1	84.3	84.71	K15-270	PY AK RHYc		9.1	Strong	0.43	35.8	0.56	0.02	0.54	16.9	69.0	44.8	2.7
B00264351	ABM Zone	103.6-108.4	103.6	104	K15-270	PY AK RHYv		9.3	Moderate	0.36	30.0	0.51	<0.01	0.51	15.9	42.3	33.5	2.1
B00264352	ABM Zone	16.1-20.5	16.1	16.8	K15-272	CARB MDS/RHY		8.9	None	0.02	1.7	1.43	<0.01	1.43	44.7	3.8	2.3	0.1
B00264353	ABM Zone	20.5-23.9	20.5	21.15	K15-272	CARB MDS/RHY		9.5	Slight	0.08	6.7	0.82	<0.01	0.82	25.6	11.7	4.4	0.2
B00264354	ABM Zone	54.5-55.4	54.5	56	K15-272	PY AK RHYc		9.0	Moderate	0.12	10.0	4.93	<0.01	4.93	154.1	27.7	18.9	0.1
B00264355	ABM Zone	57.3-60	57.3	59	K15-272	CARB MDS/RHY		9.0	None	0.02	1.7	2.13	<0.01	2.13	66.6	7.5	5.2	0.1
B00264356	ABM Zone	60-62.27	60	62	K15-272	CARB MDS/RHY		9.8	Moderate	0.56	46.7	1.75	<0.01	1.75	54.7	61.1	51.4	0.9
B00264357	ABM Zone	111.8-113.36	111.8	112.4	K15-272	CA CL MAF		9.8	Strong	3.01	250.8	0.15	0.02	0.13	4.1	354.1	246.1	60.6
B00264358	ABM Zone	117.5-121	119	119.72	K15-272	CA CL MAF		9.7	Strong	0.84	70.0	0.16	<0.01	0.16	5.0	99.8	75.3	15.1
B00264359	ABM Zone	23.87-31.2	23.87	24.27	k15-278	AK RHYv		9.7	Moderate	0.41	34.2	0.73	<0.01	0.73	22.8	58.6	44.6	2.0
B00264360	ABM Zone	41.73-45	41.73	42.13	k15-278	CARB MDS/RHY		9.7	Slight	0.53	44.2	2.59	0.03	2.56	80.0	65.6	50.7	0.6
B00264361	ABM Zone	45-50	45.5	45.83	k15-278	CARB MDS/RHY		9.7	Moderate	0.35	29.2	0.13	0.04	0.09	2.8	36.2	29.9	10.6

Blank cells indicate parameter was not analyzed.

BMC Sample ID	ABM Pit Zone	Geodomain interval	From	To	Hole ID and Interval	Correct Geodomain	Comments	Paste pH	Fizz Rating	Total Inorganic C	Carbonate-NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	Siderite Corrected NP	Modified Sobek NP	NP/AP
		m	m	m				pH Units		wt %	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	kg $CaCO_3$/t	
							Detection Limit:			0.02	1.7	0.01	0.01	0.01	1.3	0.5	0.5	
B00264362	ABM Zone	50-55	50	50.4	k15-278	CARB MDS/RHY		9.7	Strong	0.65	54.2	0.40	0.03	0.37	11.6	97.3	64.8	5.6
B00264363	ABM Zone	55-67.33	55	55.39	k15-278	AK RHYv		9.5	Strong	0.81	67.5	0.47	0.02	0.45	14.1	137.2	85.0	6.0
B00264364	ABM Zone	96.47-100.44	96.47	96.83	k15-278	PY AK RHYv		9.1	Strong	1.54	128.3	0.14	<0.01	0.14	4.4	172.1	123.8	28.3
B00264365	ABM Zone	112.08-124.57	112.08	112.46	k15-278	PY AK RHYv		9.3	Moderate	0.80	66.7	0.85	<0.01	0.85	26.6	76.7	69.9	2.6
B00264366	ABM Zone	60-65.54	60	60.7	K15-279	MU PY RHY		10.0	Moderate	0.60	50.0	0.26	<0.01	0.26	8.1	63.0	53.3	6.6
B00264367	ABM Zone	48.7-60	48.7	49.27	K15-279	MU PY RHY		9.7	Moderate	0.44	36.7	0.61	<0.01	0.61	19.1	56.1	44.7	2.3
B00264368	ABM Zone	108.51-114.31	108.5	108.91	k15-281	PY AK RHYv		9.8	Moderate	0.18	15.0	0.39	<0.01	0.39	12.2	31.2	23.6	1.9
B00264369	ABM Zone	101-104.38	101	101.4	k15-281	PY AK RHYv		9.7	Moderate	0.59	49.2	1.19	<0.01	1.19	37.2	71.1	65.4	1.8
B00264370	ABM Zone	99-101	99	99.38	k15-281	PY AK RHYv		9.7	Strong	0.68	56.7	1.35	0.02	1.33	41.6	97.3	74.4	1.8
B00264371	ABM Zone	95-99	95	95.38	k15-281	PY AK RHYv		9.5	Strong	1.19	99.2	0.48	0.02	0.46	14.4	125.9	96.9	6.7
B00264372	ABM Zone	92.92-95	92.92	93.29	k15-281	PY AK RHYv		9.7	Strong	0.59	49.2	1.11	0.02	1.09	34.1	92.3	64.4	1.9
B00264373	ABM Zone	80.71-86.61	80.71	81.08	k15-281	PY AK RHYv		9.6	Moderate	0.59	49.2	2.41	0.02	2.39	74.7	81.0	72.6	1.0
B00264374	ABM Zone	67.07-69.12	67.07	67.44	k15-281	AK RHYv		9.7	Strong	0.96	80.0	0.02	<0.01	0.02	0.6	108.5	74.4	119.0
B00264375	ABM Zone	60.02-63.15	60.02	60.38	k15-281	AK RHYv		9.6	Strong	0.82	68.3	0.27	<0.01	0.27	8.4	124.7	71.9	8.5
B00264376	ABM Zone	53.6-59.14	53.6	54	k15-281	AK RHYv		9.3	Moderate	0.80	66.7	1.11	0.02	1.09	34.1	93.5	82.9	2.4
B00264401	ABM Zone	18.6-37	21.61	22.19	K15-301	PY AK RHYv		8.8	None	<0.02	<1.7	1.93	<0.01	1.93	60.3	6.8	4.2	0.1
B00264402	ABM Zone	42-47	42	42.64	K15-301	PY AK RHYv		9.1	Moderate	0.32	26.7	1.46	0.02	1.44	45.0	55.3	39.6	0.9
B00264403	ABM Zone	66.7-76.6	66.7	67.53	K15-301	CARB MDS/RHY		9.4	None	<0.02	<1.7	0.22	<0.01	0.22	6.9	4.2	2.0	0.3
B00264404	ABM Zone	62.52-66.5	62.52	63.24	K15-301	CARB MDS/RHY		9.2	None	0.04	3.3	1.38	<0.01	1.38	43.1	9.2	7.5	0.2
B00264405	ABM Zone	104.8-110	107	108.15	K15-301	MU PY RHY		9.8	Moderate	1.62	135.0	0.17	<0.01	0.17	5.3	140.5	123.9	23.3
B00264406	ABM Zone	22.7-28.15	22.7	23.46	K15-299	AK RHYv		10.0	Strong	0.72	60.0	0.35	<0.01	0.35	10.9	108.2	68.9	6.3
B00264407	ABM Zone	29-40	29	29.65	K15-299	AK RHYv		9.7	Moderate	0.34	28.3	0.45	<0.01	0.45	14.1	58.5	36.5	2.6
B00264408	ABM Zone	57.6-60.98	57.6	58.3	K15-299	PY AK RHYc		9.7	Strong	0.72	60.0	1.08	0.02	1.06	33.1	108.2	79.9	2.4
B00264409	ABM Zone	77.62-83.06	77.62	78.32	K15-299	PY AK RHYv		9.4	Moderate	0.89	74.2	0.23	<0.01	0.23	7.2	88.6	71.6	10.0
B00264410	ABM Zone	200-202	201	201.45	K15-297	MU PY RHY		9.7	Strong	0.63	52.5	0.14	<0.01	0.14	4.4	77.1	55.4	12.7
B00264411	ABM Zone	33.55-40	33.55	34.19	K15-295	PY AK RHYv		9.7	Moderate	0.70	58.3	0.28	<0.01	0.28	8.8	66.5	50.2	5.7
B00264412	ABM Zone	40-58.5	40	40.67	K15-295	PY AK RHYv		9.4	Slight	0.11	9.2	1.74	<0.01	1.74	54.4	22.9	16.7	0.3
B00264413	ABM Zone	80.65-82.1	80.65	81.26	K15-295	PY AK RHYv		9.8	Moderate	0.72	60.0	0.20	<0.01	0.20	6.3	66.9	55.2	8.8
B00264414	ABM Zone	149.53-157.63	149.53	150.53	K15-295	MU PY RHY		9.7	Moderate	1.01	84.2	0.02	<0.01	0.02	0.6	95.1	76.0	121.6
B00264415	ABM Zone	157.63-164.28	157.63	158.35	K15-295	CARB MDS/RHY		9.2	None	0.04	3.3	0.86	0.02	0.84	26.3	9.3	4.2	0.2
B00264416	ABM Zone	164.5-170.2	164.5	165.3	K15-295	PY CL RHY		9.3	None	<0.02	<1.7	0.15	<0.01	0.15	4.7	9.0	3.0	0.6
B00264417	ABM Zone	200.9-222.5	206	206.63	K15-291	PY CL RHY		9.5	None	0.05	4.2	1.34	0.02	1.32	41.3	9.6	5.5	0.1
B00264418	ABM Zone	169-176.1	169	169.64	K15-291	CARB MDS/RHY		9.6	Moderate	0.49	40.8	0.33	<0.01	0.33	10.3	56.6	34.9	3.4
B00264419	ABM Zone	165.5-169	165.5	166.17	K15-291	CARB MDS/RHY		9.8	Moderate	0.85	70.8	0.01	0.01	0.00	0.0	83.3	55.3	>184
B00264420	ABM Zone	162-165.5	162	162.63	K15-291	CARB MDS/RHY		9.7	Moderate	1.15	95.8	0.06	<0.01	0.06	1.9	99.8	77.5	41.3
B00264421	ABM Zone	160.38-162	160.38	161.05	K15-291	CARB MDS/RHY		9.5	Moderate	1.33	110.8	0.01	<0.01	0.01	0.3	98.3	85.0	272.0
B00264422	ABM Zone	115-122.61	115	115.65	K15-291	PY AK RHYv		9.8	Moderate	0.30	25.0	0.56	<0.01	0.56	17.5	44.8	33.0	1.9
B00264423	ABM Zone	98.9-115	98	98.7	K15-291	PY AK RHYv		9.7	Moderate	0.40	33.3	0.51	<0.01	0.51	15.9	58.5	41.2	2.6
B00264424	ABM Zone	95-98.5	95	95.7	K15-291	PY AK RHYv		9.7	Moderate	0.40	33.3	0.49	<0.01	0.49	15.3	74.6	42.3	2.8
B00264425	ABM Zone	83-91.11	83	83.66	K15-291	PY AK RHYv		9.7	Moderate	1.00	83.3	1.11	<0.01	1.11	34.7	90.8	80.7	2.3
B00264426	ABM Zone	78.88-83	83.66	84.31	K15-291	PY AK RHYv		9.9	Moderate	0.75	62.5	0.56	<0.01	0.56	17.5	75.9	60.0	3.4
B00264427	ABM Zone	78.88-91.11	78.88	79.56	K15-291	PY AK RHYv		9.0	Moderate	0.63	52.5	2.10	0.02	2.08	65.0	75.2	62.6	1.0
B00264428	ABM Zone	71.15-78.38	71.15	71.81	K15-291	PY AK RHYv		9.6	Moderate	0.73	60.8	0.82	<0.01	0.82	25.6	81.2	68.2	2.7
B00264429	ABM Zone	62-68.14	63.95	64.61	K15-291	PY AK RHYv		9.2	Moderate	0.40	33.3	3.05	<0.01	3.05	95.3	54.7	43.6	0.5
B00264430	ABM Zone	46-57	46	46.65	K15-291	PY AK RHYv		9.2	Strong	1.94	161.7	1.99	0.03	1.96	61.3	221.4	185.2	3.0
B00264431	ABM Zone	9-25.1	12	12.7	K15-290	AK RHYv		9.5	Strong	0.30	25.0	0.24	<0.01	0.24	7.5	70.3	32.1	4.3
B00264432	ABM Zone	12.5-15	12.7	13.43	K15-290	AK RHYv		9.6	Strong	0.85	70.8	0.08	<0.01	0.08	2.5	139.3	81.7	32.7
B00264433	ABM Zone	15-18.5	21	22	K15-290	AK RHYv		9.7	Moderate	0.51	42.5	0.10	<0.01	0.10	3.1	55.0	43.2	13.8
B00264434	ABM Zone	18.5-25	24	25.1	K15-290	AK RHYv		9.7	Moderate	0.57	47.5	0.07	<0.01	0.07	2.2	57.2	45.5	20.8
B00264435	ABM Zone	30.85-40	30.85	31.8	K15-290	AK RHYv		9.8	Moderate	0.96	80.0	0.58	<0.01	0.58	18.1	86.8	77.4	4.3
B00264436	ABM Zone	40-58.7	42	42.92	K15-290	PY AK RHYv		9.3	Slight	0.10	8.3	0.18	<0.01	0.18	5.6	26.1	14.8	2.6
B00264437	ABM Zone	100-113	105	105.7	K15-290	CA CL MAF		9.1	Strong	2.01	167.5	0.04	<0.01	0.04	1.3	265.5	171.9	137.5
B00264438	ABM Zone	113-126	113.06	113.7	K15-290	CA CL MAF		8.7	Strong	1.78	148.3	0.01	0.01	0.00	0.0	291.7	154.2	>514

Blank cells indicate parameter was not analyzed.

BMC Sample ID	ABM Pit Zone	Geodomain interval	From	To	Hole ID and Interval	Correct Geodomain	Comments	Paste pH	Fizz Rating	Total Inorganic C	Carbonate-NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	Siderite Corrected NP	Modified Sobek NP	NP/AP
		m	m	m				pH Units		wt %	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	kg $CaCO_3$/t	
							Detection Limit:			0.02	1.7	0.01	0.01	0.01	1.3	0.5	0.5	
B00264439	ABM Zone	40.59-47.14	40.59	42.38	K15-287	MU PY RHY		8.3	None	0.06	5.0	1.41	0.02	1.39	43.4	14.7	10.0	0.2
B00264440	ABM Zone	63-67	63	63.67	K15-286	PY AK RHYv		9.1	Slight	0.13	10.8	2.09	<0.01	2.09	65.3	16.6	17.2	0.3
B00264441	ABM Zone	67-71.75	67	67.69	K15-286	PY AK RHYv		9.6	Moderate	0.39	32.5	0.35	<0.01	0.35	10.9	60.9	38.7	3.5
B00264442	ABM Zone	71.75-78.8	71.75	72.44	K15-286	PY AK RHYv		9.4	Strong	1.36	113.3	1.33	<0.01	1.33	41.6	149.3	104.9	2.5
B00264443	ABM Zone	214.63-220.96	218	218.37	K15-284	CA CL MAF		9.4	Strong	2.28	190.0	0.05	<0.01	0.05	1.6	214.6	187.8	120.2
B00264444	ABM Zone	212.5-214.63	212.5	212.95	k15-284	CA CL MAF		10.0	Slight	0.09	7.5	0.64	<0.01	0.64	20.0	14.0	10.6	0.5
B00264445	ABM Zone	200.24-212.5	201.73	202.07	k15-284	CA CL MAF		9.4	Strong	1.23	102.5	<0.01	0.01	<0.01	<0.3	225.7	106.8	>356
B00264446	ABM Zone	132.95-149.9	132.95	133.36	K15-284	PY AK RHYv		9.6	Moderate	0.15	12.5	0.59	<0.01	0.59	18.4	36.7	17.6	1.0
B00264447	ABM Zone	128.95-132.95	128.97	129.35	K15-284	PY AK RHYv		9.0	Strong	1.16	96.7	0.46	<0.01	0.46	14.4	164.2	99.0	6.9
B00264448	ABM Zone	74.46-88.59	74.46	74.82	K15-284	PY AK RHYv		9.6	Strong	0.95	79.2	0.97	0.02	0.95	29.7	138.7	90.4	3.0
B00264449	ABM Zone	66.02-69.28	66.02	66.42	K15-284	PY AK RHYv		9.7	Moderate	1.06	88.3	0.30	<0.01	0.30	9.4	92.0	78.4	8.4
B00264450	ABM Zone	60.82-66.02	60.82	61.21	K15-284	PY AK RHYv		9.3	Moderate	0.51	42.5	0.70	0.02	0.68	21.3	67.2	49.7	2.3
B00264451	ABM Zone	34.01-44.45	34.01	34.41	k15-284	AK RHYv		9.1	Moderate	0.24	20.0	0.91	<0.01	0.91	28.4	47.9	30.2	1.1
B00264452	ABM Zone	142-145.41	142	142.43	K15-283	PY CL RHY		8.6	Moderate	1.89	157.5	0.04	0.02	0.02	0.6	138.7	127.3	203.7
B00264453	ABM Zone	125-130.53	125	125.35	K15-283	PY CL RHY		9.3	None	0.04	3.3	0.17	<0.01	0.17	5.3	13.1	7.2	1.4
B00264454	ABM Zone	121.44-125	121.44	121.81	K15-283	MU PY RHY		8.4	Slight	0.07	5.8	0.06	<0.01	0.06	1.9	27.4	1.1	0.6
B00264455	ABM Zone	32-37.45	32	32.36	K15-283	PY AK RHYv		8.7	Moderate	0.62	51.7	1.21	0.02	1.19	37.2	60.5	49.2	1.3
B00264456	ABM Zone	27.32-32	27.32	27.66	K15-283	PY AK RHYv		8.8	Moderate	0.33	27.5	1.13	<0.01	1.13	35.3	46.8	31.9	0.9
B00264457	ABM Zone	182.9-188.9	182.9	188.9	K15-206	PY CL RHY	composite	9.5	Moderate	1.25	104.2	0.01	<0.01	0.01	0.3	100.7	96.1	307.5
B00264458	ABM Zone	132.1-158.53	132.1	158.53	K15-257	PY AK RHYc	composite	9.7	Moderate	0.52	43.3	0.10	<0.01	0.10	3.1	57.8	46.4	14.8
B00264459	ABM Zone	132.95-149.9	132.95	149.9	K15-284	PY AK RHYv	composite	9.2	Moderate	0.30	25.0	2.20	<0.01	2.20	68.8	44.2	35.9	0.5
B00293251	Krakatoa Zone		68	69	K15-316	RHYi		9.3	Moderate	0.16	13.3	0.84	0.05	0.79	24.7	19.0	0.2	20.1
B00293252	Krakatoa Zone		87	88	K15-316	RHYi		9.3	Moderate	0.09	7.5	1.71	0.04	1.67	52.2	16.2	0.3	36.7
B00293253	Krakatoa Zone		96	97	K15-316	RHYi		9.4	Strong	0.56	46.7	0.76	0.04	0.72	22.5	52.0	0.4	19.7
B00293254	Krakatoa Zone		111	112	K15-316	RHYi		9.1	Slight	0.05	4.2	1.04	0.03	1.01	31.6	8.2	0.4	9.5
B00293255	Krakatoa Zone		74	75	K15-313	RHYi		9.6	Moderate	0.05	4.2	0.95	0.05	0.90	28.1	9.9	0.2	24.2
B00293256	Krakatoa Zone		91	92	K15-313	RHYi		9.7	Strong	0.25	20.8	0.59	0.03	0.56	17.5	25.5	0.3	62.8
B00293257	Krakatoa Zone		105	106	K15-313	RHYi		9.8	Moderate	0.24	20.0	0.48	0.04	0.44	13.8	24.7	0.2	13.1
B00293258	Krakatoa Zone		123	124	K15-313	RHYi		9.6	Slight	0.05	4.2	0.94	0.03	0.91	28.4	9.6	0.4	13.3
B00293259	Krakatoa Zone		78.02	78.97	K15-312	RHYi		9.7	Strong	0.68	56.7	0.18	0.04	0.14	4.4	63.5	0.4	19.7
B00293260	Krakatoa Zone		84.95	86	K15-312	RHYi		9.3	None	0.01	0.9	0.69	0.08	0.61	19.1	5.6	0.2	10.5
B00293261	Krakatoa Zone		94.02	95	K15-312	RHYi		9.2	None	0.01	0.9	1.18	0.04	1.14	35.6	2.9	0.2	16.6
B00293262	Krakatoa Zone		106	107	K15-312	RHYi		8.9	Slight	0.15	12.5	0.59	0.03	0.56	17.5	17.0	0.3	4.1
Q930101	ABM Zone		27	27.44	K15-248	MDS		9.0	Strong	2.46	205.0	0.11	0.02	0.09	2.8		198.2	70.5
Q930102	ABM Zone		33.1	33.55	K15-248	MDS		8.6	Strong	3.22	268.3	0.13	<0.01	0.13	4.1		281.3	69.2
Q930103	ABM Zone		23	23.95	K15-258	MDS		8.8	Strong	3.69	307.5	0.10	<0.01	0.10	3.1		291.4	93.2
Q930104	ABM Zone		30.95	32	K15-258	MDS		8.4	Moderate	0.44	36.7	0.69	0.01	0.68	21.3		37.4	1.8
Q930105	ABM Zone		44	44.66	K15-258	MDS		9.4	Strong	0.90	75.0	0.23	0.02	0.21	6.6		81.8	12.5
Q930106	ABM Zone		30.96	32	K15-277	MDS		9.1	Strong	3.21	267.5	0.13	<0.01	0.13	4.1		256.9	63.2
Q930107	ABM Zone		47	47.9	K15-277	MDS		9.1	Strong	2.50	208.3	0.27	0.02	0.25	7.8		192.1	24.6
Q930108	ABM Zone		68	68.95	K15-277	MDS		9.0	Moderate	0.61	50.8	0.42	<0.01	0.42	13.1		30.1	2.3
Q930109	ABM Zone		90.5	91.7	K15-277	MDS		9.4	Strong	3.66	305.0	0.02	<0.01	0.02	0.6		286.1	457.8
Q930110	ABM Zone		15.5	17	K15-282	MDS		8.9	Strong	0.98	81.7	0.06	<0.01	0.06	1.9		79.3	42.3
Q930111	ABM Zone		35	36.3	K15-282	MDS		8.2	Moderate	0.38	31.7	0.58	0.02	0.56	17.5		36.6	2.1
Q930112	Krakatoa Zone		20	20.55	K15-303	AK RHYv		9.6	Strong	0.57	47.5	0.17	<0.01	0.17	5.3		46.0	8.7
Q930113	Krakatoa Zone		149.68	150.1	K15-304	CA CL MAF		9.0	Strong	0.55	45.8	0.10	0.02	0.08	2.5			0.0
Q930114	Krakatoa Zone		119.67	120.09	K15-304	MU PY RHY		9.0	Strong	0.24	20.0	0.70	<0.01	0.70	21.9		21.0	1.0
Q930115	Krakatoa Zone		134.5	135.03	K15-304	MU PY RHY		9.8	Strong	0.13	10.8	1.09	<0.01	1.09	34.1		14.4	0.4
Q930116	Krakatoa Zone		68.53	69	K15-305	PY AK RHYv		9.5	Strong	0.66	55.0	0.09	<0.01	0.09	2.8		57.6	20.5
Q930117	Krakatoa Zone		42.57	43.03	K15-305	PY AK RHYv		9.2	Strong	0.19	15.8	2.43	<0.01	2.43	75.9		30.1	0.4
Q930118	Krakatoa Zone		15.5	16	K15-305	AK RHYv		9.0	Strong	0.86	71.7	0.06	<0.01	0.06	1.9		70.7	37.7
Q930119	Krakatoa Zone		94	94.42	K15-307	PY AK RHYv		9.3	Strong	0.85	70.8	1.32	<0.01	1.32	41.3		72.7	1.8
Q930120	Krakatoa Zone		50.94	51.4	K15-307	CARB MDS/RHY		9.2	Moderate	0.49	40.8	0.19	<0.01	0.19	5.9		46.7	7.9

Blank cells indicate parameter was not analyzed.

BMC Sample ID	ABM Pit Zone	Geodomain interval	From	To	Hole ID and Interval	Correct Geodomain	Comments	Paste pH	Fizz Rating	Total Inorganic C	Carbonate-NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	Siderite Corrected NP	Modified Sobek NP	NP/AP
		m	m	m				pH Units		wt %	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	kg $CaCO_3$/t	
							Detection Limit:			0.02	1.7	0.01	0.01	0.01	1.3	0.5	0.5	
Q930121	Krakatoa Zone		35.96	36.5	K15-307	PY AK RHYv		9.5	Strong	0.42	35.0	0.19	0.02	0.17	5.3		37.6	7.1
Q930122	Krakatoa Zone		119	119.44	K15-310	MU PY RHY		8.7	Strong	0.97	80.8	0.82	<0.01	0.82	25.6		88.1	3.4
Q930123	Krakatoa Zone		98.7	99.15	K15-310	CARB MDS/RHY		7.8	Slight	0.10	8.3	3.68	0.02	3.66	114.4		9.6	0.1
Q930124	Krakatoa Zone		71	71.44	K15-310	PY AK RHYv		9.6	Strong	0.70	58.3	0.38	<0.01	0.38	11.9		63.1	5.3
Q930125	Krakatoa Zone		42.03	42.48	K15-310	PY AK RHYv		9.6	Slight	0.11	9.2	0.60	<0.01	0.60	18.8		11.4	0.6
Q930126	Krakatoa Zone		38	38.47	K15-311	PY AK RHYv		9.1	Slight	0.08	6.7	0.27	<0.01	0.27	8.4		9.1	1.1
Q930127	Krakatoa Zone		60	60.47	K15-313	CA CL MAF		9.6	Strong	1.22	101.7	0.07	0.02	0.05	1.6		106.8	68.4
Q930128	Krakatoa Zone		76.5	77.5	K15-314	CA CL MAF		8.9	Strong	1.00	83.3	0.01	0.02	<0.01	<0.3		138.9	>463
Q930129	Krakatoa Zone		65.2	66.12	K15-314	CA CL MAF		8.7	Strong	2.74	228.3	0.01	0.01	<0.01	<0.3		204.5	>681
Q930130	Krakatoa Zone		116.74	117.18	K15-315	CA CL MAF		9.4	Strong	0.23	19.2	0.02	0.02	<0.01	<0.3		28.8	>96
Q930131	Krakatoa Zone		45	45.47	K15-315	PY AK RHYv		9.6	Moderate	0.29	24.2	0.82	<0.01	0.82	25.6		30.3	1.2
Q930132	Krakatoa Zone		42.55	43	K15-316	CA CL MAF		9.6	Strong	0.64	53.3	0.02	0.02	<0.01	<0.3		59.3	>197
Q930133	Krakatoa Zone		55.16	55.58	K15-317	CA CL MAF		9.2	Strong	1.08	90.0	0.01	<0.01	0.01	0.3		93.2	298.2
Q930134	Krakatoa Zone		114	115	K15-319	MU PY RHY		9.3	None	<0.02	<1.7	1.27	<0.01	1.27	39.7		1.5	0.0
Q930135	Krakatoa Zone		104.5	105.44	K15-319	CA CL MAF		9.0	Strong	1.44	120.0	0.06	0.03	0.03	0.9		123.5	131.7
Q930136	Krakatoa Zone		50	50.47	K15-319	MU PY RHY		9.7	Slight	0.05	4.2	0.80	<0.01	0.80	25.0		6.1	0.2
Q930137	Krakatoa Zone		137	137.44	K15-320	CA CL MAF		9.2	Strong	1.10	91.7	0.02	0.02	<0.01	<0.3		102.0	>340
Q930138	Krakatoa Zone		110	110.45	K15-320	MU PY RHY		9.5	Strong	0.26	21.7	0.81	<0.01	0.81	25.3		26.5	1.0
Q930139	Krakatoa Zone		77.29	77.77	K15-320	MU PY RHY		9.2	Strong	0.92	76.7	1.01	<0.01	1.01	31.6		76.0	2.4
Q930140	Krakatoa Zone		59	59.49	K15-320	PY AK RHYv		9.7	Strong	0.76	63.3	1.03	<0.01	1.03	32.2		56.1	1.7
Q930141	Krakatoa Zone		24.6	25.09	K15-320	AK RHYv		9.7	Strong	0.73	60.8	0.35	<0.01	0.35	10.9		69.4	6.3
Q930142	Krakatoa Zone		99.96	100.38	K15-321	PY AK RHYv		9.5	Strong	0.51	42.5	0.22	<0.01	0.22	6.9		45.5	6.6
Q930143	Krakatoa Zone		93	94	K15-322	CA CL MAF		9.1	Strong	0.42	35.0	0.19	<0.01	0.19	5.9		36.1	6.1
Q930144	Krakatoa Zone		77.5	78.5	K15-322	MU PY RHY		9.7	Strong	0.27	22.5	0.86	<0.01	0.86	26.9		26.3	1.0
Q930145	Krakatoa Zone		65.5	66.5	K15-322	CA CL MAF		8.9	Strong	2.02	168.3	0.13	0.03	0.10	3.1		168.2	53.8
Q930146	Krakatoa Zone		35	36	K15-322	MU PY RHY		9.6	Strong	0.39	32.5	0.63	<0.01	0.63	19.7		38.1	1.9
Q930147	Krakatoa Zone		68	68.49	K15-323	CA CL MAF		9.4	Strong	0.96	80.0	0.11	0.03	0.08	2.5		92.7	37.1
Q930148	ABM Zone		17.1	18.1	K94-032	MDS		8.6	Strong	0.65	54.2	0.91	0.02	0.89	27.8		71.8	2.6
Q930149	ABM Zone		45.6	46.5	K94-032	MDS		8.6	Moderate	0.08	6.7	0.35	0.03	0.32	10.0		12.6	1.3
Q930150	ABM Zone		80.2	81.1	K94-032	MDS		8.6	Slight	0.42	35.0	0.22	<0.01	0.22	6.9		38.0	5.5
Q930151	ABM Zone		124.4	125.4	K94-032	MDS		8.5	Slight	0.23	19.2	0.30	0.03	0.27	8.4		25.0	3.0
Q930152	ABM Zone		58.9	59.7	K95-109	MDS		8.6	Strong	1.38	115.0	0.59	0.03	0.56	17.5		119.6	6.8
Q930153	ABM Zone		119.98	120.7	K95-109	MDS		8.9	Moderate	1.15	95.8	0.28	0.02	0.26	8.1		91.4	11.2
Q930154	ABM Zone		21.6	22.35	K95-110	MDS		9.3	Strong	2.10	175.0	0.37	<0.01	0.37	11.6		168.8	14.6
Q930155	ABM Zone		50.1	50.9	K95-110	MDS		8.9	Strong	3.11	259.2	0.18	<0.01	0.18	5.6		258.0	45.9
Q930156	ABM Zone		68.3	69.05	K95-110	MDS		9.0	Strong	6.84	570.0	0.18	<0.01	0.18	5.6		548.8	97.6
Q930157	ABM Zone		32.6	33.44	K95-115	MDS		7.3	Strong	0.80	66.7	2.11	0.22	1.89	59.1		82.8	1.4
Q930158	ABM Zone		79.6	80.44	K95-115	MDS		9.4	Strong	3.59	299.2	0.18	<0.01	0.18	5.6		287.6	51.1
Q930159	ABM Zone		24.2	25.1	K95-116	MDS		8.3	Strong	1.66	138.3	0.37	0.03	0.34	10.6		139.1	13.1
Q930160	ABM Zone		58.2	59	K95-116A	MDS		9.3	Moderate	0.26	21.7	0.33	<0.01	0.33	10.3		29.5	2.9
Q930161	ABM Zone		24.2	25	K95-119	MDS		9.0	Moderate	0.98	81.7	0.65	0.01	0.64	20.0		97.0	4.9
Q930162	ABM Zone		32.9	33.85	K95-119	MDS		8.4	Strong	1.59	132.5	0.74	0.04	0.70	21.9		145.2	6.6
Q930163	ABM Zone		59.7	60.5	K95-119	MDS		8.2	Strong	1.81	150.8	0.24	0.04	0.20	6.3		159.2	25.5
Q930164	ABM Zone		68.9	69.8	K95-119	MDS		9.2	Strong	3.86	321.7	0.05	0.02	0.03	0.9		304.8	325.1
Q930165	Krakatoa Zone		41.4	42.2	K95-124	AK RHYv		8.9	Strong	1.57	130.8	0.71	<0.01	0.71	22.2		131.1	5.9
Q930166	Krakatoa Zone		51.2	52.1	K95-124	AK RHYv		9.1	Strong	0.88	73.3	0.18	<0.01	0.18	5.6		63.9	11.4
Q930167	ABM Zone		60.6	61.4	K95-124	MDS		8.5	Moderate	0.88	73.3	0.61	0.02	0.59	18.4		78.5	4.3
Q930168	ABM Zone		14.6	15.07	K97-173	MDS		8.8	Strong	2.73	227.5	0.03	0.01	0.02	0.6		208.7	333.9
Q930169	ABM Zone		31.1	31.57	K97-173	MDS		9.1	Strong	3.05	254.2	0.05	<0.01	0.05	1.6		234.5	150.1
Q930170	Krakatoa Zone		20.2	20.7	K97-175	AK RHYv		8.0	Strong	0.49	40.8	0.36	0.11	0.25	7.8		57.3	7.3
Q930171	Krakatoa Zone		49.7	50.2	K97-175	CARB MDS/RHY		8.3	Strong	0.28	23.3	0.10	0.03	0.07	2.2		38.1	17.4
Q930172	ABM Zone		79.87	80.28	K97-175	MDS		8.8	Strong	2.46	205.0	0.28	0.02	0.26	8.1		200.7	24.7
Q930173	ABM Zone		107.17	107.6	K97-175	MDS		7.7	None	0.09	7.5	0.40	0.04	0.36	11.3		3.8	0.3

Blank cells indicate parameter was not analyzed.

BMC Sample ID	ABM Pit Zone	Geodomain interval	From	To	Hole ID and Interval	Correct Geodomain	Comments	Paste pH	Fizz Rating	Total Inorganic C	Carbonate-NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	Siderite Corrected NP	Modified Sobek NP	NP/AP
		m	m	m				pH Units		wt %	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	kg $CaCO_3$/t	
							Detection Limit:			**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**1.3**	**0.5**	**0.5**	
Q930174	ABM Zone		135	135.5	K97-175	MDS		8.4	Strong	4.64	386.7	0.46	0.02	0.44	13.8		341.1	24.8
Q930175	ABM Zone		9.38	9.8	K97-178	MDS		8.8	Strong	2.18	181.7	0.01	<0.01	0.01	0.3		177.5	568.0
Q930176	ABM Zone		30.8	31.6	K97-178	MDS		7.9	Slight	0.03	2.5	0.09	0.02	0.07	2.2		11.4	5.2
Q930177	Krakatoa Zone		157.98	158.43	K15-319	CA CL MAF		9.2	Strong	2.52	210.0	0.03	<0.01	0.03	0.9		215.2	229.5
Q930178	Krakatoa Zone		63.7	64.1	K15-320	PY AK RHYv		10.0	Moderate	0.47	39.2	0.30	<0.01	0.30	9.4		37.1	4.0
Q930179	Krakatoa Zone		149	149.84	K15-322	CA CL MAF		9.3	Strong	1.37	114.2	0.05	<0.01	0.05	1.6		115.9	74.2

Blank cells indicate parameter was not analyzed.

BMC Sample ID	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.01**	**0.1**	**0.005**	**10**	**10**	**0.05**	**0.01**	**0.01**	**0.01**	**0.02**	**0.1**	**1**	**0.05**	**0.2**	**0.01**	**0.05**	**0.05**	**0.02**	**0.01**	**0.005**
B00264201	0.16	0.42	4.4	<0.005	<10	57	0.20	0.53	0.77	0.12	21.81	2.7	72	0.30	18.6	1.41	1.13	0.05	0.45	<0.01	0.005
B00264202	0.32	0.66	14.1	<0.005	<10	297	0.36	0.47	0.34	0.03	117.98	4.3	91	0.41	3.5	0.78	2.10	0.15	0.54	0.03	0.006
B00264203	0.76	0.50	491.1	<0.005	<10	349	0.27	1.57	2.89	0.29	51.73	2.6	75	0.58	4.4	0.66	1.43	0.06	0.37	<0.01	0.006
B00264204	0.84	0.45	4.5	<0.005	<10	95	0.31	0.62	1.22	0.44	38.31	4.6	88	3.78	40.7	2.33	1.57	0.07	0.50	0.02	0.026
B00264205	0.28	0.51	0.2	<0.005	<10	316	0.20	0.41	2.04	0.33	67.30	2.5	78	0.65	50.0	1.94	1.50	0.09	0.21	<0.01	0.006
B00264206	0.08	0.50	13.9	<0.005	<10	139	0.20	0.25	1.47	0.29	43.37	6.8	76	0.24	13.4	2.69	1.50	0.08	0.20	<0.01	0.007
B00264207	0.54	0.46	24.7	<0.005	<10	139	0.19	0.48	1.06	0.58	26.69	2.3	84	0.26	16.2	1.47	1.30	0.05	0.53	0.02	0.013
B00264209	0.27	0.44	6.2	<0.005	<10	217	0.22	0.98	1.46	0.36	45.93	5.8	70	0.18	61.3	2.01	1.33	0.08	0.19	<0.01	<0.005
B00264211	0.21	0.55	2.0	<0.005	<10	364	0.24	0.24	1.69	0.22	58.09	2.9	72	0.25	41.8	1.53	1.63	0.07	0.16	<0.01	0.005
B00264212	0.07	0.46	2.5	<0.005	<10	241	0.24	0.27	1.69	0.17	50.58	3.5	61	0.18	39.7	1.69	1.33	0.07	0.20	<0.01	<0.005
B00264213	0.26	0.40	95.2	0.007	<10	53	0.19	0.39	5.24	0.37	19.28	3.0	75	0.55	4.6	1.05	0.90	<0.05	0.30	0.02	0.008
B00264214	0.22	0.41	28.7	<0.005	<10	41	0.06	0.43	0.05	0.62	11.79	0.8	102	<0.05	11.1	1.20	0.39	<0.05	0.25	0.04	<0.005
B00264215	0.26	0.38	10.2	<0.005	<10	49	0.17	0.36	2.32	0.21	24.74	2.2	79	0.45	8.4	1.09	0.93	<0.05	0.54	0.03	0.006
B00264216	0.12	0.45	0.9	<0.005	<10	118	0.19	0.07	1.94	0.08	42.49	3.4	52	0.21	7.1	2.07	1.39	0.07	0.25	<0.01	0.008
B00264217	0.02	0.60	0.2	<0.005	<10	196	0.35	0.02	1.55	0.20	70.44	1.2	93	0.34	6.0	1.39	2.17	0.09	0.21	<0.01	0.013
B00264218	0.24	0.54	9.2	0.005	<10	54	0.24	3.04	1.09	2.18	35.88	7.0	97	0.25	121.2	2.82	1.38	0.08	0.31	0.01	0.018
B00264219	1.58	0.50	20.4	<0.005	<10	57	0.26	2.01	2.81	0.33	18.31	8.4	30	0.43	13.5	5.21	1.54	0.10	0.42	0.02	0.020
B00264220	0.28	3.72	23.7	<0.005	<10	416	0.24	<0.01	4.49	0.09	10.40	40.5	203	4.58	72.5	5.54	8.95	0.13	0.03	<0.01	0.028
B00264221	0.44	0.44	17.0	<0.005	<10	95	0.24	0.17	0.15	0.66	22.05	3.7	71	0.34	42.6	1.16	1.88	0.07	0.85	<0.01	0.009
B00264222	0.65	0.47	14.4	0.005	<10	146	0.21	0.53	1.15	0.75	24.13	2.7	65	0.23	13.6	1.76	1.20	0.06	1.06	0.03	0.010
B00264223	7.29	0.75	180.7	0.015	<10	340	0.30	0.83	0.02	31.20	42.42	4.0	105	0.39	248.6	0.97	2.44	0.98	0.96	0.43	0.059
B00264224	0.56	0.16	12.3	0.011	<10	118	0.07	0.16	6.15	0.63	26.79	5.5	100	0.21	35.5	0.88	0.55	0.05	0.24	<0.01	<0.005
B00264225	0.14	0.46	1.8	<0.005	<10	192	0.20	0.38	2.02	0.35	39.24	6.9	51	0.57	37.6	2.42	1.30	0.06	0.27	<0.01	0.007
B00264226	0.36	0.39	0.4	<0.005	<10	216	0.18	0.79	0.69	3.34	28.00	3.0	68	0.25	41.7	1.00	1.19	0.05	0.51	0.04	0.024
B00264227	0.86	0.41	18.2	0.007	<10	121	0.21	0.58	0.07	0.04	28.77	2.5	80	0.26	11.5	1.37	1.37	0.08	0.39	0.39	0.006
B00264228	0.30	0.63	0.4	<0.005	<10	192	0.23	0.82	1.46	0.15	51.51	5.7	52	1.68	44.6	2.12	2.14	0.08	0.30	<0.01	0.008
B00264229	0.02	0.51	0.7	<0.005	<10	174	0.21	0.02	0.97	0.09	71.39	1.2	53	0.20	5.5	0.89	1.59	0.09	0.17	<0.01	0.007
B00264230	0.11	0.50	7.5	<0.005	<10	244	0.28	0.26	2.82	0.33	40.20	4.1	68	0.49	48.8	3.25	1.48	0.07	0.16	0.01	0.009
B00264231	0.13	0.54	15.5	<0.005	<10	126	0.24	0.18	1.83	0.35	45.69	6.3	79	0.41	8.5	2.96	1.83	0.08	0.23	<0.01	0.012
B00264232	0.20	0.47	3.4	<0.005	<10	160	0.24	1.22	2.23	0.79	42.01	5.0	95	0.65	54.6	3.09	1.28	0.08	0.21	<0.01	0.010
B0264233	0.09	0.51	1.5	<0.005	<10	155	0.20	0.10	1.90	0.19	49.11	4.9	87	0.37	9.1	2.32	1.46	0.07	0.22	<0.01	0.010
B00264234	0.20	0.53	13.1	<0.005	<10	145	0.21	0.40	2.25	0.23	38.44	9.8	69	0.52	12.3	3.75	1.42	0.07	0.22	<0.01	0.013
B00264235	8.17	0.66	3098.6	0.074	<10	140	0.26	0.54	0.32	2.37	25.91	3.6	82	0.67	54.4	2.20	2.06	0.11	1.06	0.06	0.048
B00264236	8.18	0.45	844.2	0.030	<10	148	0.22	2.35	0.03	1.96	21.01	2.0	78	0.22	44.7	1.95	1.37	0.13	0.70	0.04	0.038
B00264237	0.07	2.56	2.5	<0.005	<10	714	0.71	0.04	3.58	0.21	35.70	22.2	53	15.26	13.5	5.56	10.12	0.15	0.07	<0.01	0.047
B00264238	0.19	0.58	0.1	<0.005	<10	130	0.25	0.45	1.83	0.41	55.44	6.0	81	0.54	36.4	2.64	1.63	0.08	0.34	<0.01	0.013
B00264239	0.89	1.08	0.3	<0.005	<10	209	0.31	1.40	1.53	0.49	91.13	10.9	106	2.61	18.0	3.54	2.83	0.13	0.38	<0.01	0.015
B00264240	0.21	3.73	45.9	0.007	<10	507	0.32	<0.01	6.46	0.31	12.71	37.0	155	14.50	50.1	5.36	8.00	0.15	<0.02	<0.01	0.029
B00264241	1.60	0.43	34.5	<0.005	<10	146	0.14	0.68	1.29	0.49	24.63	2.8	63	0.23	15.9	2.25	1.24	0.05	0.49	0.12	0.009
B00264242	0.47	1.38	19.7	0.005	12	142	0.62	0.69	1.51	0.43	59.45	4.2	120	1.39	29.3	4.09	5.19	0.14	0.56	0.50	0.019
B00264243	0.60	0.37	154.5	<0.005	<10	56	0.15	1.63	2.09	0.36	26.47	2.5	73	0.18	15.6	1.59	1.09	0.05	0.33	<0.01	<0.005
B00264244	2.81	0.43	0.5	0.024	<10	78	0.22	0.26	0.22	1.16	23.90	2.6	71	0.20	1558.5	1.23	1.24	0.09	0.32	<0.01	0.024
B00264245	25.18	2.15	42.0	0.014	<10	26	0.22	18.17	2.91	261.00	29.52	7.7	64	0.10	133.6	4.55	7.26	0.69	0.72	4.20	2.372
B00264246	0.96	0.45	1.4	<0.005	<10	252	0.20	1.45	1.82	2.38	49.89	4.0	70	0.31	46.8	2.23	1.58	0.08	0.17	0.01	0.012
B00264247	0.06	0.84	0.7	<0.005	<10	382	0.32	0.07	1.35	0.34	62.54	1.5	67	1.08	29.7	2.77	2.66	0.11	0.23	<0.01	0.010
B00264248	1.32	0.38	155.8	0.019	<10	48	0.19	2.03	0.02	0.20	22.37	1.8	111	0.27	66.4	4.18	1.40	0.11	0.51	0.07	0.007
B00264249	13.54	0.38	146.1	0.141	<10	30	0.25	9.21	0.69	13.88	21.83	33.8	110	4.00	3293.9	4.24	1.66	0.19	0.99	0.83	0.301
B00264250	0.04	0.61	163.0	<0.005	<10	202	0.26	0.02	8.57	0.15	22.68	52.3	33	0.62	9.0	0.77	1.24	0.05	0.03	<0.01	0.010
B00264251	0.19	0.52	0.7	<0.005	<10	217	0.26	0.07	0.80	0.22	49.66	9.0	65	0.55	81.2	2.03	1.80	0.09	0.25	0.05	<0.005
B00264252	0.30	0.48	5.1	0.012	<10	232	0.25	0.60	1.83	0.26	41.67	7.8	97	0.62	19.9	2.46	1.44	0.08	0.19	<0.01	0.007
B00264253	0.42	0.53	0.4	<0.005	<10	231	0.18	0.64	1.63	0.50	42.01	6.6	90	1.18	57.3	2.60	1.22	0.08	0.30	<0.01	0.008
B00264254	0.04	0.60	0.3	<0.005	<10	195	0.28	0.26	1.49	0.05	45.91	4.0	68	0.21	13.8	2.15	1.84	0.09	0.25	<0.01	0.009
B00264255	0.03	0.55	1.2	<0.005	<10	135	0.30	0.02	1.37	0.09	69.17	1.7	84	0.56	3.7	1.03	1.65	0.10	0.27	<0.01	0.013
B00264256	0.15	3.48	49.0	0.005	<10	156	0.16	<0.01	5.63	0.27	16.84	37.7	157	0.72	60.3	4.94	7.67	0.10	0.05	<0.01	0.019

BMC Sample ID	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)
	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.2**	**0.1**	**0.01**	**5**	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.2**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**	**0.2**	**0.2**	**0.01**	**0.01**
B00264201	0.29	12.5	0.8	0.27	225	2.43	0.01	0.14	4.0	318	13.3	13.4	<0.001	0.86	1.1	0.6	1	<0.2	15.1	<0.01	<0.01
B00264202	0.50	56.5	4.8	0.10	45	1.25	0.01	0.29	5.9	198	11.9	15.9	<0.001	0.64	0.42	0.7	0.3	0.7	13.8	<0.01	<0.01
B00264203	0.43	25.1	5.2	0.26	642	3.03	0.01	0.15	5.7	153	31.5	16.8	<0.001	0.06	0.33	0.8	1.5	0.4	83.9	<0.01	<0.01
B00264204	0.31	18.6	2.2	0.48	339	5.17	0.01	0.11	6.2	195	43.0	16.0	0.003	0.42	1.84	2.3	2.4	0.5	42.6	<0.01	<0.01
B00264205	0.42	31.8	3.0	0.60	900	2.43	0.01	0.25	9.6	481	42.5	18.4	<0.001	0.23	0.09	1.2	0.4	<0.2	90.1	<0.01	<0.01
B00264206	0.36	20.4	1.8	0.49	361	2.16	0.01	0.15	8.1	846	15.9	15.4	<0.001	1.82	0.26	1.4	1	<0.2	91.5	<0.01	<0.01
B00264207	0.31	13.0	1.8	0.54	537	2.96	0.02	0.12	4.7	77	73.4	15.2	<0.001	1.24	2.27	0.6	1.8	0.3	22	<0.01	<0.01
B00264209	0.32	21.8	1.0	0.38	364	1.98	0.02	0.19	7.3	863	31.8	12.1	<0.001	0.99	0.31	1.4	10	<0.2	68.4	<0.01	<0.01
B00264211	0.41	27.6	1.3	0.46	474	2.38	0.01	0.18	4.8	922	27.9	15.2	<0.001	0.29	0.12	1.4	0.9	<0.2	70.3	<0.01	<0.01
B00264212	0.33	24.0	1.1	0.46	436	1.75	0.02	0.17	5.0	775	4.0	12.8	<0.001	0.55	0.19	1.5	0.7	<0.2	73.7	<0.01	<0.01
B00264213	0.25	11.0	4.3	0.08	496	2.68	0.01	0.12	4.8	113	28.2	11.1	0.001	0.68	0.47	0.6	1.4	0.4	230.8	<0.01	0.05
B00264214	0.30	6.0	0.7	0.03	93	1.50	<0.01	0.07	2.7	52	20.5	4.1	0.002	1.03	2.39	0.1	0.2	<0.2	4.5	<0.01	<0.01
B00264215	0.27	12.1	2.6	0.07	544	2.26	0.03	0.15	3.7	137	17.4	12.1	0.001	0.78	1.05	0.4	1.1	0.4	86.5	<0.01	0.03
B00264216	0.34	20.8	1.5	0.55	555	1.83	0.02	0.15	4.0	763	26.2	12.4	<0.001	0.45	0.07	1.3	<0.2	<0.2	64.9	<0.01	0.03
B00264217	0.46	34.3	4.6	0.46	342	1.14	0.02	0.13	4.0	782	2.3	17.5	<0.001	0.12	<0.05	1.8	0.2	0.2	78.6	<0.01	0.05
B00264218	0.36	17.2	1.8	0.24	206	2.05	0.02	0.16	7.5	922	21.9	12.7	<0.001	2.28	0.66	1.1	3.1	<0.2	52.8	<0.01	0.1
B00264219	0.30	10.4	2.2	1.26	565	2.88	0.01	0.15	8.1	912	685.8	13.3	<0.001	4.50	1.87	1.4	3.1	<0.2	96.3	<0.01	0.13
B00264220	1.42	4.3	39.4	3.31	831	0.53	0.02	0.11	161.4	528	2.7	60.9	<0.001	0.02	0.33	8.0	<0.2	0.2	69.6	<0.01	0.04
B00264221	0.26	13.3	4.8	0.11	121	2.84	0.02	0.07	4.2	158	35.8	15.4	<0.001	0.88	0.44	0.7	0.7	0.4	4.8	<0.01	0.06
B00264222	0.28	14.1	3.0	0.57	594	4.37	0.02	0.07	5.6	111	73.4	13.9	<0.001	1.33	0.93	0.6	4.9	<0.2	23.5	<0.01	<0.01
B00264223	0.43	20.4	4.0	0.07	60	4.28	0.03	0.12	8.3	60	2195.8	21.2	0.003	0.82	5.65	0.9	251.6	0.7	3.2	<0.01	<0.01
B00264224	0.11	15.1	0.8	0.04	653	2.27	0.03	0.41	17.0	113	41.8	4.5	<0.001	0.47	0.45	2.6	4.4	<0.2	229.5	<0.01	0.01
B00264225	0.32	18.5	1.8	0.65	526	2.01	0.02	0.14	12.0	875	9.1	13.4	<0.001	0.88	0.23	1.6	0.7	<0.2	118.6	<0.01	<0.01
B00264226	0.28	13.2	1.0	0.26	217	2.45	0.01	0.16	5.3	248	13.7	12.5	<0.001	0.45	0.3	0.6	1.2	<0.2	41.4	<0.01	<0.01
B00264227	0.28	14.0	2.3	0.03	39	3.39	0.01	0.35	5.3	104	23.2	13.2	<0.001	1.47	2.04	0.5	0.4	0.9	2.7	<0.01	<0.01
B00264228	0.46	24.7	3.3	0.39	417	2.34	0.02	0.32	6.9	802	17.8	18.9	<0.001	0.81	0.06	1.7	1.5	<0.2	59.4	<0.01	<0.01
B00264229	0.36	34.0	1.5	0.29	177	1.82	0.01	0.13	2.9	933	2.8	16.1	<0.001	0.32	0.16	1.2	0.5	<0.2	48.8	<0.01	<0.01
B00264230	0.42	19.0	1.7	0.89	739	1.97	0.01	0.26	7.3	765	8.0	15.9	<0.001	0.82	0.07	1.6	2.9	0.2	138.9	<0.01	0.03
B00264231	0.39	21.6	2.4	0.57	438	2.55	0.02	0.18	6.9	874	12.2	17.9	<0.001	1.88	0.19	1.7	0.5	<0.2	78.2	<0.01	<0.01
B00264232	0.33	20.0	3.1	0.65	610	2.44	0.02	0.10	7.4	794	8.9	15.1	<0.001	1.43	0.14	2.0	2.8	<0.2	99.4	<0.01	<0.01
B0264233	0.33	23.1	1.8	0.66	387	2.61	0.01	0.10	6.0	863	13.8	16.1	<0.001	1.11	0.23	1.5	1.2	<0.2	92.6	<0.01	<0.01
B00264234	0.32	18.3	1.9	0.75	454	2.20	0.01	0.18	12.5	814	37.7	14.6	<0.001	1.72	0.21	1.4	2	<0.2	109.5	<0.01	0.02
B00264235	0.39	12.8	3.7	0.32	366	4.10	0.02	0.10	5.7	115	446.8	22.5	<0.001	1.62	20.02	0.8	18.1	0.7	8	<0.01	<0.01
B00264236	0.27	12.0	2.0	0.04	27	2.84	0.02	0.10	5.2	72	912.4	14.2	<0.001	1.73	8.71	0.5	27	0.4	2.5	<0.01	<0.01
B00264237	1.67	18.2	21.1	1.45	695	0.98	0.03	0.65	13.3	1490	7.2	81.1	<0.001	0.40	0.08	16.0	0.4	1	134	<0.01	0.03
B00264238	0.38	26.3	3.5	0.55	591	2.85	0.02	0.22	15.2	722	13.3	16.0	<0.001	0.57	0.1	1.2	0.5	0.2	68.2	<0.01	<0.01
B00264239	0.48	43.0	7.2	0.65	346	2.35	0.02	0.32	28.7	845	268.8	19.9	0.001	1.22	0.11	1.7	2	0.3	61.7	<0.01	0.02
B00264240	2.60	5.8	26.7	3.53	1094	0.41	0.04	0.12	82.9	510	9.6	185.6	0.001	0.02	0.22	11.1	0.2	0.3	184.6	<0.01	0.03
B00264241	0.30	14.2	1.5	0.62	562	2.83	0.01	0.14	5.4	150	150.5	15.8	0.001	1.85	5.01	0.6	4	0.5	33.4	<0.01	<0.01
B00264242	0.96	28.6	8.5	0.62	817	8.53	0.02	0.81	7.6	723	46.7	43.7	<0.001	1.40	2.22	2.7	2.1	1.1	67.6	<0.01	0.06
B00264243	0.27	15.7	2.0	0.84	891	3.32	0.01	0.09	3.7	49	37.6	13.1	<0.001	0.22	0.11	0.6	5.4	<0.2	45.1	<0.01	0.04
B00264244	0.30	11.6	1.9	0.12	114	3.76	0.02	0.09	3.1	143	21.3	12.2	<0.001	0.66	0.28	0.5	4.9	1.3	5.5	<0.01	0.02
B00264245	0.12	17.1	18.6	3.41	1567	1.60	<0.01	0.06	8.2	15	8933.8	6.5	0.002	2.24	15.27	1.1	122.8	0.8	31.9	<0.01	0.08
B00264246	0.32	24.5	3.0	0.60	844	2.37	0.03	0.65	6.0	704	180.1	12.8	<0.001	0.55	0.17	1.3	3.4	0.3	70.2	<0.01	0.08
B00264247	0.64	30.6	5.5	0.56	729	4.26	0.02	0.74	4.1	704	5.5	24.4	<0.001	0.20	0.13	1.8	0.8	0.3	64.8	<0.01	0.03
B00264248	0.26	12.8	1.3	0.04	22	3.75	0.02	0.13	8.4	45	140.7	14.7	0.001	4.62	3.27	0.6	13.5	0.4	3.8	<0.01	0.08
B00264249	0.20	12.5	2.2	0.32	232	4.11	0.01	0.08	5.7	74	198.6	12.9	0.001	3.38	4.74	0.9	29.2	1.3	44.8	<0.01	0.04
B00264250	0.49	12.8	3.9	0.21	1220	0.56	0.02	0.10	58.6	715	6.8	19.4	0.001	0.05	11.72	3.6	0.3	<0.2	180.3	<0.01	0.05
B00264251	0.42	24.4	6.4	0.18	431	2.80	0.02	0.36	7.2	692	2.0	19.4	<0.001	0.96	0.25	1.5	1.4	<0.2	39.8	<0.01	0.04
B00264252	0.39	20.1	3.0	0.57	1002	2.86	0.02	0.14	9.0	844	20.8	14.8	<0.001	0.97	0.17	1.2	3.4	<0.2	73.8	<0.01	0.06
B00264253	0.37	20.8	2.0	0.48	649	1.79	0.02	0.16	5.9	736	52.7	14.1	<0.001	0.46	0.08	1.2	0.7	0.4	58.1	<0.01	0.05
B00264254	0.48	22.3	1.9	0.41	393	2.39	0.02	0.60	4.7	821	3.2	14.0	<0.001	0.44	0.09	1.4	0.6	0.2	65	<0.01	0.06
B00264255	0.31	33.5	2.1	0.32	219	2.41	0.01	0.08	3.4	948	2.9	11.5	<0.001	0.15	0.25	1.2	0.4	<0.2	42.4	<0.01	0.04
B00264256	0.22	7.4	24.7	3.67	855	0.83	0.01	<0.05	73.3	502	9.7	12.4	0.002	0.01	0.2	7.3	0.6	<0.2	134.7	<0.01	0.09

BMC Sample ID	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
B00264201	15.2	<0.005	0.19	4.31	2	0.10	6.31	50	24.8
B00264202	28.8	0.006	0.95	1.65	2	0.18	10.84	15	27
B00264203	22.3	0.006	1.96	3.20	3	0.12	12.47	39	23.7
B00264204	20.8	<0.005	0.5	4.45	8	0.13	8.38	106	25.1
B00264205	15.8	0.007	0.11	1.69	2	0.08	9.28	53	11.1
B00264206	8.5	<0.005	0.24	0.62	3	0.07	9.13	35	12.5
B00264207	13.6	<0.005	0.90	3.69	2	0.11	4.53	189	25.7
B00264209	10.4	0.006	0.14	0.54	3	0.06	8.90	37	11.8
B00264211	12.2	0.008	0.12	0.44	3	0.08	9.35	56	10.8
B00264212	11.3	0.006	0.08	0.66	3	0.06	8.87	12	12.4
B00264213	13.7	<0.005	0.21	2.27	2	0.14	18.01	52	16.0
B00264214	7.9	<0.005	0.09	1.53	4	0.06	2.66	71	10.4
B00264215	15.5	<0.005	0.18	2.08	2	0.11	10.91	55	24.1
B00264216	9.8	0.006	0.09	0.82	3	0.07	7.93	49	14.5
B00264217	16.2	0.005	0.15	1.22	4	0.11	10.09	31	13.1
B00264218	8.9	0.005	0.19	0.71	4	0.10	8.29	177	18.3
B00264219	4.7	<0.005	0.39	1.06	4	0.11	9.37	112	24.9
B00264220	0.8	0.279	0.85	0.09	78	0.07	9.78	94	3.6
B00264221	11.9	<0.005	0.73	4.25	2	0.14	4.16	90	44.7
B00264222	12.8	<0.005	0.81	4.40	2	0.13	5.52	129	49.2
B00264223	15.9	<0.005	2.57	4.32	3	0.22	4.45	4288	51.1
B00264224	10.8	0.013	0.18	0.99	3	<0.05	16.70	32	13.4
B00264225	8.6	<0.005	0.17	1.32	2	0.08	9.77	29	14.6
B00264226	10.4	<0.005	0.38	2.75	2	0.10	5.56	413	24.3
B00264227	19.1	<0.005	0.84	5.23	1	0.12	3.04	9	19.2
B00264228	11.6	0.011	0.17	0.93	4	0.10	9.98	19	18.3
B00264229	16.6	0.006	0.36	0.69	3	0.09	9.64	27	9.8
B00264230	7.9	0.006	0.3	0.51	4	0.09	9.11	46	9.8
B00264231	9.3	0.006	0.17	0.73	4	0.1	9.69	50	15.1
B00264232	9.1	<0.005	0.24	1.21	4	0.06	10.05	93	10.8
B0264233	10.9	<0.005	0.41	0.72	3	0.08	9.84	51	14.1
B00264234	8.2	<0.005	0.52	0.75	4	0.07	9.49	64	13
B00264235	9.9	<0.005	3.46	3.62	3	0.19	4.54	518	51.7
B00264236	10.0	<0.005	1.87	3.23	2	0.15	3.13	371	32.2
B00264237	8.8	0.277	0.69	0.19	148	0.68	18.26	79	3.6
B00264238	12.3	0.005	0.17	0.96	3	0.06	8.85	56	17.5
B00264239	17.6	0.011	0.65	1.05	5	0.12	12.88	92	25.3
B00264240	1.0	0.287	17.7	<0.05	90	0.06	17.97	130	1.6
B00264241	15.5	<0.005	2.33	4.24	2	0.13	5.01	96	24.2
B00264242	30.5	0.021	0.74	8.39	6	0.41	12.40	91	35.7
B00264243	11.3	<0.005	0.20	2.66	2	0.18	4.72	36	17.7
B00264244	17.3	<0.005	0.18	5.67	1	0.22	2.69	110	15.0
B00264245	15.0	<0.005	0.16	3.56	9	0.06	6.64	40976	35.5
B00264246	14.3	0.019	0.07	1.15	3	0.11	7.46	250	9.8
B00264247	13.9	0.02	0.26	0.81	4	0.17	8.08	65	11.5
B00264248	13.7	<0.005	0.76	5.15	4	0.23	2.29	25	28.8
B00264249	13.2	<0.005	1.19	5.30	3	1.54	3.39	1415	72.7
B00264250	1.8	0.038	0.55	0.11	17	0.12	18.64	12	3.5
B00264251	11.1	0.008	0.55	1.05	3	0.10	8.43	29	16.1
B00264252	11.1	0.006	0.20	0.90	4	0.16	9.10	43	10.0
B00264253	11.0	<0.005	0.09	0.99	3	0.10	7.82	53	17.1
B00264254	11.2	0.02	0.10	0.92	3	0.12	8.17	13	14.3
B00264255	14.3	<0.005	0.37	1.08	3	0.16	9.30	40	16.8
B00264256	1.4	0.018	1.57	0.07	58	0.09	20.18	77	1.7

BMC Sample ID	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.01**	**0.1**	**0.005**	**10**	**10**	**0.05**	**0.01**	**0.01**	**0.01**	**0.02**	**0.1**	**1**	**0.05**	**0.2**	**0.01**	**0.05**	**0.05**	**0.02**	**0.01**	**0.005**
B00264257	1.27	0.37	8.9	<0.005	<10	90	0.13	0.59	4.08	0.18	15.43	3.2	85	0.15	7.4	1.56	0.90	<0.05	0.24	0.03	<0.005
B00264258	0.52	0.38	88.3	<0.005	<10	108	0.17	0.50	2.45	0.10	26.51	2.5	75	0.33	7.3	0.53	0.91	0.05	0.25	0.04	<0.005
B00264259	0.06	3.29	28.3	<0.005	<10	127	0.15	0.06	6.32	0.18	16.46	33.3	154	0.30	41.9	5.04	6.84	0.08	<0.02	0.02	0.020
B00264260	0.25	0.41	1.5	<0.005	<10	208	0.18	0.60	2.04	0.36	44.97	3.9	59	0.20	42.5	2.00	1.16	0.07	0.14	<0.01	<0.005
B00264261	0.52	0.37	89.4	0.018	<10	73	0.17	8.56	0.84	33.20	12.60	4.7	95	0.15	176.6	3.41	1.36	0.09	0.29	0.68	0.258
B00264262	0.13	4.33	61.7	<0.005	<10	400	0.39	0.09	3.96	0.11	4.56	51.4	253	6.06	46.4	5.40	13.70	0.18	0.04	<0.01	0.018
B00264263	0.27	0.50	<0.1	<0.005	<10	207	0.33	0.65	1.20	0.17	162.51	5.8	67	0.68	40.6	2.05	2.17	0.14	0.10	<0.01	0.006
B00264264	0.45	0.66	0.3	<0.005	<10	130	0.38	0.86	2.74	0.49	78.06	22.0	68	2.02	115.1	4.36	2.06	0.10	0.12	<0.01	0.017
B00264265	0.15	0.55	2.5	<0.005	<10	232	0.21	0.29	2.29	0.41	135.59	6.7	92	0.45	77.1	2.53	1.70	0.13	0.21	<0.01	0.008
B00264266	0.17	0.49	23.9	<0.005	<10	24	0.28	0.87	1.40	0.28	42.11	12.5	57	0.20	13.2	4.37	1.71	0.08	0.24	<0.01	0.009
B00264267	0.09	0.45	6.6	<0.005	<10	133	0.26	0.59	2.05	0.57	39.58	7.9	77	0.14	34.8	2.80	1.56	0.06	0.14	<0.01	0.012
B00264268	0.63	0.50	57.9	0.005	<10	117	0.24	1.61	0.12	0.55	26.80	6.7	129	0.25	34.2	1.51	1.56	0.07	0.50	0.02	0.007
B00264269	0.64	0.77	32.4	<0.005	<10	181	0.17	1.24	2.54	2.42	39.00	1.3	85	0.25	14.7	1.77	2.01	0.06	0.54	0.02	0.021
B00264270	0.03	0.76	1.5	<0.005	<10	445	0.34	0.08	1.97	0.36	67.21	4.6	89	1.13	44.1	2.18	2.48	0.08	0.24	<0.01	0.006
B00264271	0.13	0.51	1.1	<0.005	<10	175	0.24	0.84	2.39	0.33	37.20	8.0	60	0.36	73.1	2.64	1.53	0.06	0.22	<0.01	0.005
B00264272	0.40	0.49	4.0	<0.005	<10	178	0.26	0.35	1.57	1.13	37.25	3.3	76	0.39	6.8	0.98	1.50	<0.05	0.81	0.02	0.018
B00264273	0.14	0.60	0.8	<0.005	<10	173	0.26	0.25	1.36	0.47	36.72	1.5	84	0.26	7.1	0.98	1.67	<0.05	0.73	<0.01	0.012
B00264274	0.89	0.66	34.7	0.012	<10	196	0.67	1.20	0.12	5.60	44.21	3.7	73	<0.05	35.2	1.19	1.68	0.16	0.60	0.15	0.053
B00264275	1.84	1.36	14.8	0.007	<10	237	0.38	0.57	0.16	7.51	41.17	2.3	85	1.50	157.8	2.18	3.70	0.11	0.95	0.07	0.038
B00264276	8.46	1.25	19.4	0.024	<10	198	0.37	1.67	0.32	92.80	48.15	8.2	86	1.40	160.6	2.06	4.06	0.23	2.01	2.18	0.695
B00264277	0.85	3.30	16.6	0.020	<10	1011	0.43	0.02	3.48	0.08	7.67	46.7	215	16.71	110.2	6.46	9.07	0.19	0.07	<0.01	0.020
B00264278	0.33	1.31	59.4	0.016	<10	415	0.21	<0.01	9.84	0.12	12.76	37.9	84	4.83	49.5	2.16	3.45	0.05	0.22	<0.01	0.016
B00264279	0.06	0.94	0.8	<0.005	<10	359	0.42	0.05	2.61	0.25	154.69	6.0	66	3.92	66.3	2.68	4.56	0.13	0.13	<0.01	0.010
B00264280	0.18	0.50	7.6	<0.005	<10	358	0.22	0.45	1.24	0.10	72.12	2.3	103	0.51	5.7	0.95	1.45	0.08	0.16	<0.01	<0.005
B00264281	0.02	0.77	6.3	<0.005	<10	293	0.34	0.06	2.23	0.26	64.77	2.3	76	0.26	26.8	2.33	2.43	0.07	0.34	<0.01	0.006
B00264282	0.11	0.48	0.3	<0.005	<10	246	0.24	0.28	2.35	0.83	64.33	2.8	68	0.26	29.8	2.04	1.69	0.06	0.20	<0.01	0.012
B00264283	0.08	0.68	2.0	<0.005	<10	188	0.31	0.24	0.95	0.07	86.64	7.6	82	0.42	29.1	1.93	2.12	0.08	0.13	<0.01	0.009
B00264284	0.13	0.70	0.7	<0.005	<10	146	0.23	0.16	1.82	0.24	59.08	6.0	97	0.40	11.5	2.29	1.71	0.07	0.13	<0.01	0.009
B00264285	0.11	0.61	15.7	0.006	<10	139	0.27	0.36	0.63	0.06	36.00	3.5	90	0.29	5.2	1.32	1.76	0.06	0.48	<0.01	0.006
B00264286	0.76	0.51	77.5	0.008	<10	95	0.19	0.61	0.71	0.97	30.78	3.3	52	0.33	25.8	1.87	1.51	0.06	0.91	0.11	0.022
B00264287	0.57	0.60	11.3	0.008	<10	168	0.22	0.37	0.01	0.06	53.97	1.5	90	0.19	11.1	0.39	1.62	0.07	0.78	0.06	0.006
B00264288	3.85	0.62	25.0	0.023	<10	91	0.27	1.98	0.01	1.33	38.58	3.0	86	0.21	184.8	1.84	1.53	0.11	0.92	0.13	0.016
B00264289	7.21	0.54	26.0	0.059	<10	65	0.25	3.83	1.04	48.43	24.53	4.1	74	0.20	99.4	3.63	1.50	0.13	0.65	2.74	0.119
B00264290	0.63	0.54	9.2	0.006	<10	158	0.19	0.78	1.27	2.92	32.71	1.9	79	0.16	58.0	1.47	1.51	<0.05	0.55	0.23	0.019
B00264291	2.70	0.42	230.8	0.033	<10	106	0.15	3.64	1.50	10.74	23.11	2.3	99	0.12	121.3	2.47	1.08	0.06	0.54	0.76	0.090
B00264292	0.39	0.54	7.8	0.007	<10	212	0.22	0.33	0.57	0.55	27.07	2.1	93	0.22	32.0	1.00	1.68	0.06	0.38	0.05	0.009
B00264293	0.60	0.51	8.5	0.009	<10	213	0.20	0.90	0.90	0.58	28.68	2.2	94	0.26	59.5	1.30	1.65	0.05	0.46	0.07	<0.005
B00264294	0.26	0.46	43.5	0.008	<10	114	0.15	0.23	0.37	1.34	19.77	1.3	66	0.17	27.0	1.20	1.13	<0.05	0.48	0.08	0.012
B00264295	0.24	0.70	5.1	<0.005	<10	184	0.26	0.36	0.94	<0.01	27.84	2.2	75	0.25	47.6	1.61	1.70	0.05	0.63	0.01	<0.005
B00264296	<0.01	0.54	<0.1	<0.005	<10	144	0.29	0.02	0.99	<0.01	45.70	0.8	84	0.17	1.8	0.79	1.67	0.05	0.39	<0.01	<0.005
B00264297	0.03	0.86	0.3	<0.005	<10	199	0.33	0.04	1.42	<0.01	79.06	3.8	69	1.66	9.4	1.87	2.59	0.09	0.29	<0.01	0.009
B00264298	6.50	0.41	9.5	<0.005	<10	99	0.17	8.19	0.52	21.44	19.28	2.7	148	0.72	120.4	2.31	1.29	0.13	0.31	0.32	0.141
B00264299	0.41	0.50	15.1	<0.005	<10	264	0.19	0.22	0.09	<0.01	26.43	1.7	96	0.28	14.2	1.13	1.45	0.07	0.31	<0.01	<0.005
B00264300	1.15	0.78	205.9	0.011	<10	275	0.12	1.97	2.22	1.08	52.38	4.2	85	0.71	127.8	1.67	2.59	0.06	0.63	0.06	0.025
B00264301	0.52	0.43	11.0	0.006	<10	176	0.22	0.72	0.41	0.26	52.27	3.1	65	0.40	18.0	1.19	1.42	0.08	0.24	0.06	0.008
B00264302	1.62	0.38	3.5	<0.005	<10	231	0.16	1.40	1.07	13.45	53.78	3.9	133	0.28	153.1	0.80	1.33	0.07	0.27	0.06	0.054
B00264303	<0.01	1.09	1.5	0.006	<10	222	0.40	0.06	1.70	0.07	75.02	3.2	94	2.65	19.3	3.58	3.74	0.10	0.19	<0.01	0.014
B00264304	0.13	0.46	1.3	<0.005	<10	279	0.23	0.10	1.29	0.06	75.86	1.1	101	0.16	109.2	1.01	1.54	0.08	0.23	<0.01	0.006
B00264305	0.49	0.48	0.6	0.008	<10	270	0.18	0.06	0.65	0.20	50.25	1.5	77	0.24	324.5	1.04	1.44	0.07	0.30	<0.01	0.013
B00264306	0.02	0.37	1.0	<0.005	<10	184	0.16	0.04	2.04	0.08	38.53	1.5	68	0.35	18.0	2.12	1.03	0.05	0.14	<0.01	<0.005
B00264307	0.02	0.48	1.0	<0.005	<10	211	0.21	0.07	1.42	0.22	52.17	3.0	103	0.33	8.7	1.68	1.66	0.06	0.27	<0.01	0.011
B00264308	<0.01	0.44	4.8	<0.005	<10	65	0.10	0.01	3.74	<0.01	17.19	1.4	51	0.15	0.6	2.47	0.61	<0.05	0.10	<0.01	0.005
B00264309	<0.01	3.98	33.2	<0.005	<10	44	0.18	<0.01	5.28	<0.01	14.17	48.7	252	1.06	8.1	5.64	14.21	0.14	<0.02	<0.01	0.041
B00264310	0.21	2.71	7.8	<0.005	<10	323	0.13	0.16	8.36	0.15	10.64	25.0	121	2.42	38.5	3.96	4.20	<0.05	<0.02	<0.01	0.012

BMC Sample ID	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)
	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.2**	**0.1**	**0.01**	**5**	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.2**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**	**0.2**	**0.2**	**0.01**	**0.01**
B00264257	0.29	9.1	1.3	0.08	847	3.13	0.01	0.20	5.6	113	37.0	8.9	0.001	1.57	3.2	0.6	0.3	0.2	194.1	<0.01	0.04
B00264258	0.30	13.2	1.7	0.05	249	3.08	0.01	0.15	3.2	137	21.7	9.3	<0.001	0.36	1.11	0.4	0.2	<0.2	87.3	<0.01	0.04
B00264259	0.22	9.3	21.4	3.20	798	0.56	0.01	0.06	67.6	563	7.7	9.0	0.001	<0.01	0.14	6.9	0.3	<0.2	124.4	<0.01	0.05
B00264260	0.30	22.1	1.0	0.66	516	2.46	0.02	0.10	5.8	691	21.3	9.6	<0.001	0.42	0.15	1.3	1.2	<0.2	102.5	<0.01	0.04
B00264261	0.25	6.0	1.4	0.37	400	1.93	0.01	0.15	4.8	276	160.6	12.9	<0.001	3.45	58.14	0.7	9.0	0.3	16.5	<0.01	0.11
B00264262	1.47	1.9	40.1	4.46	775	0.64	0.03	0.11	74.6	540	15.9	93.8	0.001	0.06	0.85	15.3	2.9	<0.2	54.3	<0.01	<0.01
B00264263	0.39	74.0	6.4	0.45	631	1.89	0.02	0.57	7.2	876	4.9	15.9	<0.001	0.58	0.05	1.6	3.6	<0.2	31.2	<0.01	0.05
B00264264	0.47	36.6	4.4	0.69	957	2.14	0.02	0.24	17.7	1097	27.3	16.5	0.002	1.11	0.39	4.3	<0.2	<0.2	86.2	<0.01	0.07
B00264265	0.38	61.7	2.8	0.64	974	1.99	0.02	<0.05	5.7	804	13.1	13.6	<0.001	0.65	0.34	1.3	2.6	<0.2	67.9	<0.01	0.03
B00264266	0.38	18.9	1.5	0.36	300	3.40	0.02	0.14	11.1	906	32.8	14.3	<0.001	3.86	0.56	1.5	1.4	<0.2	81.6	<0.01	0.04
B00264267	0.38	18.0	1.8	0.54	466	1.86	0.01	0.14	6.8	596	15.2	14.0	<0.001	1.39	0.39	1.7	0.7	<0.2	122.5	<0.01	0.04
B00264268	0.31	12.9	1.6	0.07	51	7.02	0.02	<0.05	13.7	162	57.9	14.1	0.005	1.37	2.85	0.6	2.5	0.4	4.4	<0.01	0.05
B00264269	0.28	18.7	3.5	1.46	1635	3.31	0.02	<0.05	2.8	82	191.4	12.6	<0.001	0.07	0.37	0.7	8.8	0.4	44.5	<0.01	<0.01
B00264270	0.55	30.9	5.0	0.56	508	2.39	0.03	0.22	7.0	740	2.6	21.4	<0.001	0.37	0.06	2.2	0.8	<0.2	104.5	<0.01	0.01
B00264271	0.32	17.1	2.3	0.85	513	2.25	0.02	<0.05	7.9	720	7.6	13.3	<0.001	1.06	0.81	1.6	1.5	<0.2	111.1	<0.01	0.03
B00264272	0.34	16.7	1.5	0.71	332	3.10	0.02	0.06	4.8	265	87.1	13.7	0.001	0.23	1.91	0.8	4.9	0.3	56.8	<0.01	<0.01
B00264273	0.40	17.2	1.6	0.60	339	1.80	0.02	<0.05	2.7	253	30.1	15.3	<0.001	0.27	0.18	0.8	1.8	0.4	42.2	<0.01	0.01
B00264274	0.41	1.3	6.0	0.07	49	3.35	0.02	0.06	8.7	323	364.5	19.4	<0.001	0.55	1.38	1.0	<0.2	1.8	4.8	<0.01	0.06
B00264275	0.69	19.3	9.8	0.76	1355	7.25	0.03	0.19	3.5	148	844.5	32.6	0.004	0.34	1.98	1.1	10.1	1.7	4.8	<0.01	<0.01
B00264276	0.62	23.1	13.3	0.66	862	9.56	0.03	0.11	5.0	223	4129.5	33.5	0.005	1.10	9.69	1.3	45.5	1.4	7.5	<0.01	0.04
B00264277	2.79	3.1	37.2	1.71	795	0.31	0.04	0.12	241.7	640	7.6	169.0	<0.001	0.18	1.12	7.6	0.4	<0.2	80.8	<0.01	0.01
B00264278	1.01	5.4	12.3	0.68	1132	0.26	0.02	0.07	142.6	631	6.1	51.1	<0.001	0.39	4.55	6.0	0.4	<0.2	160.9	<0.01	0.03
B00264279	0.67	71.1	9.9	0.65	833	2.26	0.05	1.00	5.9	774	5.5	29.2	<0.001	0.45	<0.05	4.6	0.6	<0.2	88.7	<0.01	0.03
B00264280	0.41	33.4	2.2	0.27	457	1.47	0.02	<0.05	10.3	685	23.7	14.6	<0.001	0.05	0.77	1.3	<0.2	<0.2	36.7	<0.01	0.02
B00264281	0.59	30.0	2.3	0.73	715	3.34	0.02	0.56	4.8	591	3.5	18.2	<0.001	0.23	<0.05	2.1	1.1	<0.2	78.2	<0.01	0.01
B00264282	0.41	29.6	2.1	0.71	649	3.46	0.02	0.35	4.9	733	14.1	14.6	<0.001	0.10	<0.05	2.0	0.6	<0.2	108.6	<0.01	<0.01
B00264283	0.44	39.5	2.3	0.29	190	2.88	0.04	0.12	6.4	926	9.3	14.5	<0.001	0.88	1.6	1.7	<0.2	<0.2	41.3	<0.01	<0.01
B00264284	0.31	26.8	3.4	0.70	292	3.09	0.02	<0.05	7.4	972	76.5	12.7	<0.001	0.76	0.38	1.5	2.0	<0.2	55.5	<0.01	<0.01
B00264285	0.39	17.0	2.3	0.26	227	2.64	0.02	0.08	3.3	304	16.1	16.0	<0.001	1.06	0.86	0.8	1.7	0.3	16.5	<0.01	0.01
B00264286	0.31	17.0	1.8	0.27	160	3.84	0.02	0.08	2.7	50	143.7	14.6	<0.001	1.38	5.57	0.7	6.9	0.4	12.8	<0.01	0.01
B00264287	0.38	25.0	1.4	0.03	11	2.84	0.02	0.10	2.8	75	116.6	14.1	<0.001	0.28	4.64	0.7	0.8	0.5	3.3	<0.01	0.02
B00264288	0.40	18.0	1.5	0.03	9	3.21	0.01	0.17	3.0	79	778.4	15.7	<0.001	1.87	23.26	0.7	15.4	0.6	2	<0.01	0.04
B00264289	0.39	13.1	1.9	0.39	470	2.90	0.01	0.23	3.6	93	8812.7	17.0	<0.001	3.34	19.54	0.8	21.2	0.5	28.7	<0.01	0.05
B00264290	0.38	15.3	1.5	0.41	508	3.19	0.01	0.14	3.0	71	777.5	15.9	<0.001	0.83	2.66	0.7	4.2	0.4	33.6	<0.01	<0.01
B00264291	0.30	12.7	2.9	0.41	561	2.82	0.01	0.13	17.2	89	1571.5	11.8	<0.001	2.13	74.49	0.5	8.9	0.3	36	<0.01	0.05
B00264292	0.39	13.3	2.0	0.15	205	3.09	0.02	0.18	4.0	111	103.7	16.1	<0.001	0.75	2.02	0.6	1.9	0.7	17	<0.01	0.02
B00264293	0.37	15.0	3.6	0.23	315	3.52	0.01	0.23	3.6	116	90.0	16.0	<0.001	0.74	3.11	0.6	1.4	0.5	25.7	<0.01	0.03
B00264294	0.31	11.1	1.8	0.13	177	2.40	0.01	0.15	3.6	120	175.3	11.0	<0.001	0.94	1.47	0.5	<0.2	0.4	7.3	<0.01	0.01
B00264295	0.45	13.5	2.7	0.44	510	3.86	0.02	0.23	3.0	62	162.8	16.2	<0.001	1.27	16.7	0.6	0.4	0.9	18.7	<0.01	<0.01
B00264296	0.44	22.6	2.1	0.33	356	6.19	0.02	0.11	2.7	104	3.0	16.1	<0.001	0.02	0.1	0.6	<0.2	0.3	18.7	<0.01	<0.01
B00264297	0.67	37.7	5.1	0.41	491	1.71	0.02	0.41	5.0	823	2.4	21.4	0.001	0.46	0.06	1.4	0.3	0.3	33.6	<0.01	<0.01
B00264298	0.23	11.4	1.4	0.20	213	145.33	0.02	0.08	43.9	621	2598.7	10.8	0.061	1.59	43.13	0.5	30.6	0.7	13.3	<0.01	0.29
B00264299	0.29	13.4	1.9	0.06	60	3.69	0.03	0.06	3.1	21	32.3	14.0	<0.001	0.89	5.52	0.5	5.0	0.6	3.9	<0.01	0.05
B00264300	0.24	25.5	4.7	0.84	624	5.40	0.04	0.08	3.3	72	44.6	11.4	0.002	0.17	11.61	0.9	4.5	0.4	43.7	<0.01	0.02
B00264301	0.32	25.5	3.4	0.16	120	2.89	0.02	0.52	2.8	172	131.2	12.5	<0.001	0.94	1.1	0.5	2.2	0.6	15.5	<0.01	<0.01
B00264302	0.28	26.2	1.7	0.04	193	3.34	0.02	0.22	4.4	99	414.0	10.1	<0.001	0.56	1.92	0.4	8.3	0.5	16.6	<0.01	0.02
B00264303	0.84	36.1	11.2	0.79	896	1.29	0.03	0.59	5.5	659	2.5	40.4	<0.001	0.08	0.1	2.7	<0.2	0.9	72.3	<0.01	0.03
B00264304	0.33	36.7	0.9	0.38	427	2.19	0.03	0.10	3.9	522	8.9	10.9	<0.001	0.03	0.13	1.0	0.5	<0.2	56.7	<0.01	<0.01
B00264305	0.31	25.3	2.2	0.23	361	2.03	0.03	0.32	4.1	496	6.1	11.6	<0.001	0.07	0.05	1.0	0.3	0.2	30	<0.01	0.01
B00264306	0.26	18.9	1.0	0.64	843	1.29	0.03	0.23	4.8	645	8.4	9.7	<0.001	0.12	<0.05	1.4	0.3	<0.2	86.9	<0.01	0.02
B00264307	0.45	24.7	2.5	0.29	479	2.70	0.03	0.19	4.9	592	3.3	15.6	<0.001	0.40	<0.05	1.6	0.5	0.3	76.7	<0.01	0.03
B00264308	0.33	9.2	0.8	1.50	752	1.07	0.02	<0.05	2.4	804	1.6	5.7	<0.001	0.33	0.11	0.8	<0.2	<0.2	147.3	<0.01	0.01
B00264309	0.09	6.0	33.4	3.99	911	0.38	0.02	0.06	65.9	417	7.9	7.3	<0.001	0.04	0.06	25.8	1.5	<0.2	121.2	<0.01	0.03
B00264310	0.97	4.7	18.0	1.98	944	0.90	0.03	0.11	55.8	503	62.2	39.5	0.001	0.08	0.27	6.0	<0.2	<0.2	186.9	<0.01	0.03

BMC Sample ID	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
B00264257	17.8	<0.005	1.44	3.12	2	0.23	15.43	12	12.6
B00264258	17.5	<0.005	1.14	2.40	2	0.26	10.55	5	14.0
B00264259	1.5	0.061	0.37	<0.05	58	0.11	12.70	66	<0.5
B00264260	10.6	<0.005	0.09	0.55	3	0.10	6.91	37	7.6
B00264261	5.0	<0.005	0.53	1.84	2	0.76	3.82	5150	16.6
B00264262	0.6	0.336	5.10	0.13	144	0.07	9.66	71	1.8
B00264263	25.0	<0.005	0.11	2.03	3	<0.05	15.10	42	6.2
B00264264	13.8	0.011	0.29	2.10	23	<0.05	17.24	109	10.6
B00264265	21.6	<0.005	0.16	0.83	3	0.12	8.05	66	12.0
B00264266	7.9	0.006	0.10	0.80	3	0.07	9.56	43	13.7
B00264267	8.0	0.005	0.10	0.59	3	0.10	8.11	82	8.8
B00264268	11.0	<0.005	0.70	4.76	21	0.15	2.74	73	22.6
B00264269	13.6	<0.005	1.21	3.60	2	0.06	6.03	355	24.8
B00264270	12.2	0.017	0.22	0.76	6	0.15	10.15	31	14.3
B00264271	7.0	<0.005	0.31	0.80	3	0.07	7.75	46	13.3
B00264272	14.9	<0.005	0.47	4.63	2	0.10	6.70	201	39.9
B00264273	11.7	<0.005	0.60	2.93	2	0.09	6.09	86	35.3
B00264274	12.5	<0.005	1.37	3.59	2	0.14	4.76	941	31.0
B00264275	12.7	0.015	4.26	3.82	3	0.23	4.49	1071	43.3
B00264276	19.3	0.009	5.62	7.24	3	0.22	7.71	16630	96.8
B00264277	0.5	0.519	4.30	0.07	93	0.11	8.09	130	8.7
B00264278	0.7	0.219	1.24	0.11	40	0.12	11.26	55	11.6
B00264279	22.4	0.046	0.19	2.19	8	0.11	21.29	46	7.3
B00264280	13.8	0.007	0.13	0.98	4	0.08	7.84	33	7.8
B00264281	11.5	0.025	0.10	0.91	4	0.11	8.71	37	21.8
B00264282	11.0	0.011	0.08	0.79	3	0.14	10.11	75	11.4
B00264283	17.9	0.006	0.24	1.92	3	0.12	10.33	40	10.7
B00264284	9.9	<0.005	0.20	1.71	3	<0.05	9.83	75	11.2
B00264285	10.9	<0.005	0.80	2.28	2	0.10	5.47	28	24.4
B00264286	15.2	<0.005	2.95	4.86	2	0.11	5.52	173	45.1
B00264287	16.0	<0.005	0.31	2.64	1	0.16	3.68	25	37.0
B00264288	17.3	0.005	0.38	3.33	1	0.15	2.91	164	40.5
B00264289	15.6	<0.005	0.91	6.05	2	0.13	4.88	5955	33.3
B00264290	17.9	<0.005	0.61	3.25	2	0.12	5.06	438	25.1
B00264291	17.6	<0.005	0.49	5.81	2	0.14	5.27	1604	24.2
B00264292	16.4	<0.005	0.61	1.85	1	0.27	4.14	118	18.7
B00264293	17.6	<0.005	0.69	3.77	2	0.20	5.31	120	23.5
B00264294	13.4	<0.005	0.81	3.66	1	0.15	3.26	290	22.5
B00264295	18.0	0.006	2.01	5.73	2	0.24	4.71	39	26.1
B00264296	19.9	<0.005	0.08	1.92	2	0.11	5.25	10	21.6
B00264297	16.5	0.02	0.18	1.34	4	0.17	15.21	38	14.6
B00264298	8.3	<0.005	2.05	3.86	28	1.57	5.55	2719	15.5
B00264299	17.2	<0.005	3.33	4.77	1	0.23	2.06	20	13.5
B00264300	20.9	<0.005	2.93	4.29	3	0.20	8.62	191	30.6
B00264301	25.0	<0.005	0.83	4.43	2	0.56	11.36	74	13.6
B00264302	19.1	<0.005	0.63	3.51	2	0.21	9.42	1631	15.1
B00264303	16.0	0.075	0.29	1.02	10	0.14	9.28	63	10.8
B00264304	18.6	<0.005	0.10	0.99	3	0.15	7.51	30	11.2
B00264305	10.6	0.01	0.06	0.79	3	0.22	5.64	49	16.3
B00264306	9.0	0.006	0.05	0.44	3	0.18	6.98	46	7.3
B00264307	14.0	0.006	0.08	1.55	3	0.09	9.36	36	13.5
B00264308	3.8	<0.005	0.05	0.42	3	<0.05	4.62	42	5.5
B00264309	1.0	0.032	0.22	<0.05	148	0.06	16.74	101	0.6
B00264310	1.1	0.199	0.83	0.10	57	0.09	10.18	150	<0.5

BMC Sample ID	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.01**	**0.1**	**0.005**	**10**	**10**	**0.05**	**0.01**	**0.01**	**0.01**	**0.02**	**0.1**	**1**	**0.05**	**0.2**	**0.01**	**0.05**	**0.05**	**0.02**	**0.01**	**0.005**
B00264311	0.01	0.49	2.0	<0.005	<10	77	0.23	0.13	1.66	<0.01	30.53	4.9	53	0.20	4.8	2.39	1.53	<0.05	0.15	<0.01	0.008
B00264312	0.16	0.46	18.5	<0.005	<10	132	0.18	0.30	2.16	0.71	16.26	3.1	50	0.17	24.4	1.82	1.30	<0.05	0.39	0.05	0.016
B00264313	0.96	0.47	629.4	0.021	<10	123	0.17	0.36	0.17	1.07	24.03	1.5	70	0.18	28.4	0.67	1.43	0.06	0.53	0.11	0.029
B00264314	0.67	0.42	12.9	0.011	<10	355	0.20	0.83	2.86	0.02	24.72	2.8	61	0.15	7.9	0.44	1.07	<0.05	0.23	0.02	<0.005
B00264315	0.01	3.25	57.8	<0.005	<10	145	0.17	0.02	7.55	0.08	13.80	43.2	145	0.60	25.4	5.51	7.28	0.06	<0.02	<0.01	0.016
B00264316	<0.01	0.48	1.4	<0.005	<10	159	0.21	0.03	1.48	<0.01	116.40	1.6	62	0.41	2.6	1.40	1.72	0.12	0.22	<0.01	0.007
B00264317	<0.01	0.74	0.5	<0.005	<10	438	0.29	0.03	4.61	<0.01	53.32	16.0	55	2.41	15.8	4.96	2.55	0.09	0.07	<0.01	0.015
B00264318	0.03	0.54	1.1	<0.005	<10	157	0.27	0.10	2.73	<0.01	130.84	11.0	81	0.27	12.1	2.36	1.87	0.13	0.09	<0.01	0.008
B00264319	0.11	0.48	12.0	<0.005	<10	62	0.22	0.16	2.52	<0.01	26.68	7.2	73	0.24	14.8	3.86	1.42	0.06	0.19	<0.01	0.009
B00264320	0.13	0.60	11.8	<0.005	<10	90	0.25	0.25	3.00	0.06	24.41	5.1	93	1.92	8.5	3.69	1.15	0.05	0.34	<0.01	0.010
B00264321	<0.01	0.46	0.2	<0.005	<10	180	0.21	0.01	0.86	0.15	54.26	0.5	79	0.40	3.1	0.33	1.44	0.07	0.16	<0.01	<0.005
B00264322	0.24	0.43	1.2	<0.005	<10	205	0.25	<0.01	1.30	0.30	67.53	0.7	89	0.23	167.7	1.21	1.38	0.07	0.17	<0.01	0.006
B00264323	0.02	0.43	<0.1	<0.005	<10	172	0.25	0.08	1.58	<0.01	71.06	0.6	72	0.39	3.8	1.31	1.40	0.07	0.21	<0.01	<0.005
B00264324	<0.01	0.79	0.1	<0.005	<10	81	0.29	0.06	3.09	0.19	112.77	1.8	49	1.07	25.7	2.12	2.72	0.11	0.15	<0.01	0.008
B00264325	0.02	2.07	48.1	<0.005	<10	135	0.14	<0.01	11.26	0.36	7.41	18.0	83	1.37	36.6	3.91	4.88	0.05	0.02	0.03	0.014
B00264326	0.04	3.11	49.8	<0.005	<10	100	0.22	<0.01	0.65	0.02	5.46	37.3	224	0.21	31.2	4.20	6.07	0.18	0.04	<0.01	0.005
B00264327	0.10	0.52	0.8	<0.005	<10	83	0.22	0.21	2.96	0.29	25.31	3.8	55	0.64	12.5	2.95	1.58	0.05	0.19	<0.01	0.013
B00264328	0.03	0.57	1.6	<0.005	<10	107	0.25	0.06	0.97	0.22	35.25	4.0	73	0.25	14.8	2.15	1.75	0.06	0.17	<0.01	0.006
B00264329	0.42	0.58	12.3	0.010	<10	98	0.23	0.42	1.46	0.25	30.36	6.4	46	0.23	21.4	3.42	1.75	0.06	0.25	<0.01	0.008
B00264330	0.42	0.50	5.1	<0.005	<10	106	0.25	0.96	0.08	0.31	28.30	4.1	45	0.19	32.3	1.07	1.51	0.08	0.59	0.01	0.008
B00264331	0.30	0.43	6.1	<0.005	14	95	0.18	0.27	0.98	0.31	20.62	2.3	46	0.40	18.1	1.33	1.04	<0.05	0.44	<0.01	0.008
B00264332	0.49	0.80	525.2	0.012	16	63	0.15	0.14	1.85	1.61	19.60	1.8	71	2.00	231.4	4.43	1.75	0.08	0.52	0.09	0.013
B00264333	0.21	0.57	19.9	<0.005	19	82	0.31	0.24	1.51	0.28	27.81	8.8	64	0.87	8.5	3.58	2.77	0.07	0.14	<0.01	0.014
B00264334	0.09	0.77	0.9	<0.005	17	209	0.23	0.05	1.61	0.21	55.62	3.0	54	1.21	11.2	1.83	2.23	0.08	0.47	<0.01	0.012
B00264335	0.24	0.59	2.9	<0.005	17	244	0.29	0.34	1.37	2.88	68.40	1.2	67	0.83	52.6	1.31	2.09	0.07	0.23	<0.01	0.013
B00264336	0.48	0.71	9.8	0.007	16	159	0.19	0.88	1.08	0.05	80.40	2.3	61	0.35	4.4	1.54	1.83	0.09	0.47	0.12	<0.005
B00264337	0.19	0.48	13.8	0.007	11	93	0.26	0.27	1.23	0.06	25.80	1.9	68	0.45	4.5	1.25	1.78	<0.05	0.31	0.07	0.006
B00264338	0.48	0.39	4.7	<0.005	15	114	0.15	0.77	1.26	2.37	25.29	1.8	76	0.43	27.3	1.15	1.03	<0.05	0.41	0.05	0.035
B00264339	0.02	0.43	102.1	<0.005	16	196	0.14	0.04	7.12	0.62	7.60	30.9	34	2.21	0.8	4.91	0.93	0.06	<0.02	<0.01	0.013
B00264340	0.05	0.63	0.3	<0.005	15	291	0.20	0.02	1.92	0.11	60.15	3.1	34	2.93	30.9	1.93	2.24	0.07	0.37	<0.01	<0.005
B00264341	0.08	0.44	2.8	<0.005	14	239	0.20	1.00	1.66	0.48	42.58	3.8	59	0.25	36.0	2.06	1.11	0.06	0.29	<0.01	0.008
B00264342	0.02	0.34	<0.1	<0.005	17	109	0.14	0.07	1.58	0.21	30.38	2.2	60	0.14	5.3	1.36	0.93	<0.05	0.15	<0.01	0.006
B00264343	0.07	0.62	421.6	<0.005	15	138	0.28	0.14	2.06	0.33	35.57	8.9	56	0.30	5.1	2.35	1.86	0.06	0.22	<0.01	0.015
B00264344	0.02	0.38	3.0	<0.005	15	68	0.23	0.10	2.09	0.37	26.39	1.6	60	0.38	2.7	1.23	1.10	<0.05	0.47	<0.01	<0.005
B00264345	0.12	2.24	35.0	<0.005	14	280	0.09	0.09	4.24	0.16	64.65	16.9	112	1.15	19.7	3.41	3.95	0.09	0.21	0.10	0.011
B00264346	6.03	0.70	644.0	0.041	14	96	0.21	0.47	1.98	15.94	109.19	1.9	63	2.66	475.3	2.47	2.25	0.13	0.76	0.31	0.025
B00264347	0.08	0.55	3.3	<0.005	14	182	0.29	0.15	1.23	0.14	54.13	2.8	95	1.02	15.9	1.51	1.84	0.07	0.39	<0.01	0.011
B00264348	0.06	1.06	<0.1	<0.005	<10	153	0.33	0.04	2.00	0.13	79.71	5.0	77	3.29	17.4	2.55	2.93	0.14	0.13	<0.01	0.018
B00264349	0.05	0.85	3.4	<0.005	19	202	0.43	0.03	3.20	0.18	47.79	19.4	43	3.86	6.0	5.38	3.12	0.10	0.10	<0.01	0.024
B00264350	0.09	0.53	0.5	<0.005	15	147	0.29	0.02	1.73	0.13	55.19	5.6	58	0.92	8.0	2.53	2.05	0.08	0.22	<0.01	0.014
B00264351	0.01	0.39	0.4	<0.005	17	105	<0.05	0.02	1.08	0.01	7.07	0.5	64	<0.05	<0.2	1.39	0.17	<0.05	0.05	<0.01	<0.005
B00264352	1.16	0.43	26.7	0.008	<10	67	0.17	0.53	0.04	0.55	21.51	2.4	69	0.21	27.9	1.38	1.11	0.09	0.83	0.03	0.012
B00264353	0.80	0.47	14.6	<0.005	<10	72	0.18	0.57	0.21	0.71	19.76	1.4	84	0.24	8.4	0.91	1.20	0.08	0.44	0.03	0.032
B00264354	5.00	0.41	197.5	0.044	<10	38	0.17	5.23	0.50	9.08	21.12	3.3	90	0.43	361.0	4.43	1.35	0.15	0.65	0.37	0.109
B00264355	1.64	0.54	34.7	0.018	<10	158	0.21	3.77	0.12	9.45	22.21	1.6	94	0.37	59.1	1.91	1.54	0.11	0.48	0.15	0.084
B00264356	2.41	0.45	2444.9	0.031	<10	186	0.14	0.46	1.13	9.36	18.24	1.7	62	0.55	25.7	1.92	1.14	0.08	0.51	0.74	0.054
B00264357	0.13	2.95	11.7	<0.005	<10	558	0.27	<0.01	7.60	0.21	16.91	25.5	130	21.34	32.8	4.37	6.93	0.21	0.02	<0.01	0.030
B00264358	0.06	0.46	1.2	<0.005	<10	127	0.25	0.19	2.86	0.04	71.50	1.9	77	0.62	4.4	0.64	1.31	0.10	0.57	<0.01	<0.005
B00264359	0.16	0.61	0.2	<0.005	<10	103	0.20	0.27	1.19	0.29	57.38	3.6	76	0.38	5.0	1.62	1.58	0.10	0.14	<0.01	0.012
B00264360	0.18	0.46	6.6	<0.005	<10	87	0.15	0.29	1.70	1.59	21.00	7.0	47	0.25	45.0	4.05	1.05	0.08	0.24	0.04	0.031
B00264361	0.02	0.52	0.2	<0.005	<10	117	0.15	0.01	0.94	1.46	51.27	0.5	66	0.36	4.9	0.86	1.14	0.09	0.21	<0.01	0.010
B00264362	0.18	0.61	1.2	<0.005	<10	85	0.39	0.19	2.15	0.27	69.50	2.0	81	1.38	8.2	1.89	3.36	0.07	0.25	<0.01	0.018
B00264363	0.06	1.29	1.2	<0.005	<10	149	0.61	0.02	2.95	0.35	127.88	1.6	59	3.83	9.4	2.64	6.40	0.12	0.21	<0.01	0.020
B00264364	0.03	0.92	0.3	<0.005	<10	506	0.32	0.02	3.56	0.07	34.25	1.7	65	1.21	2.3	1.66	2.50	0.06	0.50	<0.01	0.013

BMC Sample ID	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)
	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.2**	**0.1**	**0.01**	**5**	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.2**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**	**0.2**	**0.2**	**0.01**	**0.01**
B00264311	0.36	14.8	1.4	0.54	464	3.26	0.02	0.08	6.2	747	5.8	15.2	<0.001	0.80	0.71	1.3	0.4	<0.2	42.1	<0.01	0.02
B00264312	0.32	8.8	1.3	0.79	562	5.09	0.01	0.13	14.7	809	13.8	13.1	0.023	0.99	4.19	1.1	0.7	0.3	53	<0.01	<0.01
B00264313	0.31	12.1	2.5	0.10	95	3.15	0.02	0.14	2.1	59	196.6	13.6	<0.001	0.53	17.22	0.5	4.5	0.9	3.8	<0.01	<0.01
B00264314	0.32	12.0	2.2	0.05	605	5.26	0.01	0.18	2.8	152	74.2	9.9	<0.001	0.30	1.02	0.4	0.9	0.3	74.8	<0.01	0.01
B00264315	0.30	6.3	20.8	2.60	1174	0.81	0.01	0.10	75.8	533	14.0	15.6	0.001	0.10	0.66	8.2	<0.2	<0.2	186.6	<0.01	0.05
B00264316	0.41	55.4	2.0	0.25	485	2.38	0.02	0.49	3.1	931	2.3	14.4	<0.001	0.02	0.08	0.9	<0.2	0.3	20.7	<0.01	<0.01
B00264317	0.56	24.8	4.9	1.09	1251	0.69	0.02	0.25	5.4	1456	4.9	22.5	<0.001	0.21	0.09	5.4	<0.2	<0.2	111.4	<0.01	0.02
B00264318	0.45	63.5	2.3	0.73	902	4.73	0.02	0.09	7.2	887	6.0	15.6	<0.001	0.24	0.11	1.5	0.3	0.2	52.9	<0.01	0.02
B00264319	0.32	12.9	1.3	0.98	911	2.33	0.02	0.07	7.2	664	10.9	13.5	<0.001	2.34	2.73	1.3	<0.2	0.3	48.9	<0.01	0.01
B00264320	0.27	13.6	2.4	1.20	1088	2.62	0.02	0.06	7.0	718	23.7	13.3	<0.001	1.71	1.18	1.5	<0.2	<0.2	61.9	<0.01	0.02
B00264321	0.43	25.1	2.3	0.06	101	2.88	0.01	0.14	3.3	727	3.0	13.9	0.002	0.02	<0.05	0.4	<0.2	0.3	27.8	<0.01	<0.01
B00264322	0.33	32.5	1.1	0.38	468	1.55	0.04	0.18	4.8	582	2.2	11.4	<0.001	0.04	<0.05	1.0	0.2	0.2	43.2	<0.01	<0.01
B00264323	0.32	34.2	1.3	0.45	564	0.85	0.03	0.11	3.1	643	7.8	11.9	<0.001	0.03	<0.05	1.1	<0.2	<0.2	47.8	<0.01	0.01
B00264324	0.39	54.2	8.5	0.83	950	2.13	0.01	0.10	4.2	775	2.9	15.2	0.001	0.29	<0.05	1.4	0.6	0.2	73	<0.01	<0.01
B00264325	0.22	3.5	19.6	2.02	2721	0.60	0.01	<0.05	53.0	307	18.2	13.7	<0.001	0.28	23.42	7.7	0.5	<0.2	236.8	<0.01	0.02
B00264326	0.09	2.3	23.2	3.25	497	0.48	0.03	0.19	67.4	628	1.1	4.6	<0.001	0.04	1.16	3.3	0.3	<0.2	16.9	<0.01	<0.01
B00264327	0.38	12.1	2.2	0.87	980	2.90	0.02	0.20	5.4	714	26.4	16.8	<0.001	0.66	0.9	1.5	<0.2	0.3	67	<0.01	<0.01
B00264328	0.42	16.7	1.6	0.34	407	2.31	0.02	0.09	5.2	647	2.9	15.4	<0.001	0.87	0.38	1.0	0.4	0.2	25.3	<0.01	<0.01
B00264329	0.40	14.8	1.3	0.51	441	3.24	0.02	0.10	8.6	1020	147.5	16.1	<0.001	2.05	1.05	1.1	0.8	0.2	34.8	<0.01	<0.01
B00264330	0.34	14.0	1.3	0.04	15	4.62	0.02	0.10	9.5	243	43.1	14.1	0.001	0.80	4.07	0.6	4.5	0.5	3.2	<0.01	<0.01
B00264331	0.29	11.7	1.1	0.45	312	5.84	0.01	0.12	3.6	91	26.7	11.7	0.003	0.82	1.28	0.4	1.2	0.2	21.1	<0.01	<0.01
B00264332	0.21	9.3	6.3	0.91	975	3.12	0.01	0.10	3.3	83	34.2	11.4	<0.001	2.37	17.32	0.6	4.8	0.3	42.5	<0.01	<0.01
B00264333	0.43	20.0	3.3	0.40	308	2.31	0.02	0.31	10.2	1094	42.6	18.6	<0.001	3.01	0.37	1.4	2.6	0.4	80	0.01	0.06
B00264334	0.54	27.1	3.8	0.42	468	2.22	0.03	0.53	4.3	722	6.0	16.7	0.001	0.70	<0.05	1.2	0.3	0.3	58	<0.01	<0.01
B00264335	0.49	33.2	4.3	0.43	496	3.61	0.04	0.62	2.9	697	59.6	18.4	<0.001	0.03	0.07	1.3	0.5	0.4	69.3	<0.01	0.05
B00264336	0.33	40.2	4.7	0.85	378	4.93	0.02	0.14	2.6	160	47.4	14.1	0.002	1.19	1.14	0.5	0.7	0.4	19.3	<0.01	<0.01
B00264337	0.21	15.8	3.4	0.70	184	4.38	0.05	<0.05	3.9	62	21.6	9.9	0.001	1.12	3.16	0.5	0.7	0.4	20	<0.01	0.03
B00264338	0.23	13.5	1.1	0.57	437	9.66	0.02	0.05	9.3	235	43.7	10.1	0.023	0.61	10.02	0.4	1.7	0.4	19.4	<0.01	<0.01
B00264339	0.37	3.0	3.0	2.69	1044	0.53	0.01	<0.05	45.0	356	8.6	16.2	<0.001	<0.01	0.08	5.8	<0.2	<0.2	290.9	<0.01	0.04
B00264340	0.46	29.6	4.3	0.53	439	1.02	0.03	1.03	4.7	681	3.1	20.6	<0.001	0.17	<0.05	1.9	0.5	<0.2	68.8	<0.01	<0.01
B00264341	0.32	20.6	1.1	0.48	372	1.52	0.02	0.28	4.6	409	7.7	10.2	<0.001	0.79	0.15	0.9	0.9	<0.2	118.1	<0.01	<0.01
B00264342	0.25	16.5	0.9	0.55	351	0.95	0.01	0.16	3.2	603	4.0	8.8	<0.001	0.23	<0.05	0.9	0.2	<0.2	91.5	<0.01	<0.01
B00264343	0.33	19.3	3.0	0.89	552	2.26	0.01	0.10	6.6	718	15.6	13.0	<0.001	0.85	1.06	1.4	0.6	<0.2	101.4	<0.01	0.02
B00264344	0.26	14.3	1.8	0.88	414	2.36	0.01	0.13	2.8	235	3.2	11.5	<0.001	0.21	0.08	0.7	0.5	<0.2	50.3	<0.01	<0.01
B00264345	0.39	31.2	12.6	2.75	726	9.20	0.02	0.10	35.4	312	21.5	19.1	0.010	0.10	0.72	3.4	1.2	<0.2	85.9	0.01	<0.01
B00264346	0.40	51.8	5.6	0.70	440	3.70	0.02	0.16	2.5	154	2738.4	19.6	0.001	2.15	17.23	0.8	8.0	1.6	43.6	<0.01	<0.01
B00264347	0.39	26.6	4.2	0.26	533	4.06	0.03	0.19	3.5	196	16.5	16.1	<0.001	0.07	0.11	0.9	0.5	0.3	37.7	<0.01	<0.01
B00264348	0.58	38.3	6.0	0.66	629	2.47	0.02	0.53	5.7	771	2.9	21.7	0.001	0.27	<0.05	1.5	<0.2	0.5	39.3	<0.01	<0.01
B00264349	0.65	25.9	6.9	0.85	1393	0.95	0.02	0.36	5.8	1511	3.4	29.8	<0.001	0.45	<0.05	7.2	0.5	0.2	64.2	<0.01	<0.01
B00264350	0.32	26.7	3.1	0.25	632	3.11	0.03	0.53	6.1	793	5.0	15.1	<0.001	0.51	0.22	1.5	<0.2	<0.2	38	<0.01	<0.01
B00264351	0.25	3.4	0.1	0.28	395	0.36	0.02	<0.05	0.7	833	2.8	1.5	<0.001	0.55	0.06	0.1	<0.2	<0.2	29.3	<0.01	<0.01
B00264352	0.29	10.4	1.4	0.04	30	3.31	0.01	0.40	2.5	98	156.3	12.1	0.002	1.46	9.52	0.4	3.1	0.7	1.9	<0.01	<0.01
B00264353	0.32	9.9	1.6	0.12	144	2.48	0.01	0.25	2.3	31	129.5	12.1	<0.001	0.84	2.05	0.4	2.2	0.7	4.5	<0.01	<0.01
B00264354	0.28	9.7	2.5	0.20	295	4.83	0.01	0.32	4.8	125	143.9	13.3	0.001	4.90	36.99	0.5	27.7	1.1	12.1	<0.01	0.02
B00264355	0.35	12.1	3.2	0.07	69	2.92	0.02	0.35	3.6	109	153.0	15.4	<0.001	2.14	4.73	0.5	12.4	0.9	4.2	<0.01	<0.01
B00264356	0.31	10.0	2.0	0.59	539	3.75	0.02	0.29	2.8	46	477.2	14.4	0.002	1.77	11.61	0.5	11.7	0.6	34.7	<0.01	<0.01
B00264357	2.97	7.4	57.8	3.36	1056	0.27	0.04	0.23	66.0	456	8.4	274.1	<0.001	0.17	0.3	11.3	2.4	0.3	350.7	<0.01	0.02
B00264358	0.41	35.4	6.1	0.14	282	9.29	0.01	0.29	3.0	138	2.0	17.4	0.001	0.20	0.13	0.5	<0.2	0.6	78.6	0.02	<0.01
B00264359	0.45	27.7	2.3	0.44	245	1.98	0.02	0.21	3.5	704	101.3	16.2	<0.001	0.69	0.08	1.0	0.8	0.5	48	<0.01	<0.01
B00264360	0.33	11.2	1.0	0.56	427	1.93	0.01	0.22	6.0	706	63.4	11.9	<0.001	2.18	0.46	0.8	3.2	0.3	51.2	<0.01	<0.01
B00264361	0.40	24.9	2.0	0.23	241	1.69	0.02	0.16	2.0	765	2.3	11.6	<0.001	0.12	<0.05	0.7	<0.2	0.2	34	<0.01	<0.01
B00264362	0.33	34.1	8.4	0.47	680	2.54	0.04	0.68	6.5	884	26.5	18.6	<0.001	0.35	<0.05	3.9	0.7	0.4	64.1	<0.01	0.06
B00264363	0.72	62.9	9.4	0.80	796	3.43	0.02	1.07	3.6	724	3.9	31.8	<0.001	0.41	0.09	2.8	<0.2	0.7	95.8	<0.01	0.04
B00264364	0.28	16.5	4.3	1.48	459	0.78	0.03	0.06	4.2	596	3.8	11.4	<0.001	0.16	0.42	1.5	0.5	0.5	88.6	<0.01	<0.01

BMC Sample ID	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
B00264311	6.6	<0.005	0.18	0.59	3	0.12	6.47	57	7.2
B00264312	12.2	0.005	0.49	9.23	4	0.19	7.97	134	21.2
B00264313	15.8	<0.005	1.91	4.56	<1	0.20	2.61	295	21.5
B00264314	18.7	<0.005	6.15	2.04	2	0.18	11.67	9	12.5
B00264315	1.0	0.106	0.55	0.06	59	0.20	9.84	66	1.1
B00264316	25.6	0.015	0.15	0.85	3	0.09	10.20	9	10.8
B00264317	8.3	0.052	0.16	1.34	37	0.08	14.54	42	4.1
B00264318	22.1	0.006	0.09	2.17	5	0.11	10.44	16	5.7
B00264319	6.1	<0.005	0.50	0.72	3	0.13	6.56	41	12.1
B00264320	6.1	<0.005	0.43	1.03	3	0.10	8.02	68	20.8
B00264321	15.7	<0.005	0.07	3.97	3	0.15	7.98	5	5.9
B00264322	16.7	<0.005	0.06	0.82	3	0.12	6.99	42	7.5
B00264323	15.5	<0.005	0.06	1.27	3	0.12	8.26	24	10.9
B00264324	22.3	0.009	0.10	2.51	4	0.12	11.27	30	7.0
B00264325	0.6	0.013	5.30	0.39	37	0.08	14.86	169	2.6
B00264326	0.3	0.241	0.49	0.06	59	0.12	4.96	64	1.3
B00264327	6.1	0.008	0.29	0.46	3	4.58	8.51	85	9.0
B00264328	8.3	<0.005	0.34	0.58	3	0.29	5.87	52	7.9
B00264329	6.7	0.005	0.37	1.17	4	0.41	7.58	61	10.2
B00264330	17.5	<0.005	0.37	5.72	10	0.26	4.01	50	24.5
B00264331	23.5	<0.005	0.39	8.15	2	0.27	3.56	65	20.2
B00264332	17.6	<0.005	8.43	4.94	3	0.18	5.96	230	31.4
B00264333	5.0	0.011	0.12	0.43	4	0.27	10.78	41	7.2
B00264334	14.5	0.015	0.13	2.24	3	0.12	10.57	49	21.2
B00264335	13.4	0.021	0.13	0.95	4	0.11	9.39	364	12.9
B00264336	29.8	<0.005	0.41	3.00	2	0.18	7.18	25	22.8
B00264337	14.4	<0.005	0.59	4.91	2	0.25	4.23	14	17.1
B00264338	14.5	<0.005	1.10	3.81	11	0.11	4.33	330	18.8
B00264339	0.4	0.015	0.09	<0.05	14	0.09	9.20	58	1.5
B00264340	11.5	0.027	0.16	1.18	4	0.14	9.73	16	19.4
B00264341	10.3	<0.005	0.08	1.07	2	0.08	5.81	59	13.7
B00264342	6.0	<0.005	0.09	0.41	2	0.07	5.82	36	5.4
B00264343	6.9	<0.005	0.31	0.65	3	0.09	9.18	82	14.5
B00264344	11.9	<0.005	0.23	3.85	2	0.07	5.80	49	25.7
B00264345	19.6	0.029	4.73	3.86	36	0.19	15.60	47	9.6
B00264346	36.0	<0.005	3.82	18.83	3	0.17	11.83	2426	38.3
B00264347	16.0	<0.005	0.10	2.48	2	0.11	6.00	24	20.2
B00264348	21.4	0.012	0.16	1.51	5	0.11	10.54	39	6.9
B00264349	7.0	0.032	0.24	0.43	46	0.14	18.57	53	7.9
B00264350	11.9	0.006	0.10	1.07	4	0.11	10.16	48	11.5
B00264351	1.4	<0.005	0.06	0.16	2	<0.05	1.21	24	2.1
B00264352	17.8	<0.005	0.35	6.76	<1	0.16	3.64	85	32.0
B00264353	12.3	<0.005	0.35	2.39	<1	0.12	2.40	145	16.7
B00264354	11.8	<0.005	2.80	3.64	3	0.17	4.30	1326	29.1
B00264355	16.6	0.005	2.81	3.15	2	0.16	2.87	1389	20.6
B00264356	15.3	<0.005	4.21	4.24	2	0.19	4.03	1652	21.8
B00264357	1.3	0.342	14.39	<0.05	77	0.10	24.23	214	1.2
B00264358	22.1	0.007	0.37	1.37	2	0.12	23.58	12	26.5
B00264359	12.9	0.006	0.16	0.59	3	0.09	6.80	86	7.1
B00264360	5.2	0.006	0.11	0.84	3	0.08	6.05	309	13.1
B00264361	12.6	0.006	0.10	0.91	2	0.08	5.95	217	11.0
B00264362	11.6	0.015	0.15	0.75	4	0.16	14.01	51	11.4
B00264363	17.0	0.047	0.34	1.10	6	0.40	20.49	74	8.7
B00264364	12.2	<0.005	0.17	3.34	4	0.08	9.00	29	22.8

BMC Sample ID	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.01**	**0.1**	**0.005**	**10**	**10**	**0.05**	**0.01**	**0.01**	**0.01**	**0.02**	**0.1**	**1**	**0.05**	**0.2**	**0.01**	**0.05**	**0.05**	**0.02**	**0.01**	**0.005**
B00264365	0.27	0.44	11.5	<0.005	<10	57	0.21	0.49	1.65	0.20	16.93	0.9	106	0.40	15.1	1.88	1.03	<0.05	0.73	0.03	0.010
B00264366	0.05	0.64	1.4	<0.005	<10	222	0.23	0.14	1.39	0.31	36.48	2.2	66	0.21	11.9	1.11	1.51	0.07	0.27	<0.01	0.006
B00264367	0.23	0.50	0.4	<0.005	<10	188	0.17	0.61	1.16	0.30	36.86	3.6	66	0.49	19.1	1.74	1.36	0.07	0.21	<0.01	0.008
B00264368	0.03	0.47	0.3	<0.005	<10	114	0.19	0.03	0.81	0.22	53.05	2.4	67	0.46	5.1	1.22	1.37	0.09	0.20	<0.01	0.009
B00264369	0.12	0.33	0.7	<0.005	<10	87	0.13	0.16	1.83	0.45	28.47	4.3	46	0.36	5.1	2.67	0.86	0.07	0.15	<0.01	0.009
B00264370	0.15	0.44	4.0	<0.005	<10	128	0.19	0.56	2.03	0.28	34.57	4.7	54	0.54	13.7	3.14	1.19	0.07	0.18	<0.01	0.006
B00264371	0.32	0.46	0.5	<0.005	<10	153	0.28	0.45	2.76	0.57	44.05	2.8	49	1.33	39.5	2.91	1.71	0.08	0.20	<0.01	0.020
B00264372	0.46	0.44	<0.1	<0.005	<10	182	0.21	1.33	1.72	0.12	35.73	5.6	47	0.70	74.7	3.42	1.24	0.08	0.12	<0.01	0.007
B00264373	1.05	0.44	7.6	0.007	<10	151	0.23	2.15	1.96	0.17	31.70	5.0	63	0.44	173.5	4.06	1.15	0.09	0.18	<0.01	0.008
B00264374	0.02	0.59	<0.1	<0.005	<10	119	0.40	0.02	2.30	0.13	86.38	0.9	68	1.27	1.3	1.91	2.98	0.12	0.15	<0.01	0.015
B00264375	0.26	1.34	0.6	<0.005	<10	117	0.32	0.14	2.54	0.42	55.51	8.8	46	0.55	69.0	3.24	3.80	0.10	0.17	<0.01	0.015
B00264376	1.59	0.44	0.2	<0.005	<10	109	0.21	4.51	2.33	0.56	126.44	7.1	51	0.60	61.8	3.16	1.76	0.17	0.25	<0.01	0.011
B00264401	0.15	0.42	25.1	<0.005	<10	87	0.17	0.11	0.19	0.07	29.82	3.8	64	0.29	7.3	2.01	1.06	0.08	0.36	0.13	0.005
B00264402	0.16	0.42	689.8	<0.005	<10	90	0.19	0.79	1.10	0.48	32.76	5.4	62	0.24	43.5	2.83	1.19	0.08	0.14	0.01	0.008
B00264403	0.24	0.40	1.8	<0.005	<10	81	0.21	0.39	0.06	0.24	37.73	0.7	51	0.38	14.6	0.46	1.20	0.08	0.35	<0.01	<0.005
B00264404	0.24	0.46	17.6	<0.005	<10	88	0.24	1.73	0.18	0.14	25.98	4.6	66	0.26	23.5	1.50	1.42	0.09	0.45	<0.01	0.006
B00264405	0.06	0.59	2576.0	<0.005	<10	145	0.16	0.06	2.76	0.16	115.03	1.7	28	0.85	13.4	1.54	1.87	0.13	0.51	0.01	0.007
B00264406	0.04	0.48	0.2	<0.005	<10	166	0.25	0.03	2.31	0.17	70.08	2.2	73	5.06	3.4	1.47	2.41	0.10	0.15	<0.01	0.016
B00264407	0.06	0.74	<0.1	<0.005	<10	114	0.24	0.02	1.02	0.11	36.29	3.3	69	1.17	8.6	2.31	2.13	0.09	0.32	<0.01	0.009
B00264408	0.17	0.44	0.3	<0.005	<10	219	0.20	0.03	2.21	0.92	44.54	6.0	64	0.33	45.2	3.32	1.30	0.09	0.12	<0.01	0.012
B00264409	0.04	0.49	46.5	<0.005	<10	196	0.24	0.04	1.86	0.27	54.69	1.1	67	1.17	10.3	2.23	1.46	0.09	0.15	<0.01	<0.005
B00264410	0.13	0.50	1.0	<0.005	<10	78	0.24	0.11	2.02	0.14	83.04	2.2	73	0.39	5.2	0.73	1.65	0.11	0.08	<0.01	0.010
B00264411	0.12	0.37	2.9	<0.005	<10	99	0.17	0.24	1.50	0.10	30.81	3.6	61	0.18	4.9	1.34	1.06	0.06	0.14	<0.01	0.007
B00264412	1.09	0.56	14.4	0.010	<10	91	0.25	0.88	0.54	6.55	33.96	5.3	60	0.24	64.4	2.12	1.74	0.09	0.19	0.11	0.085
B00264413	0.04	0.45	1.3	<0.005	<10	278	0.20	0.07	1.62	0.29	47.13	4.6	50	0.25	25.7	1.60	1.24	0.08	0.09	<0.01	0.007
B00264414	0.08	0.65	33.2	<0.005	<10	211	0.16	0.17	1.77	0.35	39.85	0.8	51	0.43	10.4	1.35	1.74	0.06	0.77	<0.01	0.008
B00264415	4.93	1.09	6.6	0.010	<10	241	0.20	9.79	0.09	0.18	46.09	4.7	25	0.25	330.1	3.08	3.34	0.22	1.00	<0.01	<0.005
B00264416	0.06	1.59	64.6	<0.005	<10	165	0.16	0.08	0.02	0.01	65.35	3.1	55	0.17	26.5	2.82	5.03	0.14	0.39	<0.01	0.005
B00264417	1.54	0.43	6.1	<0.005	14	129	0.14	2.08	0.13	16.44	17.68	8.8	50	0.15	582.7	2.31	1.31	0.19	0.93	0.10	0.046
B00264418	0.11	0.76	0.6	<0.005	<10	298	0.24	0.33	1.00	0.16	50.50	4.1	43	0.47	39.8	2.23	2.51	0.10	0.25	<0.01	0.012
B00264419	0.07	1.03	1.1	<0.005	<10	310	0.28	0.13	1.50	0.15	58.53	3.2	38	0.50	5.0	3.08	3.52	0.11	0.32	<0.01	0.016
B00264420	0.05	0.77	6.8	<0.005	<10	261	0.24	0.08	2.07	0.20	43.86	3.9	45	0.65	21.3	2.67	2.52	0.08	0.38	<0.01	0.011
B00264421	0.02	0.67	<0.1	<0.005	<10	277	0.29	0.02	2.23	0.16	72.08	1.8	43	0.79	1.5	2.76	1.97	0.10	0.22	<0.01	0.010
B00264422	0.09	0.62	2.0	<0.005	<10	254	0.23	0.37	1.09	0.09	51.46	3.3	58	0.14	16.5	1.49	1.91	0.10	0.27	<0.01	0.007
B00264423	0.49	0.44	4.2	<0.005	16	205	0.20	0.46	1.19	0.45	31.41	3.1	88	0.10	50.8	1.48	1.61	<0.05	0.38	<0.01	<0.005
B00264424	0.07	0.89	0.3	<0.005	17	200	0.25	0.02	1.23	0.13	34.74	2.2	57	1.11	50.1	2.54	3.12	0.08	0.41	<0.01	0.007
B00264425	0.20	0.40	4.2	<0.005	<10	77	0.17	0.18	2.15	0.30	24.19	5.6	50	0.21	6.5	2.75	1.08	0.06	0.28	<0.01	0.009
B00264426	0.14	0.45	3.0	<0.005	<10	84	0.18	0.15	1.66	0.13	35.62	3.6	50	0.31	5.1	1.82	1.29	0.06	0.32	<0.01	0.008
B00264427	0.17	0.41	0.4	<0.005	15	82	0.21	0.03	1.95	0.70	33.90	17.6	63	0.32	54.9	3.55	1.51	0.07	0.12	<0.01	0.009
B00264428	0.66	0.37	0.2	<0.005	12	100	0.19	1.01	1.93	0.49	44.19	6.7	66	0.48	8.9	2.66	1.18	0.06	0.13	<0.01	0.007
B00264429	0.24	0.35	11.9	<0.005	15	59	0.17	0.30	1.28	0.08	92.94	6.2	74	0.30	6.3	3.53	1.23	0.11	0.20	<0.01	0.005
B00264430	0.34	0.65	1.2	<0.005	15	93	0.40	0.02	4.77	0.25	54.22	25.5	36	0.84	38.1	5.29	2.51	0.11	0.09	<0.01	0.011
B00264431	0.05	0.96	0.5	<0.005	15	101	0.39	0.08	1.34	0.05	103.25	5.3	79	1.88	15.0	2.36	3.69	0.12	0.37	<0.01	0.015
B00264432	0.03	1.50	0.2	<0.005	14	126	0.46	0.06	2.79	0.07	140.31	4.6	57	3.27	6.3	2.71	4.97	0.15	0.36	<0.01	0.020
B00264433	0.05	0.50	0.2	<0.005	16	122	0.27	0.08	1.28	0.08	54.29	2.6	72	0.86	3.8	1.48	1.48	0.07	0.24	<0.01	0.009
B00264434	0.02	0.61	<0.1	<0.005	16	134	0.29	<0.01	1.31	0.08	56.83	1.2	64	0.33	2.9	1.29	1.78	0.07	0.23	<0.01	0.009
B00264435	0.06	0.41	5.1	<0.005	14	77	0.20	0.14	2.15	0.15	29.97	3.6	42	0.23	3.7	2.12	1.26	0.05	0.24	<0.01	0.009
B00264436	0.08	0.41	1.5	0.010	14	74	0.71	0.06	0.46	0.28	66.36	6.9	51	1.33	8.9	1.88	2.47	0.10	0.27	<0.01	0.021
B00264437	0.21	3.39	681.4	<0.005	14	76	0.15	0.04	5.75	0.18	14.59	33.0	156	0.36	47.1	4.94	6.41	0.06	<0.02	<0.01	0.017
B00264438	0.16	3.30	41.6	0.006	13	17	0.12	0.01	5.11	0.19	6.79	44.4	223	0.19	52.6	4.94	13.65	0.20	0.02	<0.01	0.021
B00264439	2.82	0.48	12.5	0.009	10	110	0.09	0.71	0.44	0.29	29.44	3.5	77	3.43	60.0	1.71	0.99	0.07	0.81	0.04	<0.005
B00264440	0.36	0.42	30.2	0.008	15	81	0.21	0.15	0.59	0.68	36.37	6.5	71	0.64	24.1	2.28	1.32	0.07	0.35	<0.01	0.010
B00264441	0.05	0.71	0.3	<0.005	18	101	0.32	0.03	1.22	0.44	42.59	4.6	59	2.13	7.7	2.59	3.06	0.08	0.29	<0.01	0.017
B00264442	0.11	0.36	9.9	<0.005	16	114	0.16	0.10	3.01	0.15	29.21	6.2	54	0.41	10.7	3.40	1.04	0.06	0.30	<0.01	0.015

BMC Sample ID	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)
	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.2**	**0.1**	**0.01**	**5**	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.2**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**	**0.2**	**0.2**	**0.01**	**0.01**
B00264365	0.21	9.0	2.4	0.76	608	2.60	0.01	0.12	4.4	49	19.4	9.1	0.001	0.88	1.93	0.6	3.5	0.6	29.7	<0.01	<0.01
B00264366	0.44	17.6	1.3	0.53	337	4.18	0.02	0.13	9.9	871	5.6	14.3	0.031	0.26	5.84	1.0	1.2	0.4	53.4	<0.01	<0.01
B00264367	0.35	18.0	2.4	0.47	331	1.90	0.02	0.13	4.3	635	11.5	15.2	<0.001	0.51	0.37	0.9	1.1	0.4	49.4	<0.01	<0.01
B00264368	0.39	25.6	3.3	0.17	237	2.09	0.03	0.21	3.9	821	4.6	12.8	<0.001	0.36	<0.05	0.9	0.2	0.4	33.4	<0.01	<0.01
B00264369	0.28	14.5	2.0	0.52	474	1.69	0.02	0.18	5.3	692	66.6	9.1	<0.001	0.95	0.2	0.8	1.0	0.3	65.1	<0.01	<0.01
B00264370	0.38	16.6	2.7	0.61	534	3.17	0.02	0.22	5.2	767	47.3	11.9	<0.001	1.20	0.21	1.1	1.6	0.3	83.7	<0.01	<0.01
B00264371	0.33	21.5	4.7	0.82	670	2.65	0.03	0.11	4.0	1022	10.8	13.2	0.001	0.44	<0.05	2.6	0.3	0.3	127.5	<0.01	<0.01
B00264372	0.36	17.3	4.2	0.58	573	1.62	0.02	0.37	9.3	710	59.9	11.7	<0.001	0.90	<0.05	1.2	2.2	0.3	86.6	<0.01	<0.01
B00264373	0.34	15.4	2.9	0.59	536	1.84	0.02	0.19	6.3	677	39.0	11.6	<0.001	2.09	0.23	1.1	4.8	0.3	84.5	<0.01	0.02
B00264374	0.24	42.3	4.3	0.68	791	2.29	0.05	0.08	2.9	743	3.2	10.4	0.001	0.03	<0.05	2.6	<0.2	0.3	54.1	<0.01	<0.01
B00264375	0.24	27.1	8.6	1.03	798	2.02	0.02	0.22	5.0	713	3.1	9.8	<0.001	0.23	<0.05	1.9	1.1	0.3	48.4	<0.01	<0.01
B00264376	0.27	61.5	2.1	0.66	735	2.33	0.05	0.15	6.2	805	67.4	9.8	<0.001	1.08	0.07	1.4	2.8	0.3	34.3	<0.01	0.03
B00264401	0.25	13.5	3.3	0.04	24	3.15	0.01	0.18	4.8	597	29.8	9.2	<0.001	2.07	2	0.5	0.2	0.2	6.4	<0.01	0.02
B00264402	0.30	15.8	1.0	0.42	270	2.21	0.02	0.11	5.5	818	36.0	12.1	<0.001	1.39	5.7	0.9	0.9	0.3	30.8	<0.01	0.05
B00264403	0.30	16.9	1.6	0.03	23	3.90	0.02	0.08	2.9	279	28.8	14.0	<0.001	0.24	1.33	0.5	0.9	0.5	3.2	<0.01	0.18
B00264404	0.33	12.9	1.4	0.10	97	2.89	0.02	0.10	7.9	201	59.3	14.3	0.001	1.49	14.36	0.6	2.2	0.6	4.9	<0.01	0.08
B00264405	0.44	53.0	3.6	1.54	726	4.43	0.02	0.27	2.2	159	7.6	21.1	<0.001	0.21	2.34	0.7	2.0	0.6	45.9	0.01	0.06
B00264406	0.37	31.7	4.4	0.65	866	2.26	0.08	0.39	4.2	807	4.0	18.4	0.001	0.35	<0.05	5.3	0.3	0.5	55.7	<0.01	0.04
B00264407	0.57	16.4	6.2	0.47	845	2.60	0.02	1.14	5.4	509	2.1	26.3	<0.001	0.43	<0.05	0.9	<0.2	0.4	31.4	<0.01	0.02
B00264408	0.35	20.2	1.7	0.59	871	2.66	0.03	0.21	4.4	676	3.2	12.6	<0.001	0.91	<0.05	1.3	1.0	0.3	94.9	<0.01	0.03
B00264409	0.33	24.7	3.7	0.77	589	1.87	0.02	0.28	3.1	719	4.1	13.4	0.001	0.26	0.55	1.4	<0.2	0.3	78.6	<0.01	0.03
B00264410	0.28	36.6	2.6	0.24	326	3.60	0.02	0.10	3.4	399	27.4	10.7	<0.001	0.16	1.23	0.5	0.4	0.4	32.8	<0.01	0.02
B00264411	0.30	13.9	0.9	0.42	600	1.93	0.01	0.13	6.2	708	20.7	10.8	<0.001	0.31	0.27	0.8	<0.2	0.2	28.5	<0.01	0.03
B00264412	0.44	15.4	1.7	0.17	183	3.23	0.02	0.14	6.2	833	387.6	15.5	<0.001	1.86	1.44	1.0	2.7	0.4	12.6	<0.01	0.04
B00264413	0.36	21.2	1.6	0.42	477	2.09	0.02	0.23	8.7	819	2.5	11.9	<0.001	0.22	0.09	1.2	0.3	0.2	73.6	<0.01	0.04
B00264414	0.37	18.9	3.2	0.94	584	4.29	0.03	0.19	3.6	91	12.9	16.8	<0.001	0.02	0.37	0.6	0.7	0.6	30.9	<0.01	0.03
B00264415	0.29	20.6	6.8	0.58	492	5.83	0.02	0.42	2.2	244	914.3	12.6	<0.001	0.92	4.16	0.6	26.1	0.7	4.7	0.01	0.04
B00264416	0.19	30.1	8.6	1.01	305	3.96	0.02	0.16	4.4	60	5.2	7.7	0.007	0.16	1.19	0.6	1.5	0.4	3.1	<0.01	0.03
B00264417	0.18	8.6	2.4	0.19	341	5.63	0.02	<0.05	4.1	140	332.7	8.3	0.001	1.10	1.03	0.5	63.2	0.3	2.3	<0.01	<0.01
B00264418	0.46	22.9	3.3	0.48	361	2.41	0.03	1.35	6.2	693	6.1	16.7	<0.001	0.38	0.14	1.5	0.7	0.5	57.7	<0.01	0.03
B00264419	0.58	26.3	5.7	0.76	619	2.20	0.03	1.06	3.3	829	4.6	21.4	<0.001	0.01	0.06	2.2	<0.2	0.8	81.2	<0.01	0.03
B00264420	0.52	19.8	3.9	0.78	598	1.53	0.03	1.17	5.3	684	4.5	19.7	<0.001	0.08	<0.05	1.7	0.3	0.5	107.4	<0.01	0.05
B00264421	0.43	32.4	2.1	0.88	632	1.52	0.02	0.56	3.4	781	3.8	15.7	<0.001	0.02	0.47	1.6	<0.2	0.4	128.9	<0.01	0.05
B00264422	0.51	23.1	1.8	0.25	377	1.30	0.03	0.38	4.8	938	10.7	15.4	<0.001	0.59	0.18	1.2	<0.2	0.4	40.9	<0.01	0.03
B00264423	0.33	17.2	1.6	0.37	574	2.32	0.02	0.18	4.9	778	166.0	14.4	<0.001	0.46	0.23	1.3	1.0	<0.2	52	<0.01	<0.01
B00264424	0.62	19.0	5.3	0.66	783	0.63	0.02	0.94	4.4	557	2.3	43.0	<0.001	0.40	0.08	1.8	0.5	<0.2	45.2	<0.01	<0.01
B00264425	0.30	11.8	1.2	0.68	1057	2.37	0.01	0.16	5.5	690	36.3	12.3	<0.001	1.13	0.17	0.9	0.3	0.3	44	<0.01	0.04
B00264426	0.35	16.0	1.2	0.51	864	2.12	0.02	0.26	4.4	799	27.4	14.1	<0.001	0.61	0.16	0.9	0.2	0.3	36.5	<0.01	0.04
B00264427	0.31	18.6	2.1	0.45	666	2.06	0.01	0.08	10.2	659	5.7	15.1	<0.001	2.08	0.23	1.2	1.9	<0.2	34	<0.01	<0.01
B00264428	0.32	24.4	1.7	0.62	886	2.93	0.01	0.18	7.7	748	132.9	13.7	<0.001	0.67	0.06	1.0	1.1	<0.2	44.3	<0.01	0.02
B00264429	0.29	44.9	1.3	0.40	564	2.00	0.02	0.06	7.9	714	31.1	11.1	<0.001	3.09	0.32	0.9	0.3	<0.2	34	<0.01	<0.01
B00264430	0.51	28.4	3.8	1.50	2469	1.44	0.02	<0.05	9.6	1408	6.3	30.1	0.001	1.64	0.07	5.4	6.3	<0.2	81.4	<0.01	0.01
B00264431	0.63	50.2	8.0	0.51	490	2.33	0.02	0.91	7.6	683	4.6	29.1	0.001	0.23	0.28	1.8	<0.2	<0.2	21.2	<0.01	<0.01
B00264432	0.83	68.8	10.4	1.01	832	2.20	0.02	0.53	6.5	683	4.0	32.4	0.001	0.08	0.34	2.4	<0.2	0.3	43.6	<0.01	<0.01
B00264433	0.41	26.5	1.7	0.41	451	2.33	0.02	0.18	5.0	612	6.3	14.7	<0.001	0.11	0.16	1.0	<0.2	<0.2	24.6	<0.01	<0.01
B00264434	0.48	27.5	1.9	0.41	469	1.91	0.02	0.18	3.2	686	2.0	14.8	<0.001	0.08	0.13	1.0	<0.2	<0.2	27.6	<0.01	<0.01
B00264435	0.32	16.6	1.7	0.65	641	2.59	0.02	<0.05	5.2	726	8.9	12.6	<0.001	0.62	0.88	1.3	0.5	<0.2	52.8	<0.01	0.02
B00264436	0.30	34.0	6.2	0.31	451	3.97	0.02	0.14	11.0	839	5.7	18.9	<0.001	0.15	2.33	2.0	0.2	2.1	27.1	0.02	0.1
B00264437	0.17	6.4	21.5	3.43	783	0.46	0.01	<0.05	66.3	542	20.1	7.7	0.001	0.05	0.26	5.8	<0.2	<0.2	96	<0.01	<0.01
B00264438	0.02	2.9	31.7	3.63	863	0.86	0.02	<0.05	58.9	509	7.2	1.6	<0.001	<0.01	0.2	15.2	<0.2	<0.2	88.6	<0.01	0.03
B00264439	0.17	16.5	6.7	0.09	142	2.54	0.01	0.19	6.7	121	333.6	7.2	<0.001	1.49	5.04	0.4	6.0	<0.2	18.3	<0.01	<0.01
B00264440	0.32	20.4	1.3	0.14	182	2.20	0.01	0.08	7.6	771	74.9	12.9	<0.001	2.17	0.49	0.9	0.6	<0.2	15.8	<0.01	<0.01
B00264441	0.42	23.9	5.0	0.51	564	1.83	0.03	0.64	7.1	703	2.9	21.2	<0.001	0.31	<0.05	2.0	<0.2	<0.2	30.1	<0.01	<0.01
B00264442	0.20	16.2	1.2	0.83	820	3.30	0.04	<0.05	9.0	717	9.4	8.3	<0.001	1.39	2.25	1.9	<0.2	<0.2	61.3	<0.01	<0.01

BMC Sample ID	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
B00264365	17.2	<0.005	0.25	8.76	4	0.11	6.65	29	32.6
B00264366	9.2	0.006	0.47	2.75	5	0.13	6.56	47	13.1
B00264367	8.4	0.007	0.37	0.72	3	0.10	6.06	46	12.2
B00264368	12.0	0.005	0.08	0.85	3	0.08	8.38	33	9.9
B00264369	6.4	<0.005	0.08	0.96	2	0.06	6.60	95	7.4
B00264370	7.7	0.006	0.12	0.77	3	0.07	7.41	52	8.4
B00264371	9.5	<0.005	0.10	0.92	6	0.06	14.29	91	10.0
B00264372	7.6	0.007	0.10	0.55	4	0.07	6.98	59	6.2
B00264373	7.0	0.005	0.12	0.69	4	0.08	7.01	16	9.2
B00264374	21.3	<0.005	0.07	1.00	8	0.07	11.15	36	8.3
B00264375	17.4	<0.005	0.07	0.93	6	0.07	10.16	80	8.8
B00264376	28.2	0.009	0.08	0.96	4	0.09	10.08	59	12.3
B00264401	7.6	<0.005	0.19	1.93	2	0.94	5.21	32	14.9
B00264402	6.5	<0.005	0.24	0.48	3	0.13	6.07	71	7.2
B00264403	15.6	<0.005	1.08	3.71	1	0.14	3.78	37	17.7
B00264404	10.4	<0.005	0.72	3.18	4	0.13	3.38	28	21.8
B00264405	40.7	0.011	0.92	7.26	2	0.20	10.01	51	24.4
B00264406	19.3	0.034	0.18	1.15	9	0.13	14.25	27	6.9
B00264407	9.1	0.031	0.26	1.61	3	0.10	5.82	50	14.7
B00264408	9.1	<0.005	0.1	0.51	3	0.09	8.01	110	6.0
B00264409	11.5	<0.005	0.68	0.65	3	0.12	8.47	52	8.1
B00264410	28.4	<0.005	0.24	4.02	1	0.08	8.73	45	4.0
B00264411	6.9	<0.005	0.06	0.74	2	0.07	6.11	34	7.3
B00264412	6.5	0.006	0.17	0.73	3	0.08	6.03	1266	9.0
B00264413	8.7	0.007	0.06	0.38	4	0.31	8.29	24	4.1
B00264414	19.8	0.007	1.83	3.58	2	0.15	5.88	59	38.5
B00264415	18.5	0.007	2.14	4.74	2	0.17	5.40	108	46.6
B00264416	21.6	<0.005	0.58	3.05	7	0.09	3.98	103	18.1
B00264417	13.7	<0.005	0.75	6.39	2	0.06	3.16	2041	45.9
B00264418	9.8	0.035	0.21	0.75	4	0.14	6.14	40	12.8
B00264419	11.1	0.041	0.21	0.76	6	0.15	7.59	42	16.4
B00264420	9.1	0.031	0.19	0.99	5	0.13	7.98	34	20.0
B00264421	14.5	0.008	0.14	0.87	4	0.11	8.47	27	11.3
B00264422	11.2	0.012	0.09	1.04	3	0.11	9.80	13	14.9
B00264423	5.6	0.006	0.07	0.81	2	0.11	8.74	80	24.4
B00264424	6.2	0.052	0.31	0.80	4	0.06	8.08	74	19.3
B00264425	4.9	0.005	0.07	0.80	3	0.06	6.51	128	15.6
B00264426	7.3	0.008	0.08	1.02	2	0.07	6.96	56	16.8
B00264427	9.1	<0.005	0.08	1.01	3	0.07	7.68	217	8.3
B00264428	14.9	<0.005	0.06	1.29	2	<0.05	8.72	112	7.6
B00264429	23.1	<0.005	0.08	1.61	3	<0.05	8.28	17	10.9
B00264430	8.0	0.018	0.17	0.46	22	0.07	16.04	76	7.1
B00264431	22.1	0.032	0.23	1.54	5	0.10	14.61	18	17.9
B00264432	23.4	0.053	0.24	1.55	6	0.17	19.40	12	16.5
B00264433	15.2	<0.005	0.11	2.16	3	0.05	8.59	20	10.3
B00264434	12.6	<0.005	0.12	1.33	3	0.05	8.42	26	10.6
B00264435	5.6	<0.005	0.17	0.77	3	<0.05	8.83	32	11.5
B00264436	9.8	<0.005	0.21	0.92	3	0.36	9.22	40	12.3
B00264437	0.7	0.036	0.21	<0.05	59	<0.05	14.97	57	<0.5
B00264438	0.3	0.103	0.04	<0.05	117	<0.05	8.69	56	1.0
B00264439	12.6	<0.005	1.26	4.93	2	<0.05	7.87	33	44.1
B00264440	6.7	<0.005	0.1	0.99	2	<0.05	7.51	140	15.4
B00264441	7.9	0.013	0.16	0.82	4	<0.05	8.24	129	14.5
B00264442	5.5	<0.005	0.1	0.83	3	<0.05	8.39	54	13.2

BMC Sample ID	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.01**	**0.1**	**0.005**	**10**	**10**	**0.05**	**0.01**	**0.01**	**0.01**	**0.02**	**0.1**	**1**	**0.05**	**0.2**	**0.01**	**0.05**	**0.05**	**0.02**	**0.01**	**0.005**
B00264443	0.07	0.37	0.7	<0.005	12	58	0.20	0.04	6.91	0.06	181.17	0.9	36	0.17	2.8	0.33	1.43	0.14	0.11	<0.01	<0.005
B00264444	0.63	0.52	11.9	<0.005	15	161	0.31	1.01	0.43	0.03	133.19	6.6	30	0.15	4.6	0.71	1.94	0.16	0.12	0.02	0.005
B00264445	0.01	3.36	40.1	<0.005	15	73	0.23	<0.01	3.58	0.07	24.05	47.1	149	1.47	7.0	5.27	9.15	0.13	<0.02	<0.01	0.017
B00264446	0.17	0.44	3.6	<0.005	15	115	0.22	0.46	0.53	0.22	23.98	2.7	71	0.37	12.7	0.89	1.51	0.06	0.66	<0.01	0.007
B00264447	0.04	0.94	4.5	<0.005	16	76	0.53	0.06	3.04	0.16	36.40	6.5	35	5.23	8.5	2.58	3.97	0.07	0.37	<0.01	0.017
B00264448	0.09	0.83	0.3	<0.005	15	122	0.36	0.11	2.20	0.35	32.30	6.4	37	2.86	32.6	3.41	2.95	0.07	0.32	<0.01	0.010
B00264449	0.10	0.38	4.3	<0.005	12	130	0.28	0.11	2.25	0.08	50.95	1.5	50	0.42	33.7	1.79	1.70	0.07	0.28	<0.01	0.007
B00264450	1.45	0.49	0.9	<0.005	15	155	0.26	1.98	1.53	11.12	46.54	6.1	55	0.68	116.5	2.18	1.51	0.08	0.21	0.01	0.052
B00264451	0.14	0.55	1.0	<0.005	16	191	0.31	0.05	1.21	0.14	27.89	5.4	60	0.98	52.4	1.75	2.14	0.06	0.21	<0.01	0.010
B00264452	0.12	0.41	85.0	<0.005	14	633	0.14	0.17	3.11	3.46	29.22	0.8	42	1.44	4.1	1.92	0.72	<0.05	0.88	0.05	0.013
B00264453	0.42	0.68	821.8	0.014	<10	484	0.15	1.14	0.10	3.42	32.78	3.8	33	0.60	21.4	1.47	1.74	0.11	0.93	0.03	0.022
B00264454	0.20	0.52	303.5	<0.005	<10	514	0.18	0.34	0.23	0.22	45.14	1.3	54	1.19	2.9	2.04	1.36	0.10	0.67	0.04	0.009
B00264455	0.11	0.63	0.3	<0.005	<10	126	0.17	0.12	1.35	0.12	37.94	6.1	99	0.58	8.6	3.06	1.25	0.08	0.25	<0.01	0.011
B00264456	0.08	0.5	0.800	<0.005	<10	163.00	0.14	0.11	1.12	0.08	24.4	3	68.00	0.4	5.60	2.35	0.81	0.06	0.14	<0.01	0.01
B00264457	0.03	0.0	47.500	<0.005	<10	<10	0.23	0.03	0.14	0.24	55.1	1	5.00	0.3	3.80	0.07	1.77	0.07	0.90	<0.01	0.01
B00264458	0.03	0.4	1.300	<0.005	<10	45.00	0.17	0.11	1.15	0.12	20.5	2	69.00	0.1	3.50	0.74	1.05	<0.05	0.47	<0.01	<0.005
B00264459	0.28	0.5	22.000	<0.005	15	51.00	0.20	0.29	0.89	6.17	17.4	2	65.00	0.2	10.00	2.13	1.29	<0.05	0.90	0.190	0.35
B00293251	0	5	148.00	0.10	0.37	0.76	3.31	56.5	2	92.00	0.1	17.90	0.88	0.74	0.08	0.30	0.160	0.02	0.3	27.7	0.70
B00293252	0	5	121.00	0.33	0.58	0.60	0.08	92.7	4	72.00	0.2	10.50	1.73	1.79	0.16	0.19	0.010	0.01	0.4	43.5	3.20
B00293253	0	5	107.00	0.36	1.51	2.02	0.21	42.8	2	56.00	0.2	5.10	0.83	1.38	0.10	0.08	0.010	0.00	0.4	18.3	4.50
B00293254	0	5	143.00	0.27	0.45	0.35	0.04	109.1	3	72.00	0.1	5.60	1.12	1.71	0.20	0.24	0.070	0.00	0.3	57.1	2.30
B00293255	0	5	127.00	0.11	0.14	0.36	0.21	126.6	3	80.00	0.1	38.10	0.97	1.36	0.21	0.43	0.030	0.00	0.3	62.6	1.10
B00293256	0	5	154.00	0.20	5.60	1.00	0.54	87.5	2	56.00	0.1	19.10	0.62	1.41	0.13	0.12	0.040	0.01	0.3	38.7	0.90
B00293257	0	5	98.00	0.17	0.080	0.98	0.05	100.6	3	48.00	0.1	2.10	0.54	1.35	0.15	0.21	0.020	0.00	0.3	44.5	0.90
B00293258	0	5	87.00	0.31	0.36	0.40	0.04	22.2	3	42.00	0.1	9.10	0.98	1.20	0.07	0.21	0.030	0.00	0.4	8.8	2.00
B00293259	0	5	107.00	0.54	0.23	2.35	0.17	88.9	1	69.00	0.2	3.80	0.43	1.90	0.16	0.19	0.030	0.00	0.4	41.3	2.80
B00293260	0	5	168.00	0.18	0.14	0.19	0.06	43.5	3	85.00	0.2	9.20	0.86	1.04	0.08	0.11	0.010	0.01	0.2	19.5	0.90
B00293261	0	5	109.00	0.10	0.15	0.10	0.94	56.0	3	104.00	0.2	6.00	1.18	0.83	0.10	0.20	0.210	0.03	0.2	26.9	1.10
B00293262	0	5	100.00	0.19	0.44	0.72	0.02	89.4	2	109.00	0.2	6.50	0.67	1.27	0.13	0.14	0.050	0.00	0.2	35.5	9.90
Q930101	0.02	3.30	44.5	<0.005	<10	93	0.22	<0.01	7.02	0.39	16.53	40.1	146	0.14	10.6	5.82	6.64	0.10	<0.02	<0.01	0.013
Q930102	0.05	0.96	11.2	<0.005	<10	145	0.15	0.08	9.22	0.29	53.55	9.5	68	1.23	12.0	2.03	2.55	0.10	0.10	<0.01	0.008
Q930103	0.06	0.61	16.7	<0.005	<10	136	0.13	0.09	9.63	0.38	32.16	11.6	80	0.46	14.1	2.21	1.50	0.07	0.06	<0.01	0.006
Q930104	0.32	0.27	0.6	<0.005	<10	239	0.19	0.44	1.20	0.2	31.5	8.1	102	0.31	26.0	1.47	0.96	0.09	0.08	<0.01	<0.005
Q930105	0.02	0.72	0.5	<0.005	<10	132	0.34	0.03	2.63	0.16	149.38	5.3	60	2.15	8.3	2.88	3.26	0.26	0.06	<0.01	0.015
Q930106	0.03	0.75	3.5	<0.005	<10	125	0.13	0.04	7.80	0.37	50.47	8.8	50	0.29	14.5	2.58	1.90	0.10	0.08	<0.01	0.006
Q930107	0.23	0.47	0.7	<0.005	<10	144	0.18	0.03	5.33	0.16	81.23	8.7	61	0.18	30.6	2.76	1.47	0.15	0.06	<0.01	0.006
Q930108	0.39	0.24	0.3	<0.005	<10	241	0.16	0.37	1.02	0.59	21.31	4.8	97	0.34	13.3	1.11	0.79	0.07	0.07	<0.01	0.006
Q930109	0.03	0.85	6.7	<0.005	<10	166	0.22	0.10	9.52	0.45	31.19	6.2	44	0.47	1.8	2.02	2.19	0.07	0.06	<0.01	0.006
Q930110	0.04	1.13	14.2	<0.005	<10	141	0.26	0.02	2.37	0.39	67.88	17.5	40	0.29	32.1	2.29	3.06	0.14	0.19	<0.01	0.009
Q930111	0.18	0.26	50.8	<0.005	<10	152	0.21	0.22	1.10	0.24	32.78	6.5	111	0.32	15.6	1.30	0.97	0.09	0.09	<0.01	0.005
Q930112	0.05	0.30	<0.1	<0.005	<10	75	0.21	0.14	1.61	0.05	37.14	3.6	47	0.13	4.5	0.84	1.14	0.10	0.11	<0.01	0.006
Q930113	0.24	3.14	300.9	<0.005	<10	258	0.37	0.03	2.07	0.23	3.6	36.7	238	1.19	56.4	4.87	5.20	0.16	0.02	<0.01	0.006
Q930114	0.55	0.25	242.8	0.019	<10	120	0.14	0.53	0.85	0.14	71.88	2.6	80	0.17	48.4	0.72	1.00	0.12	0.05	0.13	<0.005
Q930115	0.20	0.23	68.2	<0.005	12	44	0.15	0.46	0.52	0.03	82.53	1.5	52	0.08	6.7	0.95	1.23	0.16	0.09	0.05	<0.005
Q930116	0.06	0.38	1.5	<0.005	<10	86	0.27	0.05	2.08	0.1	49.57	3.6	61	0.41	6.4	0.82	1.38	0.10	0.08	<0.01	0.007
Q930117	0.36	0.28	5.8	<0.005	<10	61	0.24	1.19	1.12	0.15	19.78	6.2	45	0.27	12.0	2.64	0.91	0.08	0.08	0.01	0.005
Q930118	<0.01	0.37	<0.1	<0.005	<10	91	0.30	0.04	2.81	0.17	65.64	3.7	41	0.91	5.4	1.58	1.34	0.14	0.06	<0.01	0.008
Q930119	0.11	0.31	3.4	<0.005	<10	101	0.15	0.39	2.14	0.18	33.53	5.0	49	0.35	9.0	1.96	1.04	0.08	0.12	<0.01	0.009
Q930120	0.08	0.46	0.9	<0.005	<10	141	0.35	0.29	1.56	0.15	104.82	4.0	53	0.99	4.1	1.61	1.90	0.24	0.10	<0.01	0.011
Q930121	0.11	0.31	0.2	<0.005	<10	1704	0.26	0.13	1.34	0.06	46.71	2.0	54	0.72	11.8	0.66	1.04	0.09	0.07	<0.01	<0.005
Q930122	0.61	0.22	13.8	0.006	<10	170	0.15	0.34	3.26	0.19	89.48	2.0	56	0.25	10.1	1.01	1.14	0.15	0.18	0.03	<0.005
Q930123	1.20	0.15	76.8	<0.005	<10	51	0.08	0.78	0.24	25.87	8.26	1.0	108	0.09	44.0	2.94	0.53	0.09	0.10	1.37	0.103
Q930124	0.11	0.44	0.2	<0.005	<10	92	0.28	0.24	1.98	0.05	45.68	3.4	57	1.23	5.1	1.76	1.60	0.10	0.15	<0.01	0.011
Q930125	0.11	0.18	2.2	<0.005	<10	120	0.23	0.27	0.44	0.02	54.19	1.5	77	0.22	3.3	0.79	1.10	0.12	0.30	<0.01	0.005

BMC Sample ID	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)
	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.2**	**0.1**	**0.01**	**5**	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.2**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**	**0.2**	**0.2**	**0.01**	**0.01**
B00264443	0.29	88.4	2.3	0.08	631	0.89	0.01	1.89	7.1	170	8.1	11.1	0.002	0.06	0.15	0.5	<0.2	<0.2	231.9	<0.01	0.03
B00264444	0.39	66.0	1.7	0.03	67	3.67	0.01	1.49	5.8	246	63.1	13.5	0.001	0.70	0.16	0.6	0.4	<0.2	15.6	<0.01	0.01
B00264445	0.38	10.5	28.3	3.29	529	0.65	0.01	<0.05	59.3	565	4.1	28.9	0.001	<0.01	0.06	9.5	0.2	<0.2	100.8	<0.01	0.01
B00264446	0.30	13.8	2.2	0.19	117	2.62	0.01	0.10	3.3	290	17.8	11.9	<0.001	0.61	0.22	0.6	1.8	<0.2	13	<0.01	<0.01
B00264447	0.40	20.3	8.9	1.16	576	2.04	0.02	0.14	7.3	668	4.1	23.6	<0.001	0.40	0.07	2.9	0.5	<0.2	111.4	<0.01	0.01
B00264448	0.55	18.1	7.3	0.82	646	2.36	0.02	0.31	8.3	604	6.1	21.3	<0.001	0.70	<0.05	2.2	1.7	<0.2	127.9	<0.01	0.03
B00264449	0.25	24.7	2.6	0.62	550	1.72	0.04	0.05	4.5	736	3.0	10.9	<0.001	0.32	<0.05	2.0	1.4	<0.2	74.1	<0.01	0.02
B00264450	0.30	22.8	4.5	0.42	517	2.26	0.02	0.24	7.6	694	291.4	11.2	<0.001	0.69	<0.05	1.1	4.1	<0.2	44.5	<0.01	0.04
B00264451	0.43	16.0	5.2	0.16	378	3.97	0.02	0.32	4.1	404	4.0	18.5	0.001	0.86	<0.05	1.0	1.4	<0.2	30.5	<0.01	<0.01
B00264452	0.21	17.6	1.7	1.25	886	4.42	0.02	<0.05	2.5	123	30.5	11.2	0.001	0.06	0.86	0.6	3.1	<0.2	75.1	<0.01	0.03
B00264453	0.30	16.8	5.9	0.35	692	5.94	0.03	0.23	1.6	30	60.8	12.2	0.001	0.17	2.36	0.6	5.8	0.7	5.5	<0.01	<0.01
B00264454	0.30	22.8	4.2	0.50	534	4.73	0.03	0.13	1.6	108	26.4	13.0	0.001	0.08	1.07	0.7	2.4	0.7	10.1	<0.01	<0.01
B00264455	0.33	18.3	2.3	0.48	445	2.75	0.03	0.18	6.7	809	11.3	12.6	<0.001	1.17	0.86	1.0	<0.2	0.4	47.8	<0.01	<0.01
B00264456	0.3	12.4	1.60	0	397.00	1.70	0.02	0.1	4	695.0	11.4	8.500	<0.001	1.1	0.3	0.8	<0.2	0.2	30.9	<0.01	<0.01
B00264457	0.0	26.8	2.80	0	57.00	4.42	<0.01	0.1	2	<10	12.9	17.500	0.00	<0.01	0.6	0.6	<0.2	0.3	1.8	<0.01	0.0
B00264458	0.3	11.4	1.20	1	227.00	2.67	0.01	0.1	3	277.0	15.9	9.400	<0.001	0.12	0.2	0.5	1	0.3	37.3	<0.01	<0.01
B00264459	0.3	8.3	1.30	0	225.00	2.77	0.02	0.2	3	259.0	45.5	13.000	<0.001	2.28	1.7	0.6	1.4	0.2	21.3	<0.01	<0.01
B00293251	0	174.00	1.97	0.01	0.1	5	163.0	53.0	6.900	0.00	0.86	0.9	0.4	0.1	0.1	41.1	0.005	0.0	18.2	0.0025	0.19
B00293252	0	317.00	4.35	0.01	1.5	5	168.0	59.4	17.600	0.00	1.78	2.1	0.4	0.1	0.4	19.7	0.005	0.0	26.3	0.006	0.23
B00293253	0	580.00	2.26	0.01	1.2	2	158.0	94.6	21.600	0.00	0.76	1.0	0.3	0.1	0.3	59.2	0.01	0.0	21	0.005	0.27
B00293254	0	35.00	2.16	0.02	0.3	3	190.0	16.2	11.200	0.00	1.08	0.6	0.4	0.1	0.1	15.3	0.005	0.0	31	0.0025	0.38
B00293255	0	175.00	3.05	0.01	0.8	5	126.0	85.0	7.700	0.00	0.93	1.9	0.4	0.1	0.1	30.3	0.005	0.0	27.2	0.0025	0.30
B00293256	0	224.00	4.31	0.01	1.6	3	165.0	159.7	10.500	0.00	0.58	9.1	0.3	1	0.2	28.1	0.005	0.0	24.2	0.006	1.02
B00293257	0	160.00	2.50	0.01	0.9	3	171.0	6.7	8.500	0.00	0.53	1.1	0.4	1.1	0.3	18.7	0.005	0.0	31.6	0.0025	0.54
B00293258	0	41.00	13.11	0.01	1.2	5	245.0	10.6	11.900	0.00	0.97	1.3	0.3	0.1	0.1	9.6	0.005	0.0	28.3	0.007	0.71
B00293259	0	925.00	3.22	0.01	0.4	2	154.0	32.3	26.600	0.00	0.2	0.8	0.4	0.1	0.1	128.2	0.01	0.0	27.1	0.006	0.26
B00293260	0	58.00	5.22	0.02	0.8	4	130.0	15.8	7.900	0.00	0.74	4.6	0.4	1	0.2	7.4	0.005	0.0	21.1	0.0025	0.37
B00293261	0	19.00	3.27	0.01	0.7	4	121.0	18.5	6.100	0.00	1.19	2.1	0.3	0.1	0.1	5.6	0.005	0.0	19.1	0.0025	0.13
B00293262	0	59.00	0.80	0.01	0.2	4	148.0	7.1	7.300	0.00	0.61	1.4	0.3	0.1	0.1	25.5	0.005	0.0	25.9	0.0025	0.29
Q930101	0.18	7.0	21.7	2.95	991	0.88	0.02	<0.05	67.8	572	10.2	6.5	0.002	0.14	0.68	4.7	0.9	<0.2	207.4	<0.01	0.02
Q930102	0.26	26.9	6.0	0.92	529	1.01	0.02	<0.05	21.4	336	16.0	13.9	0.001	0.15	0.14	1.5	0.7	<0.2	291.8	<0.01	0.02
Q930103	0.18	17.5	3.7	1.23	771	1.15	0.02	<0.05	31.2	422	16.2	7.0	0.002	0.13	0.15	1.3	<0.2	<0.2	277.3	<0.01	0.02
Q930104	0.21	17.9	0.9	0.28	247	13.64	0.02	0.05	72.7	808	43.7	7.3	0.023	0.71	1.01	1	2.7	<0.2	28	<0.01	0.03
Q930105	0.57	72.9	5.6	0.58	867	2.83	0.02	0.29	7.6	806	3.7	28.9	<0.001	0.24	0.11	1.6	<0.2	0.4	57.8	<0.01	0.02
Q930106	0.22	26.5	4.6	1.44	640	0.60	0.02	0.05	21.0	449	10.9	7.8	<0.001	0.13	<0.05	1.2	0.2	<0.2	207.7	<0.01	0.02
Q930107	0.29	41.2	2.4	1.4	634	0.62	0.02	<0.05	26.8	763	8.5	9.1	<0.001	0.31	0.05	1.3	0.5	<0.2	135.2	<0.01	0.02
Q930108	0.17	12.4	0.7	0.2	162	14.31	0.02	<0.05	57.2	684	53.8	6.0	0.018	0.42	0.32	0.8	1.6	<0.2	25.4	<0.01	0.02
Q930109	0.39	16.1	5.4	1.11	1479	0.80	0.02	0.07	13.5	430	19.2	21.1	0.002	<0.01	0.10	1.3	0.2	<0.2	324.7	<0.01	0.03
Q930110	0.31	37.0	7.8	1.14	513	0.63	0.02	<0.05	30.6	488	4.8	13.7	0.001	0.06	0.10	1.2	0.4	<0.2	71.1	<0.01	0.01
Q930111	0.20	18.6	0.9	0.29	244	11.39	0.02	<0.05	50.7	839	34.3	6.9	0.026	0.56	0.34	0.9	3.6	<0.2	26.1	<0.01	<0.01
Q930112	0.30	17.6	1.6	0.25	499	2.04	0.01	0.08	4.9	828	6.5	10.7	<0.001	0.18	0.12	0.9	<0.2	<0.2	22.9	<0.01	0.01
Q930113	0.39	1.6	24.3	3.48	636	0.46	0.03	0.13	70.9	551	27.2	18.0	<0.001	0.10	2.02	3	0.3	<0.2	27.8	<0.01	0.02
Q930114	0.17	33.1	0.9	0.04	185	4.20	0.02	0.47	2.9	51	16.3	6.5	<0.001	0.72	4.55	0.5	1.3	0.2	40	0.01	0.02
Q930115	0.19	38.7	1.4	0.02	115	3.00	0.01	1.10	2.2	66	15.8	7.6	0.002	1.05	1.54	0.5	0.4	0.3	18.3	0.01	0.02
Q930116	0.32	22.8	3.4	0.13	719	2.70	0.01	0.25	5.4	575	4.6	11.6	<0.001	0.09	0.22	0.9	0.6	0.2	39.1	<0.01	<0.01
Q930117	0.27	8.4	2.4	0.07	337	4.65	0.01	0.21	5.9	576	54.0	10.0	<0.001	2.37	0.07	0.7	0.2	<0.2	22.7	<0.01	<0.01
Q930118	0.36	31.3	2.6	0.18	953	2.07	0.01	0.07	5.5	786	5.0	15.9	<0.001	0.09	<0.05	1.1	0.4	0.2	65.1	<0.01	0.02
Q930119	0.22	15.5	1.4	0.43	551	2.23	0.02	0.11	6.3	726	8.9	6.6	<0.001	1.35	0.29	0.9	0.2	<0.2	54	<0.01	<0.01
Q930120	0.34	49.9	4.2	0.32	636	2.26	0.02	0.08	5.3	866	28.4	13.0	<0.001	0.22	0.26	1.5	0.3	0.2	43.9	<0.01	<0.01
Q930121	0.32	21.5	2.4	0.09	339	1.99	0.10	0.11	3.5	482	6.0	11.7	<0.001	0.19	<0.05	0.6	<0.2	<0.2	38.1	<0.01	<0.01
Q930122	0.18	42.6	1.6	0.05	553	2.28	0.02	0.61	4.4	215	85.3	8.3	0.003	0.84	3.74	0.5	1.9	0.4	121.2	0.01	0.01
Q930123	0.12	3.9	0.6	0.1	121	12.90	<0.01	0.11	31.5	21	215.8	4.5	0.024	3.43	14.92	0.5	16.6	0.3	4.1	<0.01	0.01
Q930124	0.36	21.0	3.2	0.4	692	2.09	0.02	0.21	4.8	593	13.2	13.0	<0.001	0.38	<0.05	1.3	0.2	0.3	46	<0.01	<0.01
Q930125	0.19	24.8	1.6	0.04	183	1.84	0.02	0.21	2.6	78	7.3	7.3	<0.001	0.64	0.31	0.6	<0.2	0.5	7.4	<0.01	<0.01

BMC Sample ID	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
B00264443	39.7	0.005	0.11	6.55	2	0.43	47.66	<2	5.3
B00264444	41.8	0.007	0.23	7.69	2	0.47	20.56	2	6.0
B00264445	1.5	0.056	0.33	<0.05	63	<0.05	18.48	48	<0.5
B00264446	17.0	<0.005	0.15	4.00	2	0.11	6.00	41	34.8
B00264447	6.5	0.015	0.29	0.85	5	0.10	11.96	35	21.2
B00264448	5.9	0.018	0.15	0.76	4	0.07	10.70	34	18.8
B00264449	8.9	<0.005	0.06	0.76	3	<0.05	9.79	15	12.8
B00264450	9.9	<0.005	0.1	2.57	3	0.24	8.23	1522	11.9
B00264451	8.8	0.008	0.1	2.33	4	0.14	6.98	18	11.8
B00264452	18.6	<0.005	2.78	3.53	2	0.09	8.83	562	32.0
B00264453	18.5	0.006	4.68	6.01	2	0.16	3.75	565	43.9
B00264454	24.8	<0.005	4.42	4.08	2	0.15	4.70	112	28.2
B00264455	8.4	<0.005	0.25	0.74	3	0.10	6.63	36	13.4
B00264456	5.8	<0.005	0.17	0.66	3.00	0.05	4.66	43.0	8.1
B00264457	27.2	<0.005	0.25	5.78	<1	0.14	7.36	3.0	41
B00264458	12.5	<0.005	0.08	4.56	2.00	0.10	4.72	25.0	19.5
B00264459	16.8	<0.005	0.14	4.71	2.00	0.16	5.44	1144.0	47.8
B00293251	1.85	1.00	0.09	7.48	575.0	21.1			
B00293252	4.21	2.00	0.62	14.61	41.0	9.1			
B00293253	2.61	2.00	0.68	16.21	24.0	4.2			
B00293254	2.25	2.00	0.11	10.29	10.0	17.2			
B00293255	4.49	1.00	0.19	11.55	47.0	20.4			
B00293256	4.88	2.00	0.48	18.02	69.0	5.7			
B00293257	4.91	1.00	0.07	14.21	24.0	10.2			
B00293258	4.51	2.00	0.37	15.67	11.0	16.9			
B00293259	2.38	2.00	0.30	11.52	45.0	15.8			
B00293260	3.28	2.00	0.14	8.78	25.0	5.9			
B00293261	2.94	1.00	0.26	9.13	189.0	9.5			
B00293262	1.56	2.00	0.07	9.46	6.0	7.1			
Q930101	0.99	0.014	0.05	0.6	56	0.09	19.69	233	1.0
Q930102	11.24	0.009	0.1	0.57	8	0.08	17.78	41	4.7
Q930103	6.8	<0.005	0.06	0.41	5	<0.05	19.27	42	2.6
Q930104	6.82	<0.005	0.09	6.94	29	0.12	6.56	44	3.4
Q930105	27.18	0.016	0.22	1.11	4	0.06	11.54	41	2.7
Q930106	11.21	0.005	0.06	0.84	6	<0.05	14.44	58	3.5
Q930107	16.21	<0.005	0.07	0.84	4	<0.05	8.52	46	2.9
Q930108	4.55	<0.005	0.07	4.33	28	0.05	5.45	113	3.1
Q930109	6.98	0.024	0.16	0.56	8	<0.05	22.36	34	2.2
Q930110	14.43	0.009	0.11	0.56	8	<0.05	5.68	144	8.5
Q930111	6.23	<0.005	0.07	4.34	29	0.13	6.20	39	3.6
Q930112	9.76	<0.005	0.08	1.18	2	0.10	8.68	9	4.6
Q930113	0.54	0.2	2.45	<0.05	56	0.08	3.08	98	0.6
Q930114	22.07	<0.005	0.24	4.09	1	0.28	11.04	8	1.6
Q930115	25.19	<0.005	0.2	3.58	<1	0.53	19.23	2	3.2
Q930116	12.37	<0.005	0.1	1.24	2	0.20	8.03	18	3.6
Q930117	13.03	<0.005	0.4	2.02	2	0.12	7.01	19	3.3
Q930118	17.33	<0.005	0.1	1.27	3	<0.05	12.59	34	2.9
Q930119	6.59	<0.005	0.22	0.73	2	0.11	6.51	37	5.2
Q930120	20.67	<0.005	0.14	0.83	3	<0.05	16.68	44	5.0
Q930121	11.33	<0.005	0.11	0.7	1	0.12	6.58	13	2.7
Q930122	33.16	<0.005	0.33	8.89	2	0.22	22.50	54	6.9
Q930123	5.35	<0.005	0.23	2.17	22	0.29	1.00	2938	3.4
Q930124	9.06	0.007	0.11	1.14	2	0.10	7.67	13	6.2
Q930125	22	<0.005	0.06	3.97	<1	0.12	5.12	4	9.1

BMC Sample ID	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.01**	**0.1**	**0.005**	**10**	**10**	**0.05**	**0.01**	**0.01**	**0.01**	**0.02**	**0.1**	**1**	**0.05**	**0.2**	**0.01**	**0.05**	**0.05**	**0.02**	**0.01**	**0.005**
Q930126	0.09	0.20	1.7	<0.005	<10	114	0.22	0.25	0.31	0.05	62.72	1.2	75	0.43	2.7	0.42	1.05	0.12	0.17	<0.01	<0.005
Q930127	2.24	4.37	787.7	<0.005	<10	1183	0.72	0.23	4.03	0.34	4.6	46.1	193	10.39	17.4	6.21	7.32	0.20	<0.02	<0.01	0.013
Q930128	0.55	3.18	91.1	<0.005	<10	881	0.42	0.04	3.55	0.27	4.51	42.9	265	1.62	48.5	4.84	7.02	0.18	0.03	0.03	0.012
Q930129	0.53	3.11	72.4	0.008	<10	1643	0.91	0.02	6.73	0.3	16.08	37.6	253	5.05	61.8	6.63	6.84	0.11	0.03	0.04	0.044
Q930130	0.27	2.90	80.6	0.006	<10	784	0.48	<0.01	1.16	0.13	3.27	43.0	245	1.15	37.5	3.85	5.02	0.18	0.03	<0.01	<0.005
Q930131	0.24	0.36	2.6	<0.005	<10	63	0.25	0.36	1.12	0.75	36.68	4.5	61	0.52	6.6	1.52	1.26	0.09	0.16	<0.01	0.008
Q930132	0.18	3.54	75.3	<0.005	<10	726	0.86	<0.01	2.46	0.09	3.29	39.9	189	6.91	19.4	4.53	4.42	0.19	0.03	<0.01	0.006
Q930133	0.35	2.39	85.9	0.005	<10	154	0.21	0.02	3.69	0.43	2.95	34.6	258	0.47	33.8	3.95	4.30	0.12	<0.02	<0.01	<0.005
Q930134	2.07	0.25	17.1	0.013	<10	170	0.14	0.55	0.13	0.35	71.73	1.6	76	0.22	13.0	1.15	1.25	0.16	0.21	0.06	0.007
Q930135	0.47	4.10	75.0	0.006	<10	1700	0.90	0.03	4.70	0.59	6.89	40.8	285	2.56	42.3	6.94	8.51	0.20	0.03	0.36	0.015
Q930136	0.67	0.25	50.8	0.008	<10	130	0.13	1.54	0.26	1.25	96.4	2.0	71	0.09	78.5	0.76	1.42	0.18	0.09	0.07	0.023
Q930137	0.40	4.45	59.8	<0.005	<10	1024	0.85	0.01	3.72	0.16	6.5	43.9	295	2.85	41.2	6.54	11.37	0.23	<0.02	<0.01	0.016
Q930138	0.28	0.23	13.1	<0.005	<10	81	0.14	0.52	0.95	0.47	49.52	1.3	54	0.08	43.8	0.79	0.92	0.09	0.12	0.03	0.007
Q930139	0.50	0.37	7.2	<0.005	<10	85	0.18	1.38	2.38	0.1	54.56	8.9	62	0.41	62.2	1.91	1.28	0.10	0.17	<0.01	0.011
Q930140	0.08	0.32	3.4	<0.005	<10	76	0.20	0.31	1.72	0.08	29.14	4.8	57	0.28	7.4	2.23	0.95	0.08	0.13	<0.01	0.008
Q930141	0.01	0.72	<0.1	<0.005	<10	123	0.35	0.01	2.52	0.17	37.64	4.3	57	1.66	5.5	2.38	2.51	0.10	0.09	<0.01	0.011
Q930142	0.21	0.90	0.2	<0.005	<10	88	0.34	0.56	1.58	0.14	79.51	4.8	70	0.85	6.4	2.77	2.94	0.15	0.14	<0.01	0.016
Q930143	0.28	0.26	4.6	<0.005	<10	330	0.12	0.18	1.35	0.06	79.48	1.6	74	0.33	3.2	0.47	1.37	0.15	0.20	0.03	<0.005
Q930144	3.61	0.22	266.9	0.013	<10	139	0.14	0.43	0.92	1.47	81.66	1.6	68	0.31	17.6	0.85	1.16	0.18	0.33	0.09	0.012
Q930145	0.38	3.60	42.9	<0.005	<10	1070	0.48	0.06	5.95	0.2	14.54	33.1	178	4.87	38.1	6.01	6.58	0.12	0.03	0.10	0.024
Q930146	1.65	0.22	338.3	0.026	<10	130	0.12	1.81	1.41	0.64	89.73	1.3	57	0.07	38.8	0.60	1.20	0.14	0.07	0.05	0.011
Q930147	0.14	3.46	646.7	<0.005	<10	911	0.65	<0.01	3.38	0.19	2.97	40.0	228	4.59	48.5	5.46	4.72	0.18	<0.02	0.01	0.006
Q930148	0.06	1.42	1.3	<0.005	<10	174	0.19	0.16	2.69	0.23	56.85	19.0	53	0.57	76.1	3.23	4.01	0.15	0.21	<0.01	0.007
Q930149	0.06	1.62	2.7	<0.005	<10	138	0.19	0.05	0.44	0.04	62.6	16.0	41	0.12	46.5	3.32	4.66	0.17	0.08	<0.01	<0.005
Q930150	0.07	1.06	2.2	<0.005	<10	121	0.17	0.10	0.99	0.06	63.3	13.4	49	0.75	36.2	3.29	3.37	0.16	0.05	<0.01	0.006
Q930151	0.09	1.95	0.5	<0.005	<10	195	0.26	0.06	0.88	0.1	61.52	13.2	54	0.12	141.5	4.49	5.44	0.17	0.09	<0.01	0.006
Q930152	0.17	1.88	1.6	<0.005	<10	110	0.17	0.24	4.40	0.45	62.67	23.1	56	0.29	114.9	4.17	5.47	0.14	0.07	<0.01	0.011
Q930153	0.09	1.42	5.1	<0.005	<10	168	0.28	0.03	2.45	0.11	71.38	10.8	47	0.46	22.2	3.18	3.69	0.14	0.06	<0.01	0.008
Q930154	0.16	0.27	0.5	<0.005	<10	182	0.16	0.19	4.83	0.37	56.51	5.0	50	0.19	22.4	2.06	1.02	0.11	0.07	<0.01	0.006
Q930155	0.09	0.78	8.8	<0.005	<10	260	0.24	0.09	8.35	0.3	53.29	9.7	60	0.85	15.4	2.75	2.38	0.10	0.08	<0.01	0.011
Q930156	0.07	0.23	1.6	<0.005	<10	268	0.09	0.06	18.32	0.55	19.76	4.5	39	0.24	12.5	1.86	0.65	0.05	0.04	<0.01	0.006
Q930157	2.78	2.63	1.1	<0.005	<10	125	0.18	3.78	3.12	36.58	75.34	37.4	66	0.38	689.1	8.37	7.02	0.20	0.05	0.12	0.219
Q930158	0.39	0.35	65.1	<0.005	<10	201	0.19	0.67	8.18	0.32	74.89	22.4	29	0.14	29.9	2.37	1.14	0.12	0.07	<0.01	0.006
Q930159	0.54	1.77	13.4	<0.005	12	155	0.25	0.97	4.93	0.32	54.3	21.1	76	0.51	66.7	3.94	4.55	0.12	0.10	<0.01	0.012
Q930160	0.10	0.52	4.1	<0.005	<10	185	0.24	0.03	0.86	0.06	40.39	11.7	68	0.27	29.9	2.13	1.65	0.11	0.08	<0.01	0.006
Q930161	0.12	0.31	1.2	<0.005	10	135	0.27	0.05	2.74	1.61	74.85	13.1	70	0.28	38.1	2.83	1.35	0.15	0.09	<0.01	0.014
Q930162	0.14	3.17	0.4	<0.005	<10	69	0.19	0.02	5.29	0.22	59.45	31.5	54	1.12	22.1	8.46	13.53	0.18	0.03	<0.01	0.057
Q930163	0.15	3.39	0.5	<0.005	16	98	0.44	0.02	5.03	0.36	118.2	24.9	27	0.41	29.1	10.10	11.66	0.30	0.03	0.01	0.098
Q930164	0.09	0.57	9.3	<0.005	11	229	0.17	0.11	9.88	0.27	58.46	7.0	38	0.56	8.4	1.92	1.62	0.09	0.06	<0.01	0.006
Q930165	0.11	0.32	8.3	<0.005	<10	63	0.18	0.16	4.24	0.11	20.73	2.1	95	0.12	3.1	1.38	0.84	0.05	0.22	0.01	0.009
Q930166	0.12	0.71	1.2	<0.005	<10	85	0.28	0.21	2.16	0.13	47.39	3.4	66	0.98	7.0	2.05	1.89	0.10	0.09	<0.01	0.009
Q930167	0.61	0.50	0.3	<0.005	<10	231	0.23	0.42	1.97	1	51.01	7.3	61	0.42	26.5	2.48	1.19	0.11	0.12	0.01	0.009
Q930168	0.08	0.55	3.0	<0.005	<10	108	0.19	0.07	6.50	0.27	58.31	8.8	44	0.29	12.5	1.94	1.50	0.10	0.16	<0.01	0.006
Q930169	0.06	1.19	6.0	<0.005	<10	99	0.19	0.05	8.21	0.23	59.11	10.8	34	0.64	8.4	2.80	3.05	0.11	0.12	<0.01	0.007
Q930170	0.65	1.47	<0.1	<0.005	13	412	0.22	0.93	2.16	0.43	46.98	16.2	79	1.79	271.1	3.80	3.86	0.17	0.06	<0.01	0.016
Q930171	0.18	1.11	1.7	<0.005	<10	204	0.19	0.06	1.28	0.33	44.58	11.6	120	0.36	142.3	2.33	2.91	0.12	0.12	<0.01	0.006
Q930172	0.13	1.08	0.4	<0.005	<10	93	0.17	0.11	6.41	0.22	54.07	9.5	37	0.16	48.5	2.79	2.73	0.12	0.06	<0.01	0.006
Q930173	0.20	1.85	7.1	<0.005	<10	112	0.24	0.05	0.13	0.02	124.99	20.4	25	0.20	60.9	4.72	5.81	0.28	0.12	<0.01	0.010
Q930174	0.19	0.20	<0.1	<0.005	12	120	0.12	0.03	12.03	0.3	34.23	5.7	36	0.14	9.6	1.90	0.60	0.09	0.03	<0.01	<0.005
Q930175	0.34	0.74	1.2	<0.005	<10	104	0.16	0.67	5.76	0.31	48.57	10.5	38	0.47	80.1	2.66	1.81	0.10	0.15	<0.01	0.006
Q930176	0.17	0.31	3.0	<0.005	14	253	0.24	0.11	0.42	0.68	40.88	8.0	72	0.40	30.9	1.70	1.14	0.12	0.14	<0.01	0.008
Q930177	1.95	3.41	6.9	0.005	<10	1842	0.25	0.04	7.48	0.28	16.45	35.1	163	22.05	49.0	6.10	7.30	0.18	<0.02	0.03	0.027
Q930178	0.07	0.32	0.7	<0.005	<10	81	0.20	0.19	1.25	0.07	40.86	4.6	48	0.18	9.7	1.01	1.09	0.08	0.13	<0.01	0.007
Q930179	0.94	3.48	53.7	0.01	<10	4076	0.39	0.05	4.61	0.38	5.74	38.9	165	11.22	30.5	5.10	7.03	0.18	0.03	0.04	0.013

BMC Sample ID	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)
	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.2**	**0.1**	**0.01**	**5**	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.2**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**	**0.2**	**0.2**	**0.01**	**0.01**
Q930126	0.21	27.8	1.8	0.03	87	1.47	0.02	0.41	2.5	104	10.6	7.7	<0.001	0.30	0.09	0.5	0.2	0.4	6.3	<0.01	<0.01
Q930127	3.74	2.1	45.8	4.08	940	0.76	0.12	0.09	82.5	616	219.3	188.3	0.001	0.09	1.02	6.4	0.8	0.2	41.9	<0.01	0.02
Q930128	0.57	2.0	26.8	3.86	758	0.54	0.08	0.16	87.6	565	30.5	23.9	<0.001	0.02	1.88	6.6	0.3	0.2	77.1	<0.01	0.01
Q930129	1.02	6.9	26.2	3.53	1225	0.59	0.12	0.05	75.5	527	18.4	42.6	0.002	0.07	7.04	24.9	0.5	0.3	271.8	<0.01	0.02
Q930130	0.75	1.4	25.5	3.05	544	0.45	0.07	0.15	80.0	595	4.1	32.6	<0.001	0.01	0.77	2.4	0.2	<0.2	18.9	<0.01	0.01
Q930131	0.31	16.7	2.4	0.14	525	2.73	0.02	0.20	5.4	623	80.6	11.5	<0.001	0.85	0.08	0.9	0.2	0.3	27.8	<0.01	<0.01
Q930132	2.71	1.4	42.3	3.56	655	0.55	0.09	0.09	71.8	595	1.9	118.5	<0.001	0.02	1.11	4.7	0.3	<0.2	32.5	<0.01	0.01
Q930133	0.24	1.3	13.3	2.25	761	0.64	0.03	0.15	46.8	518	16.1	9.5	<0.001	0.02	0.88	2.6	0.3	<0.2	37.2	<0.01	0.01
Q930134	0.18	35.1	1.5	0.03	27	3.11	0.02	0.11	2.6	83	106.3	5.9	<0.001	1.25	6.29	0.4	1.1	0.4	6.9	<0.01	<0.01
Q930135	0.60	3.0	32.4	3.94	1150	0.63	0.13	0.08	93.2	580	25.3	30.3	0.001	0.08	1.14	5.3	1.4	0.2	78	<0.01	0.01
Q930136	0.18	44.2	1.3	0.03	56	3.59	0.02	0.85	2.5	74	70.1	6.8	0.002	0.77	5.52	0.5	2.7	0.4	8	0.01	<0.01
Q930137	1.10	2.8	39.2	4.78	868	0.48	0.09	0.08	88.4	493	7.4	53.6	0.001	0.03	0.60	12.2	0.6	0.2	56.7	<0.01	0.01
Q930138	0.20	23.1	0.9	0.02	214	4.51	0.01	0.37	1.9	30	25.5	8.8	<0.001	0.79	3.74	0.4	4.5	0.3	39.9	<0.01	<0.01
Q930139	0.21	25.2	1.7	0.57	520	2.39	0.02	0.10	6.0	757	51.5	6.7	<0.001	1.07	0.36	1.3	0.6	0.4	56.6	<0.01	<0.01
Q930140	0.29	13.1	1.7	0.42	811	2.34	0.01	0.12	5.6	745	11.8	9.6	<0.001	1.10	0.17	1.2	<0.2	0.2	39.1	<0.01	<0.01
Q930141	0.66	17.8	7.3	0.37	1011	2.30	0.02	0.33	5.6	673	3.1	35.1	<0.001	0.38	0.06	1.4	0.3	0.4	56.3	<0.01	0.02
Q930142	0.40	37.0	7.4	0.59	922	2.71	0.02	0.32	6.5	797	28.7	14.4	<0.001	0.26	2.02	1.8	0.6	0.5	32.8	<0.01	<0.01
Q930143	0.20	37.9	2.1	0.05	471	3.55	0.03	0.09	2.9	136	11.6	7.3	<0.001	0.23	0.59	0.5	<0.2	0.3	51.1	<0.01	<0.01
Q930144	0.17	39.6	1.3	0.04	188	2.49	0.02	0.06	2.5	68	236.6	6.0	0.001	0.89	15.10	0.5	21.1	0.3	16.2	<0.01	<0.01
Q930145	1.30	6.2	35.8	3.36	1182	0.57	0.09	<0.05	79.4	556	26.9	63.3	0.001	0.16	2.70	7.6	0.9	0.2	112.6	<0.01	0.01
Q930146	0.17	41.3	0.7	0.02	238	3.05	0.02	0.91	2.6	67	61.3	6.1	0.002	0.59	12.88	0.4	4.1	0.3	32.9	0.01	<0.01
Q930147	2.26	1.3	32.1	3.29	867	0.56	0.08	0.09	74.8	578	6.0	99.2	<0.001	0.13	1.09	3.8	0.3	<0.2	37.6	<0.01	0.01
Q930148	0.54	31.9	8.4	1.09	708	6.20	0.03	<0.05	43.4	1000	3.7	30.0	0.008	0.93	0.10	1.5	2.2	<0.2	84.6	<0.01	0.02
Q930149	0.21	34.5	11.9	1.3	363	0.69	0.02	<0.05	37.8	462	1.0	7.0	0.002	0.31	<0.05	1.2	0.7	<0.2	18.8	<0.01	0.01
Q930150	0.20	33.5	6.8	1.08	329	0.45	0.02	<0.05	28.9	373	2.7	8.0	<0.001	0.20	<0.05	1.3	0.6	<0.2	44.1	<0.01	0.01
Q930151	0.23	33.8	13.3	1.44	438	6.70	0.02	<0.05	26.7	633	1.9	7.6	0.009	0.32	0.05	1.5	0.4	<0.2	27.2	<0.01	0.01
Q930152	0.19	34.0	12.3	1.44	1196	0.57	0.02	<0.05	38.6	507	8.4	7.0	0.002	0.60	<0.05	1.6	0.5	<0.2	120.6	<0.01	0.02
Q930153	0.24	37.6	9.1	1.71	474	0.61	0.02	<0.05	26.4	356	3.9	9.3	0.001	0.29	0.22	1.4	1	<0.2	81.5	<0.01	0.01
Q930154	0.23	28.8	1.0	0.95	843	1.02	0.02	<0.05	14.2	537	14.1	7.5	0.001	0.37	0.12	1.1	1.1	<0.2	110.1	<0.01	0.01
Q930155	0.20	25.5	4.4	1.12	739	0.75	0.03	<0.05	21.9	536	13.1	8.2	0.002	0.21	<0.05	1.8	0.8	<0.2	251.3	<0.01	0.02
Q930156	0.11	10.0	1.0	0.8	1172	0.34	0.03	<0.05	15.7	165	27.4	4.1	0.002	0.25	0.10	1.3	1	<0.2	609.2	<0.01	0.03
Q930157	0.13	37.5	14.8	2.3	1074	24.73	0.02	<0.05	82.2	1769	328.3	5.1	0.009	2.15	0.06	3.9	8.7	<0.2	101.9	<0.01	0.05
Q930158	0.27	40.0	1.6	1.58	911	0.95	0.03	<0.05	31.2	645	47.4	9.2	0.001	0.21	0.19	1.3	0.9	<0.2	261.4	<0.01	0.04
Q930159	0.20	26.6	10.5	1.48	749	1.69	0.02	<0.05	42.7	482	59.1	7.8	0.002	0.41	<0.05	2	1.4	<0.2	126.7	<0.01	0.03
Q930160	0.26	19.1	2.9	0.45	172	0.86	0.02	0.12	35.6	760	1.9	9.1	0.001	0.33	0.07	1.1	0.7	<0.2	22.3	<0.01	0.02
Q930161	0.28	36.6	1.1	0.71	620	4.75	0.02	<0.05	39.5	643	3.7	8.8	0.006	0.68	6.10	1.9	3.6	0.3	63	<0.01	0.02
Q930162	0.12	25.4	18.7	2	899	2.07	0.02	<0.05	12.1	1964	9.7	6.0	0.002	0.76	<0.05	9.8	0.2	0.3	172.1	<0.01	0.02
Q930163	0.06	50.1	26.6	1.98	855	1.92	0.02	<0.05	9.4	5184	8.2	2.6	0.004	0.27	1.76	16.7	1	0.2	118.9	0.01	0.02
Q930164	0.24	28.9	3.2	1.28	618	0.44	0.03	<0.05	18.9	359	16.1	9.9	<0.001	0.09	0.13	1.3	0.5	<0.2	353.8	<0.01	0.02
Q930165	0.20	9.2	2.2	0.5	1341	2.43	0.01	0.06	4.3	58	11.3	5.9	<0.001	0.76	0.57	0.7	0.3	0.3	97.4	<0.01	0.01
Q930166	0.33	22.0	4.7	0.47	776	2.49	0.02	0.17	4.9	836	14.1	14.1	<0.001	0.19	0.54	1	<0.2	0.2	39.9	<0.01	0.01
Q930167	0.20	25.2	3.9	0.74	427	1.85	0.03	<0.05	27.6	774	60.5	7.2	0.001	0.60	3.63	1	1.5	<0.2	51	<0.01	0.03
Q930168	0.26	30.0	3.3	1.08	781	0.47	0.02	<0.05	17.5	371	14.9	10.2	0.002	0.05	0.11	1.1	0.5	<0.2	216.2	<0.01	0.02
Q930169	0.27	31.0	7.3	1.35	585	0.31	0.02	0.06	24.6	531	14.0	12.5	0.001	0.07	<0.05	1.3	0.5	<0.2	284.6	<0.01	0.02
Q930170	0.90	23.1	8.4	0.94	722	2.88	0.04	0.46	44.4	2032	15.2	44.4	0.004	0.36	0.42	2.6	3	0.4	87.2	<0.01	0.01
Q930171	0.30	24.5	6.3	0.74	371	7.37	0.03	0.16	33.4	698	6.1	12.6	0.011	0.11	<0.05	1.2	0.5	0.2	46.4	<0.01	<0.01
Q930172	0.22	27.5	6.2	1.35	636	0.76	0.02	<0.05	26.6	500	8.1	7.4	0.001	0.28	<0.05	1.2	0.5	<0.2	192.6	<0.01	0.01
Q930173	0.23	56.6	11.1	0.9	291	1.80	0.02	0.07	46.3	519	1.1	8.2	0.001	0.43	<0.05	1.7	0.4	<0.2	11.7	<0.01	0.06
Q930174	0.16	17.0	0.9	1.09	549	0.97	0.02	<0.05	18.6	328	17.5	5.5	0.003	0.55	0.21	1.1	1.6	<0.2	267.5	<0.01	0.04
Q930175	0.19	25.7	4.4	0.78	1048	0.97	0.02	<0.05	24.1	367	28.4	8.0	0.001	<0.01	0.16	1.2	0.5	<0.2	134.2	<0.01	0.03
Q930176	0.21	22.2	1.3	0.12	139	7.80	0.03	<0.05	58.4	1170	11.6	8.0	0.003	0.11	0.55	1	1.2	<0.2	16.8	<0.01	0.02
Q930177	2.81	7.0	42.7	3.31	1156	2.24	0.14	0.16	69.1	568	259.4	215.1	0.002	0.09	2.29	12.9	0.6	0.4	351.6	<0.01	0.01
Q930178	0.28	18.5	1.2	0.22	334	2.69	0.02	0.11	5.5	803	8.2	9.1	<0.001	0.35	0.05	1	1.1	0.2	22.2	<0.01	<0.01
Q930179	2.65	2.5	37.1	3.79	883	0.88	0.29	0.12	72.8	591	133.4	138.1	0.001	0.08	2.35	8.3	0.9	0.4	92.3	<0.01	<0.01

BMC Sample ID	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
Q930126	24.04	<0.005	0.05	3.09	<1	0.12	7.67	9	5.1
Q930127	0.47	0.387	14.95	0.58	115	1.07	4.83	179	<0.5
Q930128	0.33	0.259	2.51	<0.05	86	0.19	4.69	87	0.7
Q930129	0.94	0.126	2.85	0.11	107	0.06	17.50	91	<0.5
Q930130	<0.2	0.258	2.81	<0.05	66	0.13	2.95	126	0.7
Q930131	10.16	0.006	0.09	1.67	2	0.09	6.69	98	6.5
Q930132	<0.2	0.369	4.59	0.05	78	0.23	3.20	88	0.8
Q930133	<0.2	0.251	0.71	<0.05	47	0.12	2.90	117	<0.5
Q930134	28.93	<0.005	0.76	3.81	<1	0.07	10.72	48	7.3
Q930135	1.12	0.192	4.24	0.99	100	0.06	5.25	171	0.7
Q930136	27.91	<0.005	0.33	5.83	<1	0.77	16.85	181	2.9
Q930137	0.5	0.214	5.71	0.07	136	0.05	7.24	91	0.5
Q930138	21.11	<0.005	0.23	4.68	<1	0.21	6.05	48	4.3
Q930139	11.14	<0.005	0.11	1.28	3	0.12	10.23	14	7.0
Q930140	5.2	<0.005	0.1	0.43	2	0.08	6.23	13	5.3
Q930141	12.95	0.037	0.27	1.24	4	0.08	10.99	33	3.9
Q930142	14.4	0.015	0.18	0.61	4	0.11	8.35	51	5.9
Q930143	21.53	<0.005	1.59	1.57	1	0.10	7.42	17	7.4
Q930144	28.72	<0.005	0.83	3.01	<1	0.06	11.35	196	13.8
Q930145	1.57	0.113	6.91	4.55	77	<0.05	14.07	281	1.1
Q930146	22.97	<0.005	0.31	3.69	<1	0.79	21.20	87	2.2
Q930147	0.4	0.318	4.08	<0.05	71	0.25	2.64	117	0.5
Q930148	12.45	0.042	0.22	3.89	24	0.06	16.89	66	8.3
Q930149	12.54	<0.005	0.04	1.2	12	<0.05	7.13	110	3.2
Q930150	14.05	<0.005	0.05	1.29	9	<0.05	9.79	101	2.2
Q930151	13.31	<0.005	0.06	2.05	30	<0.05	9.49	172	3.8
Q930152	12.7	0.009	0.05	1.04	16	<0.05	21.18	72	3.1
Q930153	13.64	<0.005	0.08	0.69	8	0.08	7.33	104	3.1
Q930154	9.89	<0.005	0.06	0.77	4	0.07	13.10	57	3.0
Q930155	10.65	<0.005	0.05	0.89	10	0.11	17.92	66	4.1
Q930156	3	<0.005	0.03	0.61	4	0.06	29.85	26	1.5
Q930157	6.96	0.006	0.04	4.66	56	0.08	17.34	5619	4.1
Q930158	13.97	<0.005	0.07	1.1	6	0.10	8.71	25	3.0
Q930159	10.25	<0.005	0.06	1.1	21	0.08	13.01	134	4.8
Q930160	9.29	<0.005	0.09	2.02	11	0.08	7.08	107	3.5
Q930161	12.6	<0.005	0.08	1.3	28	0.12	6.40	157	4.2
Q930162	5.85	0.009	0.07	0.34	159	0.10	24.82	305	3.0
Q930163	6.67	0.007	0.05	0.33	113	0.12	51.32	193	0.6
Q930164	10.59	0.006	0.08	0.69	5	0.06	13.72	29	2.6
Q930165	14.01	<0.005	0.15	3.29	1	0.08	10.71	7	6.5
Q930166	13.24	0.007	0.14	1.08	3	0.18	7.78	31	4.1
Q930167	10.11	<0.005	0.09	2.12	9	0.09	5.91	143	5.2
Q930168	10.8	0.007	0.08	0.5	5	0.05	13.07	53	7.5
Q930169	11.28	0.013	0.12	1	9	0.06	16.46	76	4.6
Q930170	5.98	0.111	0.4	1.72	59	0.12	17.00	168	6.5
Q930171	7.52	0.015	0.1	1.64	28	0.09	8.28	161	5.1
Q930172	10.57	<0.005	0.05	1.13	7	0.37	8.10	65	2.4
Q930173	20.28	<0.005	0.06	2.86	11	0.10	7.93	107	4.6
Q930174	6.55	<0.005	0.09	1.31	3	0.10	25.44	32	1.4
Q930175	7.77	0.005	0.06	0.44	7	0.06	11.37	69	7.2
Q930176	6.65	<0.005	0.08	1.88	27	0.10	7.32	180	7.0
Q930177	1.33	0.339	70.23	0.06	108	0.08	11.42	177	<0.5
Q930178	7.73	<0.005	0.19	0.75	2	0.09	6.15	14	4.9
Q930179	0.6	0.409	47.35	0.69	102	0.17	5.61	268	0.9

BMC Sample ID	Weight of dry sample used	Volume of DI water used	pH	EC	Acidity (to pH 8.3)	Alkalinity (to pH 4.5)	Dissolved Sulphate (SO_4)	Fluoride (F)	Dissolved Hardness ($CaCO_3$)	Dissolved Aluminum (Al)	Dissolved Antimony (Sb)	Dissolved Arsenic (As)	Dissolved Barium (Ba)	Dissolved Beryllium (Be)	Dissolved Bismuth (Bi)	Dissolved Boron (B)	Dissolved Cadmium (Cd)	Dissolved Chromium (Cr)	Dissolved Cobalt (Co)	Dissolved Copper (Cu)	Dissolved Iron (Fe)	Dissolved Lead (Pb)	Dissolved Lithium (Li)	Dissolved Manganese (Mn)	Dissolved Mercury (Hg)
	g	mL	pH units	µS/cm	mg $CaCO_3$/L	mg $CaCO_3$/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit:	**0.01**	**0.5**	**0.01**	**1**	**0.5**	**0.5**	**1**	**0.01**	**0.50**	**0.0010**	**0.000020**	**0.000020**	**0.00010**	**0.000010**	**0.0000050**	**0.010**	**0.0000050**	**0.00010**	**0.0000050**	**0.00020**	**0.0010**	**0.000020**	**0.00050**	**0.00020**	**0.00001**
B00264201	250	750	8.0	66	2.0	19.5	6		20.3	0.328	0.00450	0.00033	<0.0010	<0.00010	<0.0010	<0.050	<0.000010	<0.0010	<0.00050	0.00135	0.0245	<0.00020	<0.0050	0.0032	<0.000050
B00264205	250	750	9.1	67	<0.5	25.5	<1		16.3	0.504	0.00071	0.00034	0.0063	<0.00010	<0.0010	<0.050	<0.000010	<0.0010	<0.00050	0.00209	0.0262	<0.00020	<0.0050	0.0090	<0.000050
B00264206	250	750	8.0	107	2.0	20.5	13		33.2	0.290	0.00144	0.00031	0.0043	0.00018	<0.0010	<0.050	0.000207	<0.0010	<0.00050	0.00256	0.0296	0.00029	<0.0050	0.0192	<0.000050
B00264207	250	750	7.4	98	5.0	15.0	19		30.5	0.0328	0.00324	0.00016	0.0050	<0.00010	<0.0010	<0.050	0.000599	<0.0010	0.00079	0.00130	0.0063	0.00042	<0.0050	0.243	<0.000050
B00264209	250	750	9.2	67	<0.5	29.0	4		19.4	0.425	0.00233	0.00075	0.0041	<0.00010	<0.0010	<0.050	<0.000010	<0.0010	<0.00050	0.00125	0.0106	<0.00020	<0.0050	0.0040	<0.000050
B00264215	250	750	7.81	156	0.5	14	52		55.1	0.111	0.00171	0.000403	0.00388	<0.000010	<0.0000050	<0.010	0.0000190	<0.00010	0.000158	0.00059	0.0023	0.000041	0.00111	0.0682	<0.00001
B00264222	250	750	7.42	83	2.0	15.8	14		21.7	0.185	0.00460	0.00030	0.0074	<0.00010	<0.0010	<0.050	<0.000010	<0.0010	<0.00050	0.00330	0.257	0.00080	<0.0050	0.0327	<0.000050
B00264223	250	750	7.99	38	3.0	15.0	<1		7.72	0.322	0.0267	0.00276	0.0044	<0.00010	<0.0010	<0.050	0.000033	<0.0010	<0.00050	0.00178	0.0144	0.00452	<0.0050	0.0046	<0.000050
B00264224	250	750	9.59	70	<0.5	23.0	5		22.3	0.220	0.00296	0.00466	0.0090	<0.00010	<0.0010	<0.050	<0.000010	<0.0010	<0.00050	0.00272	0.0148	0.00026	<0.0050	0.0034	<0.000050
B00264225	250	750	8.27	115	<0.5	18.0	27		34.0	0.295	0.00089	0.00039	0.0048	<0.00010	<0.0010	<0.050	<0.000010	<0.0010	<0.00050	0.00577	0.0379	<0.00020	<0.0050	0.0123	<0.000050
B00264226	250	750	7.03	73	2.5	10.0	15		20.6	0.0624	0.00119	0.00023	0.0078	<0.00010	<0.0010	<0.050	0.000069	<0.0010	0.00154	0.00232	0.0841	0.00088	<0.0050	0.0784	<0.000050
B00264227	250	750	6.71	74	7.0	6.0	22		21.3	0.0854	0.0241	0.00078	0.0040	<0.00010	<0.0010	<0.050	0.000076	<0.0010	0.00109	0.00388	0.140	0.00408	<0.0050	0.121	<0.000050
B00264228	250	750	8.86	65	<0.5	18.5	9		19.7	0.441	<0.00050	0.00024	0.0043	<0.00010	<0.0010	<0.050	<0.000010	<0.0010	<0.00050	0.00132	0.0162	<0.00020	<0.0050	0.0051	<0.000050
B00264229	250	750	8.25	55	0.5	19.0	<1		15.0	0.533	0.00095	0.00022	0.0025	<0.00010	<0.0010	<0.050	<0.000010	<0.0010	<0.00050	0.00176	0.0309	<0.00020	<0.0050	0.0033	<0.000050
B00264244	250	750	7.54	326	2	11	132		120	0.169	0.000679	0.00120	0.00483	<0.000010	<0.0000050	<0.010	0.0000080	<0.00010	0.0000260	0.00033	0.0089	0.000075	0.00097	0.00648	<0.00001
B00264248	250	750	7.62	128	0.5	15	28		37.2	0.0556	0.141	0.00787	0.00763	<0.000010	0.0000250	<0.010	0.0000220	<0.00010	0.0000750	0.00412	0.0076	0.00111	0.00088	0.00178	<0.00001
B00264252	220	660	8.57	62	<0.5	18	8		19.3	0.110	0.000154	0.000197	0.0202	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000080	0.00281	0.0057	<0.000020	0.00132	0.0117	<0.00001
B00264256	250	750	8.52	158	<0.5	15	47		56.3	0.208	0.00347	0.00519	0.00959	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000240	0.00133	0.0017	<0.000020	<0.00050	0.00237	<0.00001
B00264258	250	750	8.43	199	<0.5	14	67		67.7	0.0701	0.00327	0.00207	0.00786	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000280	0.00205	0.0015	0.000036	0.00059	0.00661	<0.00001
B00264263	250	750	7.22	147	3	18.5	38		53.0	0.0590	0.000270	0.000025	0.0135	<0.000010	<0.0000050	<0.010	0.0000060	<0.00010	0.000287	0.00207	0.0018	<0.000020	0.00626	0.0369	<0.00001
B00264269	250	750	7.89	85	0.5	13	18		28.1	0.194	0.00519	0.00468	0.00581	<0.000010	0.0000130	<0.010	<0.0000050	<0.00010	<0.0000050	0.00056	0.0026	0.000224	0.00072	0.00753	<0.00001
B00264295	250	750	8.06	61	0.5	13	7		17.2	0.136	0.0109	0.00162	0.00150	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000970	0.00130	0.0032	0.000431	0.00059	0.00668	<0.00001
B00264298	250	750	6.46	187	8.5	8	45		51.0	0.0049	0.0249	0.000811	0.0203	<0.000010	<0.0000050	<0.010	0.000889	<0.00010	0.00314	0.00167	0.360	0.0364	0.00125	0.154	<0.00001
B00264300	250	750	8.47	143	<0.5	24	27		48.3	0.205	0.0155	0.0111	0.0186	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000280	0.00086	0.0022	<0.000020	0.00202	0.0183	<0.00001
B00264311	250	750	7.06	106	3.5	19	24		36.8	0.0483	0.00519	0.000153	0.00516	<0.000010	<0.0000050	<0.010	0.0000180	<0.00010	0.00309	0.00086	0.0018	<0.000020	0.00101	0.114	<0.00001
B00264319	250	750	7.12	117	2	22	16		41.7	0.0381	0.00164	0.000128	0.00273	<0.000010	<0.0000050	<0.010	0.0000070	<0.00010	0.000121	0.00063	0.0045	0.000145	<0.00050	0.0583	<0.00001
B00264325	250	750	8.9	72	<0.5	19	9		23.5	0.268	0.0892	0.0141	0.0136	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000220	0.00041	0.0029	0.000037	0.00079	0.00267	<0.00001
B00264329	250	750	8.39	79	<0.5	17	9		21.8	0.283	0.0211	0.00311	0.00120	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000850	0.00095	0.0110	0.000162	0.00121	0.00608	<0.00001
B00264335	250	750	8.4	108	<0.5	18	24		34.0	0.321	0.000263	0.000394	0.00820	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	<0.0000050	0.00071	0.0020	0.000024	0.00209	0.00960	<0.00001
B00264346	250	750	8	105	0.5	23	15		37.7	0.205	0.0257	0.0233	0.0171	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000060	0.00101	0.0018	0.000903	0.00162	0.0185	<0.00001
B00264349	250	750	8.63	98	<0.5	19	15		31.2	0.338	0.000211	0.00176	0.0205	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	<0.0000050	0.00069	0.0031	0.000024	0.00174	0.00820	<0.00001
B00264402	250	750	7.25	105	3.5	24	15		37.2	0.0457	0.00144	0.000169	0.00473	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.000185	0.00092	0.0033	<0.000020	0.00080	0.0294	<0.00001
B00264404	250	750	6.67	68	3	8.5	14		21.4	0.0208	0.0645	0.000591	0.00206	<0.000010	<0.0000050	<0.010	0.0000120	<0.00010	0.000223	0.00068	<0.0010	0.000202	<0.00050	0.0389	<0.00001
B00264417	250	750	7.48	39	2	11.5	5		10.1	0.233	0.0227	0.000722	0.00209	<0.000010	<0.0000050	<0.010	0.0000080	<0.00010	0.000325	0.00102	0.0040	0.000142	<0.00050	0.00907	<0.00001
B00264430	250	750	8.44	92	<0.5	26	9		28.0	0.305	0.000675	0.000268	0.00157	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000170	0.00097	0.0023	<0.000020	0.00203	0.0128	<0.00001
B00264437	250	750	9.07	53	<0.5	21	5		18.4	0.291	0.000654	0.00437	0.0520	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	<0.0000050	0.00061	0.0024	<0.000020	<0.00050	0.00023	<0.00001
B00264440	250	750	7.22	49	2.5	7.5	9		9.99	0.157	0.00762	0.00117	0.00194	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000220	0.00221	0.0066	0.000261	0.00118	0.00236	<0.00001
B00264450	250	750	8.56	60	<0.5	20.5	5		18.3	0.327	0.000162	0.000349	0.00953	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	<0.0000050	0.00072	0.0026	<0.000020	0.00150	0.00870	<0.00001
B00264451	250	750	8.59	81	<0.5	17	15		27.1	0.321	0.000116	0.000751	0.00819	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	<0.0000050	0.00081	0.0030	<0.000020	0.00154	0.00765	<0.00001
B00264454	250	750	6.98	45	2	8.5	5		12.9	0.0559	0.00379	0.00391	0.0310	<0.000010	<0.0000050	<0.010	<0.0000050	<0.00010	0.0000270	0.00146	0.0046	0.000039	0.00111	0.00999	<0.00001
B00293251	250	750	9.13	65	<0.5	17.5	6		18	0.213	0.00857	0.00268	0.0107	<0.00001	<0.00001	0.003	0.000002	<0.0001	0.000008	0.0005	0.004	0.00049	0.00075	0.00522	<0.000004
B00293256	250	750	9.24	55	<0.5	18.5	5		16	0.228	0.00813	0.00364	0.0054	<0.00001	0.00002	0.002	0.000003	<0.0001	0.00001	0.0004	0.005	0.00088	0.00061	0.00386	<0.000004
B00293260	250	750	8.36	125	<0.5	26	30		44	0.064	0.01	0.00025	0.0231	<0.00001	<0.00001	0.001	0.000003	<0.0001	0.00047	0.0005	<0.002	0.00014	0.00155	0.0286	<0.000004
B00293261	250	750	8.53	76	<0.5	14	18		24	0.094	0.00373	0.00088	0.0177	<0.00001	<0.00001	0.002	0.000003	<0.0001	0.000037	0.0005	0.002	0.00016	0.00155	0.00738	<0.000004
Q930106	250	750	8.72	78	<0.5	25	5.16	0.076	28	0.332	0.00019	0.00058	0.0054	<0.00001	<0.00001	0.004	0.000005	<0.0001	0.000011	0.0011	<0.002	<0.00005	0.00061	0.00096	<0.00001
Q930119	250	750	9.04	78.9	<0.5	21	8.88	0.052	24	0.238	0.00388	0.00126	0.0324	<0.00001	<0.00001	0.002	0.000003	0.0002	0.000032	0.0012	0.007	<0.00005	0.00069	0.0031	<0.00001
Q930128	250	750	8.89	71	<0.5	24	3.45	0.056	23	0.101	0.00206	0.0115	0.165	<0.00001	<0.00001	0.003	0.000009	<0.0001	0.00003	0.0007	0.006	<0.00005	0.00034	0.00055	<0.00001
Q930137	250	750	8.99	36	<0.5	25	2.54	0.058	19	0.208	0.00167	0.00494	0.24	<0.00001	<0.00001	0.002	0.000009	0.0001	0.000024	0.001	0.007	<0.00005	0.00038	0.00045	<0.00001
Q930138	250	750	8.95	92	<0.5	16	15.8	0.060	23	0.257	0.0112	0.00067	0.0025	<0.00001	<0.00001	0.002	0.000004	<0.0001	0.000013	0.0012	0.007	0.00046	0.00115	0.00495	<0.00001
Q930142	250	750	9.04	80	<0.5	24	7.01	0.098	21	0.308	0.0289	0.00013	0.0042	<0.00001	<0.00001	0.002	<0.000002	<0.0001	0.000014	0.0011	0.007	<0.00005	0.00132	0.00603	<0.00001
Q930149	250	750	7.64	120	1.5	28	20.7	0.094	42	0.242	0.00037	0.00073	0.0066	<0.00001	<0.00001	0.004	0.000009	<0.0001	0.000051	0.0018	0.005	<0.00005	0.00111	0.0154	<0.00001
Q930151	250	750	8.35	123	<0.5	24.5	27.5	0.140	42	0.257	0.00014	0.00011	0.0074	<0.00001	<0.00001	0.003	0.000006	<0.0001	0.000228	0.0013	0.006	<0.00005	0.00137	0.0131	<0.00001
Q930152	250	750	8.49	111	<0.5	25	17.8	0.120	27	0.455	0.00027	0.00064	0.0041	<0.00001	<0.00001	0.004	0.000007	0.0001	0.000057	0.0028	0.034	0.00006	0.00059	0.00508	<0.00001
Q930159	250	750	7.11	276	4	13	112	0.065	114	0.047	0.00014	0.00379	0.0203	<0.00001	<0.00001	0.005	0.000022	0.0001	0.00077	0.0043	0.018	0.00006	0.00125	0.0165	<0.00001
Q930162	250	750	7.54	288	5	25	108	0.120	71	0.049	0.00053	0.00025	0.0732	<0.00001	<0.00001	0.008	0.000042	<0.0001	0.000248	0.0056	0.013	<0.00005	0.00185	0.0145	<0.00001

Blank cells indicate parameter was not analyzed.

BMC Sample ID	Dissolved Molybdenum (Mo)	Dissolved Nickel (Ni)	Dissolved Phosphorus (P)	Dissolved Selenium (Se)	Dissolved Silicon (Si)	Dissolved Silver (Ag)	Dissolved Strontium (Sr)	Dissolved Tellurium (Te)	Dissolved Thallium (Tl)	Dissolved Thorium (Th)	Dissolved Tin (Sn)	Dissolved Titanium (Ti)	Dissolved Uranium (U)	Dissolved Vanadium (V)	Dissolved Zinc (Zn)	Dissolved Zirconium (Zr)	Dissolved Calcium (Ca)	Dissolved Magnesium (Mg)	Dissolved Potassium (K)	Dissolved Sodium (Na)	Dissolved Sulphur (S)
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit:	**0.00001**	**0.000050**	**0.00020**	**0.0020**	**0.000040**	**0.050**	**0.0000050**	**0.00005**	**0.000050**	**0.00001**	**0.0000020**	**0.00020**	**0.00050**	**0.0000020**	**0.00020**	**0.0010**	**0.00010**	**0.050**	**0.050**	**0.050**	**0.050**
B00264201	0.0023	<0.0010	<0.010	0.00097	0.63	<0.000020	0.0053		<0.000050		<0.0050	<0.0050	0.00267	<0.0050	<0.0050	0.00301	6.83	0.790	4.06	1.17	<3.0
B00264205	<0.0010	<0.0010	<0.010	0.00040	0.90	<0.000020	0.0119		<0.000050		<0.0050	<0.0050	0.00483	<0.0050	<0.0050	0.00078	5.34	0.708	4.57	2.84	<3.0
B00264206	<0.0010	0.0014	0.031	0.00062	0.63	<0.000020	0.0260		0.000060		<0.0050	<0.0050	0.00100	<0.0050	<0.0050	0.00154	9.26	2.45	5.53	1.22	4.3
B00264207	<0.0010	0.0082	<0.010	0.00089	0.40	<0.000020	0.0129		0.000201		<0.0050	<0.0050	0.00059	<0.0050	0.272	0.00084	7.68	2.75	3.19	1.27	6.5
B00264209	<0.0010	<0.0010	0.011	0.00509	0.81	<0.000020	0.0140		<0.000050		<0.0050	<0.0050	0.00115	<0.0050	<0.0050	<0.00050	6.24	0.938	4.46	1.35	<3.0
B00264215	0.000774	0.00040	0.0027	0.00347	0.572	<0.0000050	0.0842		0.0000950		<0.00020	<0.00050	0.00132	<0.00020	<0.0010	0.00044	21.2	0.524	3.03	0.641	16.3
B00264222	0.0016	0.0029	0.010	0.00359	0.74	<0.000020	0.0116		0.000120		<0.0050	<0.0050	0.00147	<0.0050	<0.0050	0.00291	5.49	1.93	4.22	2.46	4.2
B00264223	0.0027	0.0017	0.012	0.0424	0.70	<0.000020	0.0057		0.000111		<0.0050	<0.0050	0.00156	<0.0050	0.0063	0.00311	2.87	0.135	3.17	1.68	<3.0
B00264224	<0.0010	0.0029	<0.010	0.00147	1.18	<0.000020	0.0287		<0.000050		<0.0050	<0.0050	0.00176	<0.0050	<0.0050	0.00059	8.25	0.413	1.71	2.41	<3.0
B00264225	<0.0010	0.0031	0.036	0.00048	0.77	<0.000020	0.0195		<0.000050		<0.0050	<0.0050	0.00461	<0.0050	<0.0050	0.00248	10.8	1.71	5.59	2.74	9.8
B00264226	0.0012	0.0153	<0.010	0.00036	0.58	<0.000020	0.0159		<0.000050		<0.0050	<0.0050	0.00096	<0.0050	0.0123	0.00205	6.17	1.26	4.25	1.33	5.3
B00264227	<0.0010	0.0126	<0.010	0.00022	0.88	0.000159	0.0084		0.000415		<0.0050	<0.0050	0.0229	<0.0050	0.0067	0.00490	7.40	0.669	6.27	1.65	8.3
B00264228	<0.0010	<0.0010	0.012	0.00053	0.94	<0.000020	0.0141		<0.000050		<0.0050	<0.0050	0.00158	<0.0050	<0.0050	0.00075	6.71	0.713	4.28	1.65	3.4
B00264229	0.0012	<0.0010	0.025	0.00031	0.94	<0.000020	0.0069		<0.000050		<0.0050	<0.0050	0.00137	<0.0050	<0.0050	0.00214	4.85	0.710	4.89	0.925	<3.0
B00264244	0.00135	<0.00020	0.0168	0.000612	0.647	<0.0000050	0.214		0.0000030		<0.00020	<0.00050	0.00964	<0.00020	0.0012	<0.00010	44.7	2.04	4.38	0.307	42.0
B00264248	0.00256	0.0107	0.0034	0.00619	0.811	<0.0000050	0.0601		0.0000900		<0.00020	<0.00050	0.00333	0.00099	0.0025	0.00064	11.5	2.03	2.28	5.88	9.8
B00264252	0.000126	<0.00020	0.0022	0.000934	0.591	<0.0000050	0.0190		0.0000060		<0.00020	<0.00050	0.00213	<0.00020	<0.0010	<0.00010	5.84	1.15	3.71	0.651	3.1
B00264256	0.000184	0.00045	<0.0020	0.000292	0.479	<0.0000050	0.116		0.0000530		<0.00020	<0.00050	0.000267	0.00031	<0.0010	<0.00010	20.1	1.50	2.30	1.02	15.5
B00264258	0.000710	0.00040	0.0029	0.000162	0.789	<0.0000050	0.125		0.0000680		<0.00020	<0.00050	0.000641	<0.00020	<0.0010	0.00013	24.8	1.39	2.00	2.29	19.9
B00264263	0.000345	0.00056	<0.0020	0.00143	0.668	<0.0000050	0.0598		0.0000130		<0.00020	<0.00050	0.00298	<0.00020	<0.0010	<0.00010	16.7	2.76	4.37	0.427	14.2
B00264269	0.000511	<0.00020	0.0028	0.00557	0.647	<0.0000050	0.0320		0.0000310		<0.00020	<0.00050	0.000528	<0.00020	0.0010	<0.00010	9.08	1.33	2.20	0.784	7.2
B00264295	0.000690	0.00291	<0.0020	0.000763	0.480	<0.0000050	0.00812		0.0000970		<0.00020	<0.00050	0.00551	<0.00020	<0.0010	<0.00010	5.57	0.794	3.05	1.24	3.2
B00264298	0.000079	0.268	<0.0020	0.00155	0.583	<0.0000050	0.0597		0.000287		<0.00020	<0.00050	0.000217	<0.00020	0.348	<0.00010	15.5	2.95	1.35	0.486	15.0
B00264300	0.000465	0.00028	0.0074	0.00236	0.610	<0.0000050	0.0517		0.0000450		<0.00020	<0.00050	0.00338	<0.00020	0.0014	<0.00010	12.7	4.00	3.77	1.25	9.4
B00264311	0.000340	0.00446	<0.0020	0.000728	0.459	<0.0000050	0.0262		0.0000120		<0.00020	<0.00050	0.00140	<0.00020	0.0030	<0.00010	11.4	2.00	3.56	0.535	9.2
B00264319	0.000564	0.00063	0.0064	0.000100	0.704	<0.0000050	0.0217		0.0000090		<0.00020	<0.00050	0.000361	<0.00020	0.0012	<0.00010	11.3	3.24	2.56	0.177	7.7
B00264325	0.000416	0.00080	<0.0020	0.000220	0.596	<0.0000050	0.0335		0.000144		<0.00020	<0.00050	0.000191	0.00119	<0.0010	<0.00010	8.23	0.707	2.29	1.47	3.2
B00264329	0.000717	0.00196	<0.0020	0.000223	0.590	<0.0000050	0.0125		0.0000060		<0.00020	<0.00050	0.00279	<0.00020	<0.0010	0.00021	7.21	0.929	3.20	2.32	4.1
B00264335	0.000187	<0.00020	0.0034	0.000074	0.962	<0.0000050	0.0508		0.0000140		<0.00020	<0.00050	0.00215	<0.00020	<0.0010	<0.00010	11.9	1.06	4.97	0.749	8.5
B00264346	0.000342	<0.00020	<0.0020	0.00493	1.03	<0.0000050	0.0344		0.000337		<0.00020	<0.00050	0.0185	<0.00020	<0.0010	<0.00010	9.10	3.65	3.40	0.706	7.7
B00264349	0.000207	<0.00020	0.0025	0.000108	0.843	<0.0000050	0.0415		0.0000110		<0.00020	<0.00050	0.00218	<0.00020	<0.0010	<0.00010	9.46	1.84	5.25	0.394	5.2
B00264402	0.000230	0.00040	0.0044	0.000235	1.30	<0.0000050	0.0241		0.0000040		<0.00020	<0.00050	0.000205	<0.00020	0.0011	<0.00010	9.11	3.50	2.97	0.254	8.5
B00264404	0.000221	0.0266	<0.0020	0.00284	0.649	<0.0000050	0.0216		0.000131		<0.00020	<0.00050	0.000985	<0.00020	<0.0010	<0.00010	5.54	1.83	3.16	0.468	6.4
B00264417	0.000421	0.00102	<0.0020	0.00643	0.759	<0.0000050	0.00800		0.0000200		<0.00020	<0.00050	0.00438	<0.00020	0.0013	0.00076	3.22	0.512	2.61	0.609	<3.0
B00264430	0.000105	<0.00020	0.0037	0.000272	0.632	<0.0000050	0.0143		<0.0000020		<0.00020	<0.00050	0.000249	0.00035	<0.0010	<0.00010	8.71	1.53	5.31	0.746	4.2
B00264437	0.000090	<0.00020	0.0029	0.000069	0.570	<0.0000050	0.0467		0.0000280		<0.00020	<0.00050	0.0000040	0.00088	0.0011	<0.00010	5.64	1.05	1.54	1.02	<3.0
B00264440	0.000206	0.00382	0.0107	0.000276	0.698	0.0000130	0.00811		0.0000040		<0.00020	<0.00050	0.000418	<0.00020	0.0011	0.00045	3.03	0.587	3.93	1.45	3.4
B00264450	0.000153	<0.00020	0.0052	0.000253	0.720	<0.0000050	0.0143		0.0000030		<0.00020	<0.00050	0.00460	<0.00020	0.0016	<0.00010	5.98	0.822	3.10	0.176	<3.0
B00264451	0.000548	<0.00020	0.0024	0.000143	0.880	<0.0000050	0.0340		0.0000080		<0.00020	<0.00050	0.00344	<0.00020	<0.0010	<0.00010	9.78	0.649	3.14	0.634	5.1
B00264454	0.000216	<0.00020	0.0021	0.000367	0.716	<0.0000050	0.0155		0.000167		<0.00020	<0.00050	0.000342	<0.00020	<0.0010	0.00011	4.02	0.695	3.21	0.201	<3.0
B00293251	0.00068	0.00014	<0.010	0.0023	1.38	<0.00001	0.0283	<0.00005	0.000045	0.00004	<0.00005	0.0002	0.00177	<0.0002	<0.001	0.00003	6.66	0.423	3.25	0.375	2.76
B00293256	0.00065	0.00009	<0.010	0.0021	1.04	<0.00001	0.0177	<0.00005	0.000098	0.00004	<0.00005	0.0002	0.000909	<0.0002	<0.001	0.00009	5.76	0.388	3.21	0.171	1.87
B00293260	0.00054	0.00103	<0.010	0.0005	0.543	0.00001	0.092	<0.00005	0.000335	<0.00001	0.00009	<0.0002	0.00547	<0.0002	<0.001	0.00004	12.6	3	2.37	0.249	8.68
B00293261	0.0006	0.00029	<0.010	0.0002	0.937	<0.00001	0.0638	<0.00005	0.000029	<0.00001	<0.00005	<0.0002	0.00185	<0.0002	<0.001	0.00003	6.78	1.64	2.4	0.255	5.48
Q930106	0.00081	0.0001	<0.010	0.0006	0.96	<0.00001	0.0321	<0.00005	0.000007	<0.00001	<0.00005	<0.0002	0.00058	0.0003	<0.001	<0.00002	8.84	1.35	3.69	0.547	2.7
Q930119	0.00135	0.00006	<0.010	<0.0001	0.892	<0.00001	0.0913	<0.00005	0.000024	0.00002	0.00005	0.0006	0.00269	<0.0002	<0.001	0.00031	5.82	2.29	3.45	1.32	5.15
Q930128	0.00025	0.00009	<0.010	0.0001	1.33	<0.00001	0.105	<0.00005	0.000065	<0.00001	<0.00005	<0.0002	0.000001	0.0101	<0.001	<0.00002	5.47	2.15	2.93	2.13	0.793
Q930137	0.00028	0.00006	<0.010	<0.0001	1.31	<0.00001	0.0848	<0.00005	0.000121	<0.00001	<0.00005	0.0002	0.000007	0.008	<0.001	<0.00002	4.89	1.65	3.6	2.24	1.12
Q930138	0.001	0.00004	<0.010	0.0043	0.956	<0.00001	0.031	<0.00005	0.000079	0.00061	<0.00005	0.0002	0.0226	<0.0002	<0.001	0.00027	8.15	0.737	4.45	3.09	5.84
Q930142	0.00052	0.0001	0.011	<0.0001	1.33	<0.00001	0.0337	<0.00005	0.000014	0.00002	0.00007	0.0002	0.000458	<0.0002	<0.001	0.00003	6.17	1.47	6.96	1.02	4.25
Q930149	0.00279	0.00042	<0.010	0.0005	0.966	<0.00001	0.0499	<0.00005	0.000006	0.00001	<0.00005	<0.0002	0.00127	<0.0002	<0.001	0.00024	12.4	2.78	3.22	2.77	7.78
Q930151	0.00858	0.00203	<0.010	0.0006	0.832	<0.00001	0.0353	<0.00005	0.000015	0.00001	<0.00005	<0.0002	0.000736	0.0003	<0.001	0.00015	10.8	3.76	3.59	2.64	8.95
Q930152	0.00087	0.00099	<0.010	0.0005	1.16	<0.00001	0.0212	<0.00005	0.000007	0.00029	0.00005	0.0009	0.00183	0.0004	<0.001	0.00369	8.66	1.2	4.65	6.96	6.31
Q930159	0.00201	0.0016	<0.010	0.0022	0.379	<0.00001	0.0854	<0.00005	0.000006	0.00014	<0.00005	0.0007	0.00151	<0.0002	<0.001	0.00125	32.3	8.08	3.98	4.8	37.7
Q930162	0.0022	0.00063	0.013	0.0005	0.655	<0.00001	0.0698	<0.00005	0.000008	0.00001	0.00016	0.0004	0.00113	0.0002	0.002	0.00104	22.3	3.72	5.15	23.1	30.9

Blank cells indicate parameter was not analyzed.

APPENDIX D
AEG 2016 Mineralized Rock Samples Static Data

Sample ID	Geodomain	Paste pH	Fizz Rating	Total Inorganic C	Carbonate-NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	Siderite Corrected NP	NP/AP
		pH Units		wt %	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
	Detection Limit:			0.02	1.7	0.01	0.01	0.01	1.3	0.5	
B00 293 204	MET2-4	7.0	Moderate	0.26	21.7	37.34	0.06	37.28	1165.0	55.3	0.05
B00 293 207	MET2-4	4.8	Slight	<0.02	<1.7	39.33	0.09	39.24	1226.3	9.7	0.01
B00 293 215	MET5-7	7.2	Moderate	0.49	40.8	45.70	0.04	45.66	1426.9	85.6	0.06
B00 293 219	MET5-7	8.2	Moderate	1.73	144.2	31.92	0.04	31.88	996.3	197.6	0.20
B00 293 226	MET8	6.9	Moderate	0.11	9.2	37.62	0.06	37.56	1173.8	29.8	0.03
B00 293 229	MET8	8.6	Strong	2.04	170.0	26.13	0.03	26.10	815.6	279.7	0.34
B00 293 233	+1340mRL, tt rich, soluble Pb	7.1	Moderate	0.17	14.2	40.28	0.05	40.23	1257.2	36.0	0.03
B00 293 236	+1340mRL, tt rich, soluble Pb	8.2	Strong	2.26	188.3	32.40	0.04	32.36	1011.3	229.9	0.23

Sample ID	Geodomain	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)
		ppm	wt.%	ppm	ppm	ppm	ppm	ppm	ppm	wt.%	ppm	ppm	ppm	ppm	ppm	wt.%	wt.%	ppm	ppm	ppm
Detection Limit:		**0.01**	**0.01**	**0.1**	**0.005**	**10**	**10**	**0.05**	**0.01**	**0.01**	**0.01**	**0.02**	**0.1**	**1**	**0.05**	**0.005**	**0.01**	**0.05**	**0.05**	**0.02**
B00 293 204	MET2-4	53.84	0.03	760.0	0.035	<10	20	<0.05	30.96	0.76	696	0.68	15.1	39	0.14	0.07	26.22	3.21	0.37	0.05
B00 293 207	MET2-4	86.85	0.32	319.1	0.038	10	116	0.17	84.20	0.09	113	2.79	204.9	38	2.14	1.63	35.18	6.38	0.26	0.26
B00 293 215	MET5-7	66.54	0.04	483.4	0.012	<10	38	<0.05	51.56	1.66	441	0.94	51.3	49	0.07	0.15	21.11	1.48	0.21	0.07
B00 293 219	MET5-7	114.00	<0.01	1577.5	0.427	<10	116	<0.05	9.68	3.81	357	2.18	2.6	44	<0.05	0.12	22.51	3.81	0.24	0.02
B00 293 226	MET8	122.00	0.02	450.3	0.169	<10	70	<0.05	245.87	0.41	982	1.23	104.7	38	0.07	0.22	28.64	11.49	1.11	<0.02
B00 293 229	MET8	336.00	0.18	1777.1	4.937	<10	166	0.11	8.62	5.34	249	11.88	16.4	47	0.19	0.64	19.37	0.95	0.72	0.25
B00 293 233	+1340mRL, tt rich, soluble Pb	175.00	0.08	1626.6	0.492	<10	23	<0.05	82.02	0.57	927	1.66	55.2	52	0.41	0.37	23.68	5.40	0.31	0.19
B00 293 236	+1340mRL, tt rich, soluble Pb	268.00	<0.01	34100.0	6.264	<10	20	<0.05	22.39	4.69	438	8.79	3.3	34	<0.05	0.25	24.77	3.34	0.44	<0.02

Sample ID	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)
	ppm	ppm	wt.%	ppm	ppm	wt.%	ppm	ppm	wt.%	ppm	ppm	ppm	wt.%	ppm	ppm	wt.%	ppm	ppm	ppm	ppm	ppm
Detection Limit	**0.01**	**0.005**	**0.01**	**0.2**	**0.1**	**0.01**	**5**	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.01**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**	**0.2**	**0.2**
B00 293 204	13.64	0.986	<0.01	0.4	0.7	0.61	961	1.54	<0.01	0.12	4.6	11	2.21	0.2	<0.001	>10.00	43.96	0.2	18.2	4	36.7
B00 293 207	2.80	0.817	0.12	0.9	2.7	0.28	466	1.80	0.01	0.80	5.0	20	0.24	6.5	<0.001	>10.00	21.15	0.5	3.9	10.3	1.8
B00 293 215	20.38	0.867	0.02	0.5	0.4	0.75	567	1.67	<0.01	0.14	5.2	<10	1.2	0.9	<0.001	>10.00	143.76	0.2	10.8	4.5	45.8
B00 293 219	14.85	0.294	<0.01	0.7	0.3	1.33	1258	4.85	<0.01	0.06	8.6	<10	1.8	<0.1	0.004	>10.00	379.68	0.1	11.6	2.8	49.1
B00 293 226	11.63	1.392	<0.01	0.5	0.3	0.36	980	4.18	<0.01	0.11	8.5	142	1.4	0.3	0.002	>10.00	59.33	0.1	199.6	4.9	8
B00 293 229	11.93	0.131	0.11	6.3	1.3	2.37	1092	16.53	<0.01	0.32	28.5	62	2.9	3.8	0.013	>10.00	2194.29	0.6	112.1	7.3	102.1
B00 293 233	14.35	2.122	0.05	0.8	0.7	0.37	822	2.40	<0.01	0.23	9.0	33	2.5	2.7	0.002	>10.00	759.52	0.3	24.9	6.7	6.5
B00 293 236	35.30	0.331	<0.01	5.0	0.3	1.16	2206	6.82	<0.01	0.08	13.3	<10	1.6	0.3	0.008	>10.00	1731.74	0.2	56.1	3.3	20.7

Sample ID	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
	ppm	ppm	ppm	wt.%	ppm	ppm	ppm	ppm	ppm	ppm	wt.%
Detection Limit	**0.01**	**0.01**	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
B00 293 204	<0.01	0.04	<0.2	<0.005	3.97	0.46	11	<0.05	0.38	11.67	3.0
B00 293 207	0.01	<0.01	0.6	0.009	16.45	3.06	21	<0.05	1.21	1.67	9.8
B00 293 215	<0.01	<0.01	0.7	<0.005	7.9	1.55	9	1.09	1.25	7.09	3.1
B00 293 219	<0.01	0.01	<0.2	<0.005	17.36	0.54	13	0.36	4.44	6.22	0.9
B00 293 226	<0.01	0.01	<0.2	<0.005	3.93	6.14	9	<0.05	1.15	17.17	<0.5
B00 293 229	0.02	0.03	4.4	<0.005	14.26	4.59	36	2.49	7.25	5.33	9.2
B00 293 233	<0.01	0.02	1.4	<0.005	6.89	2.32	10	0.19	1.54	14.84	7.6
B00 293 236	<0.01	0.01	<0.2	<0.005	11.29	2.56	17	0.19	6.36	7.42	0.8

Sample ID	Geodomain	Weight of dry sample used	Volume of DI water used	pH	EC	Acidity (to pH 8.3)	Alkalinity (to pH 4.5)	Dissolved Sulphate (SO_4)	Hardness Total (as $CaCO_3$)	Aluminum dissolved	Antimony dissolved	Arsenic dissolved	Barium dissolved	Beryllium dissolved	Bismuth dissolved	Boron dissolved	Cadmium dissolved	Calcium dissolved
		g	mL		µS/cm	mg $CaCO_3$/L	mg $CaCO_3$/L	mg/L	mg $CaCO_3$/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit:		**0.01**	**0.5**	**0.01**	**1**	**0.5**	**0.5**	**1**	**0.1**	**0.001**	**0.00005**	**0.00005**	**0.0001**	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**
B00 293 204	MET2-4	250	750	7.2	66	4.5	14.0	10	24	0.002	0.00606	0.00042	0.082	<0.00001	0.00001	0.003	0.000123	5.49
B00 293 215	MET5-7	250	750	6.7	123	10.5	10.5	33	39	0.001	0.00328	0.00041	0.0727	<0.00001	0.00008	0.002	0.003	9.26
B00 293 229	MET8	250	750	9.0	121	<0.5	25.5	19	45	0.068	0.0873	0.00056	0.172	<0.00001	0.00005	0.004	0.000006	10.7
B00 293 233	+1340mRL, tt rich, soluble Pb	250	750	7.1	56	5.5	10.0	9	18	0.003	0.014	0.00015	0.17	<0.00001	0.00009	0.005	0.000256	4.79

Sample ID	Chromium dissolved	Cobalt dissolved	Copper dissolved	Iron dissolved	Lead dissolved	Lithium dissolved	Magnesium dissolved	Manganese dissolved	Mercury dissolved	Molybdenum dissolved	Nickel dissolved	Phosphorus dissolved	Potassium dissolved	Selenium dissolved	Silicon dissolved	Silver dissolved	Sodium dissolved	Strontium dissolved	Sulphur dissolved	Tellurium dissolved
	mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Detection Limit:	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**	**0.01**	**0.01**	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**
B00 293 204	<0.0001	0.000047	0.0005	<0.002	0.179	0.00146	2.4	0.105	<0.000004	0.00003	0.00026	<0.010	0.316	0.0106	0.252	<0.00001	0.16	0.0261	6.14	<0.00005
B00 293 215	<0.0001	0.00228	0.000	<0.002	0.334	0.00061	3.91	0.25	<0.000004	0.00004	0.00165	<0.010	0.386	0.0795	0.08700	<0.00001	0.35	0.0247	13.1	<0.00005
B00 293 229	<0.0001	0.000008	0.000	<0.002	0.11	0.00093	4.4	0.00749	<0.000004	0.00079	0.00009	<0.010	1.04	0.0248	0.17700	0.00002	0.336	0.0299	11.1	<0.00005
B00 293 233	<0.0001	0.000498	0.001	<0.002	0.214	0.00039	1.44	0.17	<0.000004	0.00022	0.00182	<0.010	0.667	0.0152	0.08200	<0.00001	0.258	0.0081	6.37	<0.00005

Sample ID	Thallium dissolved	Thorium dissolved	Tin dissolved	Titanium dissolved	Uranium dissolved	Vanadium dissolved	Zinc dissolved	Zirconium dissolved
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit:	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
B00 293 204	0.00109	<0.00001	<0.00005	<0.0002	0.000006	<0.0002	0.477	<0.00002
B00 293 215	0.0085	<0.00001	<0.00005	<0.0002	0.000	<0.0002	2.87	<0.00002
B00 293 229	0.000662	<0.00001	<0.00005	<0.0002	0.000	<0.0002	0.01	<0.00002
B00 293 233	0.00259	<0.00001	<0.00005	<0.0002	<0.000001	<0.0002	0.72	<0.00002

APPENDIX E
AEG 2016 Tailings Samples Static Data

Sample ID	Paste pH	Fizz Rating	Total Inorganic C	Carbonate-NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	Modified Sobek NP	NP/AP
	pH Units		wt %	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
Detection Limit:			**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**1.3**	**0.5**	
Test 25 - Zn Ro Tail Cyc 1-3	6.8	Moderate	1.39	115.8	28.42	0.06	28.36	886.3	95.6	0.11
Test 25 - Zn Ro Tail Cyc 4-6	5.9	Moderate	1.29	107.5	27.74	0.20	27.54	860.6	91.0	0.11
Test 29 - Zn Ro Tail Cyc 1-6	7.0	Moderate	1.35	112.5	28.22	0.08	28.14	879.4	95.6	0.11
A17107 (Test #1-20)	7.7	Moderate	0.76	63.3	30.94	0.05	30.89	965.3	84.7	0.09

Sample ID	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.01**	**0.1**	**0.005**	**10**	**10**	**0.05**	**0.01**	**0.01**	**0.01**	**0.02**	**0.1**	**1**	**0.05**	**0.2**	**0.01**	**0.05**	**0.05**	**0.02**
Test 25 - Zn Ro Tail Cyc 1-3	17.59	0.77	2193	0.274	18	41	0.07	16.39	2.34	22.85	13.42	94.9	749	0.91	763.6	28.88	6.87	0.69	0.34
Test 25 - Zn Ro Tail Cyc 4-6	19.43	0.74	2163	0.164	13	27	0.07	17.72	2.29	26.56	10.59	94.8	903	0.87	894.9	28.75	6.31	0.66	0.31
Test 29 - Zn Ro Tail Cyc 1-6	20.59	0.74	2054	0.158	13	24	0.07	18.81	2.33	35.35	10.3	94.2	827	0.85	1128.4	28.90	6.58	0.66	0.31
A17107 (Test #1-20)	20.24	0.51	2723	0.1	13	15	0.09	16.40	2.09	17.57	8.55	82.4	831.0	1.05	942.90	26.25	4.75	0.34	0.28

Sample ID	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)
	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
Detection Limit:	**0.01**	**0.005**	**0.01**	**0.2**	**0.1**	**0.01**	**5**	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.2**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**
Test 25 - Zn Ro Tail Cyc 1-3	1.32	0.086	0.05	5.8	5.7	1.46	1288	83.33	0.01	0.73	429.7	43	1811.2	3.7	0.013	>10	40.89	1.1	10.9
Test 25 - Zn Ro Tail Cyc 4-6	1.40	0.090	0.05	4.5	5.5	1.43	1273	98.44	0.01	0.89	527.1	29	2035.4	3.3	0.013	>10	46.53	0.9	5.1
Test 29 - Zn Ro Tail Cyc 1-6	1.80	0.105	0.05	4.4	5.6	1.44	1281	87.94	0.01	0.81	477.6	22	2052.2	3.2	0.012	>10	47.25	1	4.7
A17107 (Test #1-20)	1.10	0.08	0.100	3.00	4.3	1.0	1181	68.47	0.01	0.65	467.60	28.0	1639	6.3	0.0	>10	57	0.70	5

Sample ID	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit:	**0.2**	**0.2**	**0.01**	**0.01**	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
Test 25 - Zn Ro Tail Cyc 1-3	2.7	55.2	<0.01	0.12	5.7	<0.005	9.2	3.36	23	3.43	4.02	3033	13.2
Test 25 - Zn Ro Tail Cyc 4-6	2.8	50.7	<0.01	0.09	5.1	<0.005	8.99	3.47	22	4.29	3.71	3618	12.5
Test 29 - Zn Ro Tail Cyc 1-6	3	51.1	<0.01	0.06	4.9	<0.005	9.24	3.51	23	3.75	3.70	4672	12.2
A17107 (Test #1-20)	3.3	35	0.02	0.1	3.2	<0.005	7.54	3.54	23	2.44	3.92	2315.00	12.6

Sample ID	Weight of dry sample used	Volume of DI water used	pH	EC	Acidity (to pH 8.3)	Alkalinity (to pH 4.5)	Dissolved Sulphate (SO_4)	Fluoride (F)	Strong Acid Dissoc. Cyanide (CN)	Weak Acid Dissoc. Cyanide (CN)	Hardness Total (as $CaCO_3$)	Aluminum dissolved	Antimony dissolved	Arsenic dissolved	Barium dissolved	Beryllium dissolved	Bismuth dissolved	Boron dissolved	Cadmium dissolved
	g	mL		µS/cm	mg $CaCO_3$/L	mg $CaCO_3$/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit:	**0.01**	**0.5**	**0.01**	**1**	**0.5**	**0.5**	**5.0 / 0.5 / 1.0**	**0.010**	**0.00050**	**0.00050**	**0.1**	**0.001**	**0.00005**	**0.00005**	**0.0001**	**0.00001**	**0.00001**	**0.001**	**0.000002**
Test 25 - Zn Ro Tail Cyc 1-3	250	750	7.31	559	37	26.5	169	0.150	0.00057	<0.00050	215.9	<0.001	0.00322	0.00035	0.0342	<0.00001	0.00001	0.007	0.0317
Test 25 - Zn Ro Tail Cyc 4-6	250	750	7.09	1362	234	24.0	613	0.200	0.00141	<0.00050	641.5	<0.001	0.0026	0.00345	0.0191	<0.00001	<0.00001	0.01	0.321
Test 29 - Zn Ro Tail Cyc 1-6	250	750	7.31	1180	62	29.0	482	0.2	0.00179	<0.00050	604.6	<0.001	0.00342	0.00156	0.0207	<0.00001	<0.00001	0.006	0.0907
A17107 (Test #1-20)	250	750	7.35	604	6	28.5	239	0.130			261	0.002	0.00268	0.00032	0.0268	<0.000010	<0.000010	0.01	0.039

Blank cells indicate parameter was not analyzed.

Sample ID	Calcium dissolved	Chromium dissolved	Cobalt dissolved	Copper dissolved	Iron dissolved	Lead dissolved	Lithium dissolved	Magnesium dissolved	Manganese dissolved	Mercury dissolved	Molybdenum dissolved	Nickel dissolved	Phosphorus dissolved	Potassium dissolved	Selenium dissolved	Silicon dissolved	Silver dissolved	Sodium dissolved	Strontium dissolved	Sulphur dissolved
	mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Detection Limit:	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.00001**	**0.00001**	**0.00002**	**0.01**	**0.01**	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**
Test 25 - Zn Ro Tail Cyc 1-3	69.2	<0.0001	0.0139	0.0058	<0.002	0.12	0.00706	10.6	0.668	<0.00001	0.00101	0.0274	0.037	3.39	0.0337	0.446	0.00002	3.93	0.101	67.7
Test 25 - Zn Ro Tail Cyc 4-6	172	<0.0001	0.103	0.0141	<0.002	0.26	0.00766	51.8	6.42	<0.00001	0.0002	0.199	0.187	7.11	0.41300	0.609	0.00006	8.45	0.534	252
Test 29 - Zn Ro Tail Cyc 1-6	180	<0.0001	0.032	0.0072	<0.002	0.143	0.00629	38	1.31	0.00001	0.00099	0.0509	0.174	6.63	0.24300	0.411	0.00047	4.56	0.196	239
A17107 (Test #1-20)	80.9	<0.00010	0.016	0.00407	<0.002	0.107	0.00741	14.3	1.41	0.00005	0.00075	0.0274	0.087	5.3	0.183	0.45	0.00019	8.51	0.181	119

Blank cells indicate parameter was not analyzed.

Sample ID	Tellurium dissolved	Thallium dissolved	Thorium dissolved	Tin dissolved	Titanium dissolved	Uranium dissolved	Vanadium dissolved	Zinc dissolved	Zirconium dissolved
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit:	**0.00005**	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
Test 25 - Zn Ro Tail Cyc 1-3	<0.00005	0.0149	<0.00001	<0.00005	<0.0002	0.000043	<0.0002	3.06	<0.00002
Test 25 - Zn Ro Tail Cyc 4-6	<0.00005	0.0568	<0.00001	<0.00005	<0.0002	0.00	<0.0002	24.40	<0.00002
Test 29 - Zn Ro Tail Cyc 1-6	<0.00005	0.0424	<0.00001	<0.00005	<0.0002	0.00	<0.0002	6.43	<0.00002
A17107 (Test #1-20)	<0.00005	0.0177	<0.000010	<0.00005	<0.0002	0.00	<0.0002	2	<0.00002

Blank cells indicate parameter was not analyzed.

APPENDIX F
AEG 2016 Overburden Samples Static Data

Sample ID	Paste pH	Fizz Rating	Total Inorganic C	Carbonate-NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	Modified Sobek NP	NP/AP
	pH Units		wt %	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
Detection Limit:			**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**1.3**	**0.5**	
TP16-05	7.73	None	<0.02	<1.7	0.01	0.01	<0.01	<0.3	3.9	>13
TP16-06	8.08	None	<0.02	<1.7	0.1	0.03	0.07	2.2	4.5	2.1
TP16-07	7.64	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	5	>16
TP16-08	7.3	None	<0.02	<1.7	0.02	0.02	<0.01	<0.3	6.8	>22
TP16-09	8.26	None	0.02	1.7	<0.01	<0.01	<0.01	<0.3	10.1	>33
TP16-11	8.37	None	0.03	2.5	<0.01	<0.01	<0.01	<0.3	12.7	>42
TP16-18	8.02	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	8.8	>29
TP16-19	7.9	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	8.1	>27
TP16-22	8.16	None	0.07	5.8	0.01	<0.01	0.01	0.3	10.7	34.2
TP16-25	7.27	None	0.02	1.7	<0.01	<0.01	<0.01	<0.3	7	>23
TP16-27	8.54	Strong	1.36	113.3	<0.01	<0.01	<0.01	<0.3	118	>390
TP16-31	8.21	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	10.2	>34
TP16-38	7.93	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	8.7	>29
TP16-44	8.43	Slight	0.13	10.8	<0.01	<0.01	<0.01	<0.3	18	>60
TP16-45	8.03	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	7.3	>24
TP16-49	8.56	Moderate	0.46	38.3	<0.01	<0.01	<0.01	<0.3	47.9	>160
TP-OEL-1	8.68	Moderate	0.47	39.2	0.01	0.01	<0.01	<0.3	42.4	>141
TP-OEL-2	7.73	None	0.02	1.7	<0.01	<0.01	<0.01	<0.3	8.2	>27
TP-OEL-3	8.65	Slight	0.33	27.5	<0.01	<0.01	<0.01	<0.3	30.9	>103
TP-OEL-4	8.63	Strong	1.15	95.8	0.01	0.01	<0.01	<0.3	95.2	>317
TP-OEL-5	8.4	None	<0.02	<1.7	0.01	0.01	<0.01	<0.3	7.7	>25
TP-OEL-6	8.71	Moderate	0.29	24.2	<0.01	<0.01	<0.01	<0.3	29.8	>99
TP-OEL-10	8.77	Strong	2.93	244	0.04	0.02	0.02	0.6	242	>805
TP-OEL-12	8.74	Moderate	0.21	17.5	0.02	0.02	<0.01	<0.3	28.8	>96
TP-OEL-13	9.19	Strong	0.85	70.8	<0.01	0.01	<0.01	<0.3	72.3	>241
TP-OEL-14	8.73	Strong	1.71	143	0.03	0.03	<0.01	<0.3	140	>465
TP-OEL-15	8.98	Strong	0.64	53.3	<0.01	<0.01	<0.01	<0.3	65.4	>218
TP-OEL-16	8.91	Strong	1.43	119	0.01	0.01	<0.01	<0.3	118	>393
TP-OEL-17	8.63	Strong	0.47	39.2	0.01	0.01	<0.01	<0.3	45.7	>152
TP-OEL-18	7.55	None	<0.02	<1.7	0.02	0.02	<0.01	<0.3	1.8	>6
TP-OEL-19	8.8	Slight	0.09	7.5	0.02	0.01	0.01	0.3	14.9	48
TP-OEL-JA50	7.76	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	5.4	>18
TP-OEL-JA51	8.65	Moderate	0.44	36.7	0.02	0.02	<0.01	<0.3	42.9	>143
TP-OEL-JA52	8.51	Slight	0.14	11.7	<0.01	<0.01	<0.01	<0.3	17.3	>57
TP-OEL-JA54	8.76	Strong	0.51	42.5	<0.01	<0.01	<0.01	<0.3	11.3	>37
TP-OEL-JA55	8.78	Strong	0.8	66.7	0.01	0.01	<0.01	<0.3	71.3	>237
TP-OEL-JA56	8.78	Strong	0.55	45.8	0.03	0.02	0.01	0.3	51.9	166
TP-OEL-JA57	8.64	Moderate	0.79	65.8	0.01	0.01	<0.01	<0.3	71.9	>239
TP-OEL-JA58	8.73	Strong	0.7	58.3	0.02	0.02	<0.01	<0.3	63.3	>211
TP-OEL-JA59	8.46	Strong	0.8	66.7	0.01	0.01	<0.01	<0.3	69.3	>231
TP-OEL-JA61	8.78	Strong	0.7	58.3	0.03	0.03	<0.01	<0.3	59.4	>198
TP-OEL-JA62	8.37	Slight	0.21	17.5	0.02	0.02	<0.01	<0.3	24.1	>80
TP-OEL-JA63	8.86	Strong	0.66	55.0	0.01	0.01	<0.01	<0.3	59.4	>198
TP-OEL-JA64	8.78	Strong	0.82	68.3	<0.01	<0.01	<0.01	<0.3	70.8	>236

Sample ID	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
TP16-05	0.92	0.85	28.2	0.006	<10	185	0.45	1.21	0.19	3.39	52.81	6.4	101	1.52	87.1	1.80	3.47	0.19	0.20	0.09	0.022
TP16-06	0.22	0.68	6.9	<0.005	<10	104	0.34	0.40	0.22	0.85	52.5	4.8	91	1.01	25.4	1.58	2.84	0.18	0.15	0.02	0.014
TP16-07	0.51	0.75	24.1	<0.005	<10	239	0.27	0.46	0.25	2.11	75.28	8.4	76	1.20	59.0	2.70	3.08	0.22	0.12	0.07	0.018
TP16-08	1.95	1.17	55.5	0.02	<10	514	0.49	1.76	0.34	2.51	52.55	10.4	98	3.31	80.9	2.37	4.71	0.20	0.15	0.19	0.032
TP16-09	0.22	1.02	8.6	<0.005	<10	159	0.35	0.22	0.75	0.85	47.09	9.8	87	1.39	21.5	2.20	4.00	0.19	0.14	0.03	0.019
TP16-11	0.18	3.58	34.6	0.007	<10	120	0.46	0.14	0.52	0.81	36.93	31.7	311	1.22	64.6	5.65	10.41	0.28	0.15	0.02	0.041
TP16-18	0.17	2.42	20.6	0.013	<10	222	0.35	0.08	0.42	0.65	65.44	23.4	72	1.13	41.3	5.40	9.43	0.30	0.15	<0.01	0.038
TP16-19	0.10	2.07	6.4	<0.005	<10	216	0.45	0.14	0.48	0.4	57.99	17.4	66	1.53	27.9	4.32	8.52	0.25	0.13	<0.01	0.035
TP16-22	0.21	1.50	26.6	<0.005	<10	288	0.47	0.19	0.56	0.89	41.24	15.0	100	1.70	45.2	3.44	5.29	0.21	0.16	0.05	0.027
TP16-25	0.14	1.41	4.5	<0.005	<10	221	0.56	0.23	0.33	0.48	64.91	11.1	94	2.69	31.2	2.47	5.58	0.24	0.12	0.02	0.023
TP16-27	0.14	2.22	15.3	<0.005	<10	109	0.26	0.11	4.39	0.41	43.96	19.9	95	0.88	34.1	4.49	7.60	0.20	0.11	0.01	0.031
TP16-31	0.19	1.53	11.2	<0.005	<10	160	0.55	0.32	0.48	0.63	54.54	12.8	98	2.40	34.4	3.11	6.02	0.22	0.08	0.02	0.026
TP16-38	0.16	1.45	6.7	<0.005	<10	258	0.56	0.24	0.44	0.45	48.59	12.4	110	3.40	39.3	2.59	5.83	0.21	0.10	0.02	0.028
TP16-44	0.14	1.15	5.0	<0.005	<10	212	0.50	0.26	0.76	0.35	72.77	8.7	94	2.46	22.2	2.20	4.83	0.22	0.14	0.01	0.022
TP16-45	0.21	1.13	8.5	<0.005	<10	196	0.51	0.35	0.41	0.4	67.1	8.9	88	2.55	23.3	2.29	4.72	0.22	0.11	0.01	0.020
TP16-49	0.13	4.65	95.7	<0.005	<10	255	0.43	0.04	2.02	0.33	34	38.0	178	3.57	95.4	9.30	17.23	0.41	0.10	<0.01	0.062
TP-OEL-1	0.16	1.00	16.6	<0.005	<10	341	0.30	0.15	1.62	0.46	25.88	9.3	96	0.56	25.5	2.33	2.99	0.10	0.14	0.05	0.017
TP-OEL-2	0.11	1.06	43.0	0.01	<10	131	0.33	0.13	0.43	0.78	39.21	10.4	91	0.80	21.5	2.83	4.97	0.12	0.06	0.02	0.032
TP-OEL-3	0.20	1.08	18.7	<0.005	<10	245	0.36	0.20	1.23	0.77	40.89	11.1	70	1.48	32.8	2.54	3.82	0.12	0.16	0.05	0.021
TP-OEL-4	0.13	0.75	27.6	<0.005	<10	222	0.24	0.12	3.30	0.54	22.31	7.8	84	0.52	21.0	2.20	2.34	0.07	0.10	0.03	0.016
TP-OEL-5	0.29	0.88	21.4	<0.005	<10	233	0.29	0.19	0.39	0.67	32.21	8.6	96	0.94	30.4	2.13	2.94	0.10	0.07	0.04	0.018
TP-OEL-6	0.10	1.10	9.4	<0.005	<10	157	0.47	0.32	1.10	0.26	39.79	9.5	119	2.06	24.5	2.29	4.14	0.12	0.06	0.01	0.024
TP-OEL-10	0.08	2.25	21.3	<0.005	<10	43	0.14	0.04	8.81	0.32	26.93	13.4	87	0.21	23.0	4.12	7.12	0.17	<0.02	<0.01	0.049
TP-OEL-12	0.08	4.64	26.4	<0.005	<10	44	0.23	0.03	1.71	0.28	11.13	44.3	75	0.28	35.5	9.51	10.03	0.27	0.04	<0.01	0.017
TP-OEL-13	0.06	0.97	20.2	<0.005	<10	120	0.18	0.02	2.94	0.22	35.37	13.0	110	0.43	30.8	2.24	2.97	0.09	<0.02	<0.01	0.019
TP-OEL-14	0.33	1.87	19.4	<0.005	<10	128	0.26	0.12	5.38	0.9	31.92	18.4	143	0.60	74.8	4.00	5.05	0.09	0.13	<0.01	0.050
TP-OEL-15	0.05	2.12	8.9	<0.005	<10	70	0.26	0.04	2.24	0.35	48.32	20.1	90	0.54	17.1	4.90	9.68	0.17	0.08	<0.01	0.052
TP-OEL-16	1.73	0.39	13.1	<0.005	<10	91	0.18	3.72	4.48	0.25	61.8	9.4	81	0.87	21.2	1.69	1.32	0.13	0.09	<0.01	0.009
TP-OEL-17	0.21	2.53	12.8	<0.005	<10	69	0.35	0.04	1.82	0.67	68.07	21.6	71	0.74	18.7	7.26	11.73	0.23	0.03	<0.01	0.079
TP-OEL-18	0.28	0.48	10.7	<0.005	<10	88	0.25	0.81	0.12	1.21	42.65	5.2	71	0.83	34.2	1.34	1.80	0.09	0.15	0.03	0.032
TP-OEL-19	0.05	1.23	3.5	<0.005	<10	377	0.30	0.03	0.60	0.2	46.71	7.4	127	2.36	12.2	3.34	6.72	0.16	0.07	<0.01	0.041
TP-OEL-JA50	0.02	1.95	1.3	<0.005	<10	89	0.54	0.02	0.18	0.03	38.59	27.9	64	0.30	70.8	4.26	6.07	0.13	0.14	<0.01	0.019
TP-OEL-JA51	0.14	0.89	9.8	<0.005	<10	325	0.31	0.15	1.48	0.45	23.51	7.9	100	0.64	21.3	1.93	2.66	0.07	0.07	0.04	0.015
TP-OEL-JA52	0.21	1.09	25.5	<0.005	<10	275	0.44	0.25	0.78	0.5	40.75	10.1	102	1.62	28.4	2.50	4.28	0.13	0.11	0.05	0.026
TP-OEL-JA54	0.15	0.92	18.3	<0.005	<10	258	0.28	0.12	1.93	0.41	30.37	8.4	89	0.73	21.9	2.04	2.78	0.08	0.06	0.05	0.016
TP-OEL-JA55	0.18	0.96	9.0	<0.005	<10	370	0.38	0.34	2.44	0.64	25.28	7.0	98	1.01	19.7	1.73	2.82	0.07	0.12	0.06	0.017
TP-OEL-JA56	0.20	0.87	10.1	<0.005	<10	633	0.42	0.17	1.82	0.59	24.32	7.8	107	1.10	23.9	1.76	2.95	0.08	0.15	0.05	0.017
TP-OEL-JA57	0.21	1.12	15.7	<0.005	<10	351	0.41	0.15	2.32	0.62	30.23	10.0	102	1.05	31.8	2.53	3.11	0.08	0.08	0.14	0.021
TP-OEL-JA58	0.19	0.95	10.2	<0.005	<10	605	0.37	0.14	2.19	0.59	26.31	7.1	102	0.91	20.5	1.90	2.82	0.07	0.11	0.06	0.017
TP-OEL-JA59	0.21	1.14	12.4	<0.005	<10	418	0.44	0.21	2.34	0.76	31.91	9.5	74	1.25	27.7	2.29	3.36	0.09	0.11	0.08	0.021
TP-OEL-JA61	0.15	0.93	8.6	<0.005	<10	649	0.37	0.15	2.10	0.41	24.92	6.3	87	1.06	20.7	1.98	2.74	0.08	0.14	0.04	0.018
TP-OEL-JA62	0.21	1.19	11.7	<0.005	<10	451	0.45	0.19	0.94	0.52	29.99	9.8	88	1.19	36.6	2.36	3.46	0.10	0.10	0.10	0.020
TP-OEL-JA63	0.16	0.77	11.5	<0.005	<10	333	0.29	0.11	2.16	0.51	25.96	7.2	91	0.68	21.3	1.78	2.43	0.07	0.09	0.07	0.014
TP-OEL-JA64	0.06	1.89	4.3	<0.005	<10	240	0.32	0.07	2.95	0.23	28.79	8.4	55	0.75	14.7	2.71	4.75	0.08	0.08	0.04	0.018

Sample ID	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)
	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
TP16-05	0.29	26.6	10.2	0.41	267	2.25	0.02	0.71	15.5	461	101.9	21.7	<0.001	0.01	2.28	2.9	0.4	1.2	11	0.03	0.04
TP16-06	0.28	24.4	8.2	0.35	291	2.18	0.02	0.97	9.1	455	26.7	17.5	<0.001	0.12	0.28	1.7	0.6	0.6	10.2	0.02	0.15
TP16-07	0.24	33.1	6.3	0.37	722	2.68	0.02	0.90	15.7	812	74.2	13.7	<0.001	0.01	0.97	2.5	0.4	0.4	13.2	0.02	0.12
TP16-08	0.38	25.0	13.1	0.73	448	1.68	0.03	1.01	26.7	718	135.4	35.6	<0.001	0.02	23.74	4	1.2	0.9	15.8	0.02	0.11
TP16-09	0.21	20.1	10.2	0.62	446	1.50	0.03	1.90	20.9	1365	31.5	16.3	<0.001	<0.01	0.68	3.9	<0.2	0.7	23.1	0.03	0.09
TP16-11	0.16	20.4	19.0	3.59	902	1.70	0.02	0.88	140.3	1228	22.3	14.7	<0.001	<0.01	0.31	16.8	0.6	0.5	19	0.03	0.1
TP16-18	0.22	26.7	15.6	1.63	1017	2.34	0.02	0.99	28.8	1633	23.2	14.8	<0.001	<0.01	0.12	8.5	0.9	0.4	20.3	0.05	0.09
TP16-19	0.23	23.1	14.9	1.31	755	1.24	0.02	1.11	20.4	1436	15.5	20.8	<0.001	<0.01	0.12	6.1	0.5	0.6	20.9	0.02	0.07
TP16-22	0.24	20.0	17.9	0.92	752	2.75	0.03	0.52	50.6	1139	13.0	17.1	<0.001	0.02	0.63	5.7	0.3	0.7	30.5	<0.01	0.08
TP16-25	0.36	31.0	17.5	0.83	446	1.16	0.03	0.95	29.1	780	17.6	31.6	<0.001	<0.01	0.23	4.7	<0.2	0.9	16.5	0.03	0.07
TP16-27	0.18	22.2	12.2	1.63	1141	1.05	0.02	0.42	37.5	1224	12.6	12.9	<0.001	<0.01	0.13	8.2	0.4	0.3	156.5	0.02	0.06
TP16-31	0.33	25.8	14.6	0.94	562	1.47	0.02	1.13	30.9	975	23.6	29.4	<0.001	<0.01	0.19	5.4	0.3	0.7	19	0.03	0.05
TP16-38	0.38	25.0	20.9	0.89	584	1.48	0.03	0.96	38.7	845	17.7	33.7	<0.001	<0.01	0.17	5.5	0.2	0.8	17.7	0.01	0.07
TP16-44	0.42	34.2	16.3	0.61	454	1.23	0.03	0.72	24.2	670	19.0	31.0	<0.001	<0.01	0.20	4	0.4	0.8	24.2	0.01	0.04
TP16-45	0.37	31.6	14.6	0.6	524	1.68	0.03	1.61	22.7	778	18.5	29.2	<0.001	<0.01	0.24	3.8	<0.2	0.8	16.9	0.01	0.06
TP16-49	0.51	16.5	34.8	3.26	1367	1.10	0.02	0.77	106.0	1519	3.9	36.0	0.001	<0.01	0.14	21	0.7	0.6	63.6	0.05	0.06
TP-OEL-1	0.13	11.3	9.7	0.69	562	2.04	0.03	0.15	33.6	1017	8.0	6.5	0.001	0.03	0.62	2.7	0.3	0.4	47.6	<0.01	0.02
TP-OEL-2	0.13	15.3	11.9	0.59	576	2.73	0.03	0.37	23.4	1327	15.0	7.7	0.001	0.01	0.37	4.2	0.5	0.7	24.4	<0.01	0.1
TP-OEL-3	0.18	19.3	10.5	0.77	421	1.98	0.02	0.25	39.2	1232	16.1	12.4	<0.001	0.01	0.70	3.9	0.4	0.6	41.1	<0.01	0.08
TP-OEL-4	0.12	9.6	6.9	0.82	631	2.31	0.02	0.13	24.9	1053	10.5	6.0	<0.001	0.02	0.38	2.4	0.4	0.4	74	<0.01	0.08
TP-OEL-5	0.15	14.0	9.3	0.6	444	2.06	0.02	0.25	31.5	1032	20.6	9.4	0.001	0.02	0.56	2.9	0.4	0.5	17.9	<0.01	0.06
TP-OEL-6	0.29	18.5	14.3	0.85	413	1.69	0.04	0.39	35.6	705	10.0	18.8	0.001	<0.01	0.20	3.5	0.3	1	36.3	<0.01	0.07
TP-OEL-10	0.01	10.7	12.9	2.17	1181	1.14	0.01	0.07	28.7	1196	9.7	0.6	<0.001	0.06	0.10	12.5	0.5	0.4	470.4	<0.01	0.07
TP-OEL-12	0.02	4.2	27.0	3.17	1478	1.14	<0.01	0.33	36.4	1610	4.1	1.1	0.001	0.04	0.18	5.1	0.4	0.5	70.1	<0.01	0.05
TP-OEL-13	0.11	12.9	6.0	0.7	815	1.79	0.03	0.13	28.4	1028	3.6	4.6	0.001	0.01	<0.05	4.4	0.5	0.3	97.7	<0.01	0.05
TP-OEL-14	0.19	14.0	8.5	1.49	1577	4.24	0.01	<0.05	47.1	1885	121.3	6.3	0.001	0.05	0.09	7.3	0.7	0.2	223.7	<0.01	0.05
TP-OEL-15	0.08	17.5	8.2	1.52	711	1.18	0.02	0.15	17.1	1260	7.1	3.6	0.001	0.02	<0.05	13.2	0.4	0.5	66.3	<0.01	0.05
TP-OEL-16	0.27	28.2	1.9	0.12	1234	2.44	0.01	0.30	24.4	806	119.8	9.9	<0.001	0.02	0.05	1.5	0.5	0.3	113.5	<0.01	0.07
TP-OEL-17	0.12	28.9	13.2	1.51	922	2.01	0.02	0.20	18.8	1695	2.7	8.0	0.001	0.03	<0.05	15.5	0.7	0.5	63.6	<0.01	0.06
TP-OEL-18	0.18	18.4	4.4	0.19	385	1.37	0.01	0.23	9.2	361	65.9	9.5	<0.001	0.03	0.32	1.4	0.3	0.4	6.8	<0.01	0.04
TP-OEL-19	0.38	18.8	8.4	0.55	397	2.14	0.03	0.33	5.7	949	2.7	18.9	<0.001	0.03	<0.05	5.5	0.4	1.1	25.9	<0.01	0.03
TP-OEL-JA50	0.12	17.2	26.3	0.8	1798	0.63	0.03	<0.05	40.3	779	1.5	5.3	<0.001	<0.01	0.07	2.6	0.3	<0.2	10.6	<0.01	0.04
TP-OEL-JA51	0.14	10.3	9.8	0.76	421	1.31	0.02	0.13	44.4	716	7.9	7.7	<0.001	0.03	0.65	2.3	0.3	0.4	77.8	<0.01	0.04
TP-OEL-JA52	0.23	19.3	13.6	0.68	484	2.37	0.03	0.36	46.8	935	12.6	16.2	0.001	0.02	1.30	4	0.4	0.9	28.8	<0.01	0.05
TP-OEL-JA54	0.13	13.4	8.2	0.67	399	2.01	0.03	0.18	35.1	1027	8.6	7.0	<0.001	0.02	0.62	2.6	0.3	0.7	55.9	<0.01	0.04
TP-OEL-JA55	0.18	11.1	10.1	0.91	346	1.73	0.03	0.20	33.4	841	9.3	10.5	0.002	0.03	0.74	2.4	0.4	0.7	69.1	<0.01	0.02
TP-OEL-JA56	0.16	10.4	12.3	0.76	419	2.23	0.03	0.26	46.1	825	10.7	11.7	0.003	0.05	0.72	2.8	0.5	0.7	74.3	<0.01	0.05
TP-OEL-JA57	0.22	13.2	10.0	1.15	537	2.42	0.02	0.20	47.5	1016	10.8	10.4	0.002	0.03	1.37	3.2	0.6	0.4	85.5	<0.01	0.04
TP-OEL-JA58	0.18	11.4	9.5	0.8	476	2.34	0.03	0.24	32.8	946	9.5	9.7	0.002	0.03	0.76	2.5	0.5	0.6	78	<0.01	0.03
TP-OEL-JA59	0.20	14.1	12.9	1	480	2.19	0.02	0.19	38.9	835	12.2	11.0	0.002	0.03	0.97	2.9	0.4	0.5	70.4	<0.01	0.03
TP-OEL-JA61	0.17	10.8	12.3	0.85	497	1.96	0.03	0.25	25.7	891	8.8	11.0	0.002	0.05	0.61	2.4	0.5	0.7	76	<0.01	0.03
TP-OEL-JA62	0.19	13.2	10.4	0.86	569	3.39	0.02	0.19	52.1	736	13.2	10.4	0.002	0.05	1.04	3.1	0.4	0.5	36.2	<0.01	0.03
TP-OEL-JA63	0.15	11.3	7.5	0.82	380	1.66	0.02	0.12	36.2	921	8.0	7.7	0.001	0.02	0.86	2.3	0.4	0.4	69.5	<0.01	0.04
TP-OEL-JA64	0.13	12.6	22.4	1.41	482	0.72	0.03	0.11	13.5	575	7.1	4.6	<0.001	0.03	0.29	3.8	0.3	0.4	72.4	<0.01	0.05

Sample ID	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
TP16-05	14.5	0.061	0.25	1.5	22	12.86	11.53	569	8.2
TP16-06	14.1	0.039	0.15	1.89	12	6.00	10.88	143	7.9
TP16-07	13.5	0.047	0.17	1.35	22	3.92	9.37	369	6.6
TP16-08	12.6	0.122	0.49	1.35	39	3.22	13.72	440	7.9
TP16-09	8.7	0.178	0.14	0.91	35	2.82	8.73	134	7.0
TP16-11	6.4	0.231	0.14	0.97	134	2.18	11.23	121	6.4
TP16-18	9.3	0.105	0.13	0.96	104	1.88	18.26	167	7.1
TP16-19	9.1	0.16	0.16	0.84	83	1.62	12.83	121	6.3
TP16-22	7.2	0.081	0.14	0.94	61	1.47	11.27	120	8.0
TP16-25	13.2	0.129	0.22	1.3	46	1.38	16.31	109	6.2
TP16-27	6.7	0.091	0.11	0.56	74	1.06	16.67	157	4.7
TP16-31	11.6	0.121	0.2	1.18	56	1.12	16.05	138	5.3
TP16-38	10.4	0.134	0.25	1.23	54	1.03	15.45	103	5.1
TP16-44	16	0.106	0.22	1.18	36	1.09	15.23	81	6.2
TP16-45	13.9	0.095	0.2	0.99	36	1.34	13.32	82	6.8
TP16-49	2.6	0.41	0.3	2.2	210	0.87	13.75	115	4.8
TP-OEL-1	4.3	0.03	0.08	0.89	31	0.13	7.53	68	6.8
TP-OEL-2	6.9	0.045	0.07	1.17	37	0.12	10.87	108	5.3
TP-OEL-3	7.4	0.068	0.13	0.76	39	0.23	11.47	114	8.8
TP-OEL-4	4	0.026	0.05	0.74	26	0.07	8.12	75	6.6
TP-OEL-5	5.9	0.057	0.1	0.72	32	0.12	10.85	112	5.7
TP-OEL-6	8.5	0.1	0.14	1.04	36	0.91	11.30	64	4.6
TP-OEL-10	2	0.032	<0.02	0.14	102	<0.05	8.86	57	1.8
TP-OEL-12	0.6	0.555	<0.02	0.18	151	<0.05	11.63	182	1.8
TP-OEL-13	3	0.054	0.02	0.66	28	<0.05	12.80	40	1.6
TP-OEL-14	3.8	0.009	0.05	1.91	90	0.07	8.02	164	9.0
TP-OEL-15	6.6	0.079	<0.02	0.5	141	<0.05	15.16	150	5.9
TP-OEL-16	11	0.01	0.09	0.64	6	<0.05	18.98	73	7.6
TP-OEL-17	8	0.014	0.03	1.1	173	<0.05	30.57	157	3.5
TP-OEL-18	11.6	0.027	0.11	1.02	12	<0.05	8.40	312	9.2
TP-OEL-19	6.6	0.101	0.14	0.68	43	<0.05	13.22	82	5.6
TP-OEL-JA50	7.6	<0.005	<0.02	0.72	20	<0.05	4.28	93	11.4
TP-OEL-JA51	4.8	0.026	0.1	0.81	29	0.06	7.30	65	5.8
TP-OEL-JA52	8	0.069	0.13	1.12	38	0.26	11.22	71	7.7
TP-OEL-JA54	5	0.045	0.08	0.69	32	0.20	8.25	59	5.6
TP-OEL-JA55	5	0.035	0.14	0.92	38	0.34	8.62	76	6.6
TP-OEL-JA56	6	0.036	0.15	1.02	33	0.19	10.54	66	8.0
TP-OEL-JA57	5.4	0.036	0.12	1.09	42	0.09	8.87	88	7.2
TP-OEL-JA58	5	0.033	0.11	1.01	36	0.15	8.52	75	7.7
TP-OEL-JA59	6.3	0.036	0.16	1.39	42	0.21	9.96	93	7.9
TP-OEL-JA61	6.9	0.046	0.12	0.97	34	0.10	9.46	65	7.6
TP-OEL-JA62	5.6	0.041	0.16	0.92	56	0.13	8.58	88	7.9
TP-OEL-JA63	4.3	0.033	0.09	0.88	34	0.08	7.77	63	6.0
TP-OEL-JA64	4.3	0.043	0.06	0.47	29	<0.05	9.10	67	6.2

Sample ID	Weight of dry sample used	Volume of DI water used	pH	EC	Acidity (to pH 8.3)	Alkalinity (to pH 4.5)	Dissolved Sulphate (SO_4)	Fluoride (F)	Dissolved Organic Carbon	Hardness Total (as $CaCO_3$)	Aluminum dissolved	Antimony dissolved	Arsenic dissolved	Barium dissolved	Beryllium dissolved	Bismuth dissolved	Boron dissolved	Cadmium dissolved	Calcium dissolved	Chromium dissolved	Cobalt dissolved
	g	mL	pH units	µS/cm	mg $CaCO_3$/L	mg $CaCO_3$/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
TP16-05	250	750	6.4	18	15.5	3.8	2.85	0.19		5	0.282	0.00051	0.00078	0.0109	0.00002	0.00002	0.003	0.000358	1.28	0.0006	0.000147
TP16-06	250	750	6.6	27	10.0	8.5	2.23	0.048		8	0.032	0.00009	0.00036	0.0072	<0.00001	<0.00001	0.003	0.000075	2.70	<0.0001	0.000041
TP16-07	250	750	5.9	11	11.5	1.8	0.59	0.038		3	0.044	0.00014	0.00049	0.0039	<0.00001	<0.00001	0.003	0.000085	1.05	<0.0001	0.000041
TP16-08	250	750	5.7	60	7.3	1.0	2.7	0.046		9	0.108	0.00445	0.00046	0.0405	<0.00001	<0.00001	0.003	0.001200	2.86	0.0002	0.000173
TP16-11	250	750	6.3	12	7.5	3.5	<0.50	0.049		5	0.087	0.00017	0.00084	0.0072	0.00001	<0.00001	0.004	0.000054	1.89	0.0004	0.000147
TP16-18	250	750	6.2	7	7.0	2.0	<0.50	0.049		2	0.022	<0.00005	0.00015	0.0036	<0.00001	<0.00001	0.002	0.000011	0.72	<0.0001	0.00005
TP16-44	250	750	7.4	42	5.8	19.0	0.51	0.12		14	0.116	0.00009	0.0002	0.0124	<0.00001	<0.00001	0.002	0.000008	4.87	0.0003	0.000049
TP16-49	250	750	7.8	51	3.0	24.0	<0.50	0.075		20	0.103	0.00005	0.0025	0.0077	<0.00001	<0.00001	0.003	0.000004	7.61	0.0002	0.000098
TP-OEL-1	250	750	7.8	50	4.5	25.0	<1.0	0.13	4.2	23	0.205	0.00031	0.00087	0.0376	<0.000010	<0.000010	0.002	0.000025	7.81	0.00014	0.000032
TP-OEL-4	250	750	8.8	38	<0.5	20.0	<1.0	0.1	2.6	17	0.034	0.00007	0.00063	0.026	<0.000010	<0.000010	0.002	<0.000002	6.05	<0.00010	<0.000005
TP-OEL-6	250	750	7.8	45	3.3	21.5	<1.0	0.082	3.9	20	0.094	0.00011	0.00054	0.0167	<0.000010	<0.000010	0.001	0.000003	6.91	0.00023	0.000035
TP-OEL-10	250	750	8.8	51	<0.5	22.5	<1.0	0.038		21	0.237	0.00022	0.00371	0.0111	<0.000010	<0.000010	0.004	0.000010	7.93	<0.00010	0.000021
TP-OEL-12	250	750	7.9	62	2.5	27.0	2.3	0.05		26	0.33	0.00069	0.00178	0.0312	<0.000010	<0.000010	0.004	0.000010	9.48	<0.00010	0.000069
TP-OEL-13	250	750	8.2	65	0.5	29.0	1.3	0.058		26	0.25	0.00013	0.0022	0.0053	<0.000010	<0.000010	0.006	0.000002	9.92	<0.00010	0.00003
TP-OEL-14	250	750	8.3	67	0.5	30.0	<1.0	0.086		28	0.143	0.00022	0.00117	0.0025	<0.000010	<0.000010	0.003	0.000026	10.60	0.00012	0.000025
TP-OEL-15	250	750	8.3	62	0.3	28.8	<1.0	0.056		25	0.294	0.00008	0.00056	0.0057	<0.000010	<0.000010	0.002	0.000005	9.39	<0.00010	0.000033
TP-OEL-16	250	750	8.6	60	<0.5	26.5	<1.0	0.061		23	0.171	0.00007	0.00047	0.0021	<0.000010	<0.000010	0.002	0.000003	8.95	<0.00010	0.000007
TP-OEL-17	250	750	7.8	69	1.5	31.0	1.1	0.065		28	0.176	0.00007	0.00065	0.007	<0.000010	<0.000010	0.003	0.000003	10.60	<0.00010	0.000016
TP-OEL-19	250	750	8.0	79	4.0	28.0	7.8	0.072		29	0.145	0.00008	0.00058	0.0598	<0.000010	<0.000010	0.006	0.000005	11.00	<0.00010	0.000028
TP-OEL-JA51	250	750	8.1	44	1.5	22.0	<1.0	0.066	3.6	22	0.121	0.00018	0.00067	0.0436	<0.000010	<0.000010	0.001	0.000007	7.66	0.00016	0.000027
TP-OEL-JA54	250	750	8.5	45	<0.5	22.8	<1.0	0.046	2.3	20	0.157	0.00012	0.0013	0.0412	<0.000010	<0.000010	0.001	0.000002	7.23	0.00023	0.000035
TP-OEL-JA56	250	750	8.0	55	2.0	25.5	<1.0	0.18	4.1	25	0.115	0.00053	0.00072	0.0268	<0.000010	<0.000010	0.002	0.000009	7.95	0.00047	0.000065
TP-OEL-JA61	250	750	8.7	58	<0.5	25.5	2.8	0.2	2.7	24	0.115	0.00045	0.00104	0.08	<0.000010	<0.000010	0.003	0.000006	7.72	0.00016	0.000044
TP-OEL-JA64	250	750	7.8	60	2.0	29.0	<1.0	0.063	4.1	27	0.301	0.00025	0.00096	0.0462	<0.000010	<0.000010	0.002	0.000009	10.10	0.00018	0.000066

Blank cells indicate parameter was not analyzed.

Sample ID	Copper dissolved	Iron dissolved	Lead dissolved	Lithium dissolved	Magnesium dissolved	Manganese dissolved	Mercury dissolved	Molybdenum dissolved	Nickel dissolved	Phosphorus dissolved	Potassium dissolved	Selenium dissolved	Silicon dissolved	Silver dissolved	Sodium dissolved	Strontium dissolved	Sulphur dissolved	Tellurium dissolved	Thallium dissolved	Thorium dissolved	Tin dissolved
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
TP16-05	0.0052	0.444	0.00271	0.00127	0.466	0.0046	<0.00001	0.00036	0.00074	<0.010	0.832	0.0005	1.23	0.00004	0.224	0.004	0.696	<0.00005	0.000009	0.00031	<0.00005
TP16-06	0.0037	0.042	0.00034	0.00063	0.343	0.00793	<0.00001	0.00113	0.00028	0.01	1.350	0.0002	0.40	0.00004	0.197	0.0088	0.720	<0.00005	0.000009	0.00002	<0.00005
TP16-07	0.0035	0.096	0.00148	0.00067	0.101	0.00669	<0.00001	0.00018	0.00033	<0.010	0.386	0.0002	0.45	0.00007	0.232	0.0031	<0.500	<0.00005	0.000005	0.00012	<0.00005
TP16-08	0.0036	0.161	0.00123	0.00171	0.414	0.0176	0.00001	0.00005	0.00142	<0.010	1.200	0.0001	1.12	<0.00001	4.930	0.0122	0.883	<0.00005	0.000014	0.00009	<0.00005
TP16-11	0.0065	0.121	0.00036	0.00029	0.097	0.00604	<0.00001	0.0007	0.00151	<0.010	0.227	0.0001	0.49	0.00008	0.170	0.0066	<0.500	<0.00005	<0.000004	0.00019	<0.00005
TP16-18	0.0012	0.037	0.0002	0.00018	0.052	0.00419	<0.00001	0.00021	0.00014	0.012	0.281	<0.0001	0.38	0.00008	0.173	0.0034	<0.500	<0.00005	<0.000004	0.00002	<0.00005
TP16-44	0.0009	0.154	0.00023	0.00205	0.405	0.00199	<0.00001	0.00258	0.00024	<0.010	0.934	<0.0001	1.25	<0.00001	0.223	0.0111	<0.500	<0.00005	<0.000004	0.00012	<0.00005
TP16-49	0.0011	0.069	0.00006	0.00026	0.183	0.00244	<0.00001	0.0017	0.00020	0.011	0.631	<0.0001	0.69	0.00001	0.160	0.0164	<0.500	<0.00005	<0.000004	0.00003	<0.00005
TP-OEL-1	0.0017	0.041	0.00009	0.00009	0.765	0.00107	<0.00001	0.00129	0.00016	0.011	0.195	0.00015	0.42	0.000031	0.111	0.0155	<0.5	<0.00005	0.000011	0.000013	<0.00005
TP-OEL-4	0.0002	0.004	<0.00005	0.0004	0.557	0.00015	<0.00001	0.00258	<0.00002	<0.010	0.434	0.00023	0.45	<0.000010	0.068	0.0155	<0.5	<0.00005	0.000004	<0.000010	<0.00005
TP-OEL-6	0.0014	0.076	0.00071	0.00068	0.548	0.00159	<0.00001	0.00269	0.00040	<0.010	0.959	0.00015	0.89	0.000031	0.161	0.0176	<0.5	<0.00005	0.000007	0.000035	<0.00005
TP-OEL-10	0.0010	0.006	0.00062	0.00012	0.398	0.00095	<0.00001	0.00313	0.00020	<0.010	0.166	0.00038	0.69	0.000019	0.186	0.0345	<0.5	<0.00005	0.000027	<0.000010	<0.00005
TP-OEL-12	0.0023	0.006	0.00013	0.00022	0.539	0.00342	<0.00001	0.00304	0.00022	0.011	0.540	0.00051	0.60	0.000012	0.071	0.0291	0.900	<0.00005	0.000022	<0.000010	<0.00005
TP-OEL-13	0.0018	0.004	0.00011	0.00008	0.186	0.00143	<0.00001	0.00239	0.00023	<0.010	0.714	0.00065	0.84	0.000015	0.873	0.0311	0.600	<0.00005	0.000066	<0.000010	<0.00005
TP-OEL-14	0.0011	0.008	0.00039	0.00028	0.402	0.00163	<0.00001	0.00862	0.00011	0.01	0.814	0.00036	0.95	0.000013	0.266	0.0313	<0.5	<0.00005	0.000004	0.000012	<0.00005
TP-OEL-15	0.0017	0.012	0.00013	0.00023	0.385	0.00316	<0.00001	0.00187	0.00015	<0.010	1.090	0.00022	0.80	0.000013	0.538	0.0229	<0.5	<0.00005	0.000046	<0.000010	<0.00005
TP-OEL-16	0.0007	0.005	0.0001	0.0007	0.2	0.00074	<0.00001	0.00596	0.00009	<0.010	1.700	0.00033	0.95	<0.000010	0.156	0.0205	<0.5	<0.00005	<0.000004	0.000013	<0.00005
TP-OEL-17	0.0008	0.005	<0.00005	0.00206	0.366	0.00235	<0.00001	0.00353	0.00010	<0.010	1.220	0.00027	1.12	<0.000010	0.436	0.0363	<0.5	<0.00005	0.000015	<0.000010	<0.00005
TP-OEL-19	0.0017	0.014	0.00008	0.00063	0.343	0.00556	<0.00001	0.0032	0.00017	<0.010	1.880	0.00046	0.97	<0.000010	0.988	0.0462	2.500	<0.00005	<0.000004	<0.000010	<0.00005
TP-OEL-JA51	0.0014	0.015	<0.00005	0.00008	0.821	0.00077	<0.00001	0.00149	0.00034	0.018	0.466	0.00028	0.64	0.00004	0.170	0.0303	<0.5	<0.00005	<0.000004	<0.000010	<0.00005
TP-OEL-JA54	0.0010	0.081	0.00013	0.0002	0.551	0.0015	<0.00001	0.00197	0.00022	0.01	0.296	0.00011	0.86	0.000025	0.210	0.0148	<0.5	<0.00005	<0.000004	0.000018	<0.00005
TP-OEL-JA56	0.0011	0.092	0.00027	0.00117	1.16	0.00161	<0.00001	0.00704	0.00088	0.011	0.832	0.00205	1.60	0.000011	0.258	0.0255	<0.5	<0.00005	0.000006	0.000044	<0.00005
TP-OEL-JA61	0.0007	0.04	0.00009	0.00137	1.21	0.00124	<0.00001	0.00826	0.00028	0.015	1.280	0.002	1.40	0.00001	0.295	0.0467	0.700	<0.00005	0.000007	0.000017	<0.00005
TP-OEL-JA64	0.0022	0.081	0.00023	0.00019	0.377	0.00371	<0.00001	0.00091	0.00026	0.018	0.675	0.00012	0.90	0.000018	0.549	0.0229	<0.5	<0.00005	0.000007	0.000029	<0.00005

Blank cells indicate parameter was not analyzed.

Sample ID	Titanium dissolved	Uranium dissolved	Vanadium dissolved	Zinc dissolved	Zirconium dissolved
	mg/L	mg/L	mg/L	mg/L	mg/L
TP16-05	0.0153	0.000039	0.0007	0.046	0.00033
TP16-06	0.0010	0.000122	<0.0002	0.004	0.00011
TP16-07	0.0012	0.000101	<0.0002	0.005	0.00038
TP16-08	0.0061	0.000023	0.0003	0.061	0.00016
TP16-11	0.0027	0.000205	0.0003	0.002	0.00138
TP16-18	0.0009	0.000013	<0.0002	<0.001	0.00009
TP16-44	0.0061	0.000068	0.0004	0.001	0.00011
TP16-49	0.0024	0.000081	0.0007	<0.001	0.00010
TP-OEL-1	0.0010	0.000105	<0.0002	0.002	0.00021
TP-OEL-4	<0.0002	0.000067	<0.0002	<0.0010	<0.00002
TP-OEL-6	0.0025	0.000493	0.0004	0.002	0.00009
TP-OEL-10	<0.0002	0.000070	0.0004	<0.0010	<0.00002
TP-OEL-12	0.0004	0.000021	0.0004	<0.0010	<0.00002
TP-OEL-13	<0.0002	0.000238	0.0002	<0.0010	<0.00002
TP-OEL-14	<0.0002	0.000682	0.0005	0.001	0.00003
TP-OEL-15	<0.0002	0.000171	0.0004	<0.0010	<0.00002
TP-OEL-16	<0.0002	0.000180	<0.0002	0.001	<0.00002
TP-OEL-17	<0.0002	0.000371	0.0003	<0.0010	<0.00002
TP-OEL-19	<0.0002	0.000383	<0.0002	<0.0010	<0.00002
TP-OEL-JA51	0.0005	0.000459	0.0002	0.042	0.00003
TP-OEL-JA54	0.0015	0.000086	0.0004	0.001	0.00010
TP-OEL-JA56	0.0026	0.000827	0.0005	0.001	0.00029
TP-OEL-JA61	0.0012	0.000605	0.0005	0.002	0.00010
TP-OEL-JA64	0.0024	0.000167	0.0006	<0.0010	0.00030

Blank cells indicate parameter was not analyzed.

APPENDIX G.
Composition of Trickle Leach Columns

Column C-1

Sample ID	Geodomain	Weight used for composite	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP
		kg	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t
		Detection limit:	**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**0.3**	**0.5**
B00264304	AK RHYv	2.25	0.58	48.3	0.02	0.01	0.02	0.6	44.7
B00264317	AK RHYv	2.25	2.21	184.2	0.21	0.03	0.18	5.6	159.0
B00264318	AK RHYv	2.25	1.14	95.0	0.26	0.02	0.24	7.5	94.7
B00264323	AK RHYc	2.25	0.54	45.0	0.01	0.01	0.01	0.3	54.2
B00264347	AK RHYv	2.25	0.37	30.8	0.05	0.02	0.03	0.9	34.9
B00264348	AK RHYv	2.25	0.59	49.2	0.26	0.02	0.24	7.5	54.4
B00264349	AK RHYv	2.25	0.91	75.8	0.46	0.03	0.43	13.4	89.5
B00264363	AK RHYv	2.25	0.81	67.5	0.47	0.02	0.45	14.1	85.0
B00264375	AK RHYv	2.25	0.82	68.3	0.27	0.01	0.27	8.4	71.9
B00264406	AK RHYv	2.25	0.72	60.0	0.35	0.01	0.35	10.9	68.9
B00264431	AK RHYv	2.25	0.30	25.0	0.24	0.01	0.24	7.5	32.1
B00264434	AK RHYv	2.25	0.57	47.5	0.07	0.01	0.07	2.2	45.5

Sample ID	Geodomain	Weight used for composite	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Uranium	Zinc
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		Detection limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
B00264304	AK RHYv	2.25	0.13	1.3	0.06	109.2	8.9	0.50	0.99	30
B00264317	AK RHYv	2.25	0.09	0.5	0.01	15.8	4.9	0.1	1.34	42
B00264318	AK RHYv	2.25	0.11	1.1	0.01	12.1	6.0	0.3	2.17	16
B00264323	AK RHYc	2.25	0.025	0.1	0.01	3.8	7.8	0.1	1.27	24
B00264347	AK RHYv	2.25	0.11	3.3	0.14	15.9	16.5	0.50	2.48	24
B00264348	AK RHYv	2.25	0.025	0.1	0.13	17.4	2.9	0.1	1.51	39
B00264349	AK RHYv	2.25	0.025	3.4	0.18	6.0	3.4	0.50	0.43	53
B00264363	AK RHYv	2.25	0.09	1.2	0.35	9.4	3.9	0.1	1.10	74
B00264375	AK RHYv	2.25	0.025	0.6	0.42	69.0	3.1	1.1	0.93	80
B00264406	AK RHYv	2.25	0.025	0.2	0.17	3.4	4.0	0.3	1.15	27
B00264431	AK RHYv	2.25	0.28	0.5	0.05	15.0	4.6	0.1	1.54	18
B00264434	AK RHYv	2.25	0.13	0.1	0.08	2.9	2.0	0.1	1.33	26

Column C-2

Sample ID	Geodomain	Weight used for composite	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		kg	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
		Detection limit:	0.02	1.7	0.01	0.01	0.01	0.3	0.5	
B00264215	PY AK RHYc	2.08	0.59	49.2	0.74	0.01	0.74	23.1	62.4	2.7
B00264254	PY AK RHYc	2.08	0.52	43.3	0.51	0.02	0.49	15.3	52.1	3.4
B00264264	AK RHYc	2.08	0.84	70.0	1.11	0.03	1.08	33.8	83.7	2.5
B00264297	AK RHYv	2.08	0.29	24.2	0.51	0.01	0.51	15.9	39.0	2.4
B00264311	AK RHYv	2.08	0.62	51.7	0.88	0.01	0.88	27.5	59.8	2.2
B00264334	PY AK RHYv	2.08	0.39	32.5	0.67	0.01	0.67	20.9	42.5	2.0
B00264350	PY AK RHYc	2.08	0.43	35.8	0.56	0.02	0.54	16.9	44.8	2.7
B00264408	PY AK RHYc	2.08	0.72	60.0	1.08	0.02	1.06	33.1	79.9	2.4
B00264424	PY AK RHYv	2.08	0.40	33.3	0.49	0.01	0.49	15.3	42.3	2.8
B00264428	PY AK RHYv	2.08	0.73	60.8	0.82	0.01	0.82	25.6	68.2	2.7
B00264435	AK RHYv	2.08	0.96	80.0	0.58	0.01	0.58	18.1	77.4	4.3
B00264442	PY AK RHYv	2.08	1.36	113.3	1.33	0.01	1.33	41.6	104.9	2.5
B00264448	PY AK RHYv	2.08	0.95	79.2	0.97	0.02	0.95	29.7	90.4	3.0

Sample ID	Geodomain	Weight used for composite	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Uranium	Zinc
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		Detection limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
B00264215	PY AK RHYc	2.08	1.05	10.2	0.21	8.4	17.4	1.1	2.08	55
B00264254	PY AK RHYc	2.08	0.09	0.3	0.05	13.8	3.2	0.60	0.92	13
B00264264	AK RHYc	2.08	0.39	0.3	0.49	115.1	27.3	0.1	2.10	109
B00264297	AK RHYv	2.08	0.06	0.3	0.01	9.4	2.4	0.3	1.34	38
B00264311	AK RHYv	2.08	0.71	2.0	0.01	4.8	5.8	0.4	0.59	57
B00264334	PY AK RHYv	2.08	0.025	0.9	0.21	11.2	6.0	0.3	2.24	49
B00264350	PY AK RHYc	2.08	0.22	0.5	0.13	8.0	5.0	0.1	1.07	48
B00264408	PY AK RHYc	2.08	0.025	0.3	0.92	45.2	3.2	1.0	0.51	110
B00264424	PY AK RHYv	2.08	0.08	0.3	0.13	50.1	2.3	0.50	0.80	74
B00264428	PY AK RHYv	2.08	0.06	0.2	0.49	8.9	132.9	1.1	1.29	112
B00264435	AK RHYv	2.08	0.88	5.1	0.15	3.7	8.9	0.50	0.77	32
B00264442	PY AK RHYv	2.08	2.25	9.9	0.15	10.7	9.4	0.1	0.83	54
B00264448	PY AK RHYv	2.08	0.025	0.3	0.35	32.6	6.1	1.7	0.76	34

Column C-3

Sample ID	Geodomain	Weight used for composite	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		kg	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
		Detection limit:	**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**0.3**	**0.5**	
B00264221	MU PY RHY	2.08	0.05	4.2	0.86	0.01	0.86	26.9	5.7	0.2
B00264257	MU PY RHY	2.08	1.23	102.5	1.55	0.01	1.55	48.4	113.7	2.3
B00264274	MU PY RHY	2.08	0.01	0.9	0.62	0.02	0.60	18.8	3.8	0.2
B00264290	MU PY RHY	2.08	0.44	36.7	0.79	0.01	0.79	24.7	43.9	1.8
B00264291	MU PY RHY	2.08	0.41	34.2	2.09	0.01	2.09	65.3	49.1	0.8
B00264292	MU PY RHY	2.08	0.12	10.0	0.71	0.01	0.71	22.2	18.1	0.8
B00264293	MU PY RHY	2.08	0.24	20.0	0.72	0.01	0.72	22.5	28.1	1.2
B00264294	MU PY RHY	2.08	0.10	8.3	1.00	0.01	1.00	31.3	10.4	0.3
B00264295	MU PY RHY	2.08	0.33	27.5	1.33	0.01	1.33	41.6	37.4	0.9
B00264301	MU PY RHY	2.08	0.11	9.2	0.95	0.01	0.95	29.7	14.4	0.5
B00264346	MU PY RHY	2.08	0.60	50.0	2.11	0.01	2.11	65.9	62.6	0.9
B00264367	MU PY RHY	2.08	0.44	36.7	0.61	0.01	0.61	19.1	44.7	2.3
B00264439	MU PY RHY	2.08	0.06	5.0	1.41	0.02	1.39	43.4	10.0	0.2

Sample ID	Geodomain	Weight used for composite	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Uranium	Zinc
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		Detection limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
B00264221	MU PY RHY	2.08	0.44	17.0	0.66	42.6	35.8	0.7	4.25	90
B00264257	MU PY RHY	2.08	3.2	8.9	0.18	7.4	37.0	0.3	3.12	12
B00264274	MU PY RHY	2.08	1.38	34.7	5.60	35.2	364.5	0.1	3.59	941
B00264290	MU PY RHY	2.08	2.66	9.2	2.92	58.0	777.5	4.2	3.25	438
B00264291	MU PY RHY	2.08	74.5	231	10.7	121	1572	8.9	5.81	1604
B00264292	MU PY RHY	2.08	2.02	7.8	0.55	32.0	103.7	1.9	1.85	118
B00264293	MU PY RHY	2.08	3.11	8.5	0.58	59.5	90.0	1.4	3.77	120
B00264294	MU PY RHY	2.08	1.47	43.5	1.34	27.0	175.3	0.1	3.66	290
B00264295	MU PY RHY	2.08	16.7	5.1	0.01	47.6	162.8	0.4	5.73	39
B00264301	MU PY RHY	2.08	1.1	11.0	0.26	18.0	131.2	2.2	4.43	74
B00264346	MU PY RHY	2.08	17.2	644	15.9	475	2738	8.0	18.8	2426
B00264367	MU PY RHY	2.08	0.37	0.4	0.30	19.1	11.5	1.1	0.72	46
B00264439	MU PY RHY	2.08	5.04	12.5	0.29	60.0	333.6	6.0	4.93	33

Column C-4

Sample ID	Geodomain	Weight used for composite	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		kg	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
		Detection limit:	0.02	1.7	0.01	0.01	0.01	0.3	0.5	
B00264261	CARB MDS/RHY	2.25	0.21	17.5	3.58	0.02	3.56	111.3	33.5	0.3
B00264275	CARB MDS/RHY	2.25	0.02	1.7	0.34	0.02	0.32	10.0	10.0	1.0
B00264284	CARB MDS/RHY	2.25	0.68	56.7	0.72	0.01	0.72	22.5	66.3	2.9
B00264285	CARB MDS/RHY	2.25	0.16	13.3	1.05	0.01	1.05	32.8	21.6	0.7
B00264286	CARB MDS/RHY	2.25	0.19	15.8	1.48	0.01	1.48	46.3	24.6	0.5
B00264298	CARB MDS/RHY	2.25	0.15	12.5	1.61	0.03	1.58	49.4	16.9	0.3
B00264331	CARB MDS/RHY	2.25	0.41	34.2	0.78	0.01	0.78	24.4	37.4	1.5
B00264355	CARB MDS/RHY	2.25	0.02	1.7	2.13	0.01	2.13	66.6	5.2	0.1
B00264360	CARB MDS/RHY	2.25	0.53	44.2	2.59	0.03	2.56	80.0	50.7	0.6
B00264403	CARB MDS/RHY	2.25	0.01	0.9	0.22	0.01	0.22	6.9	2.0	0.3
B00264404	CARB MDS/RHY	2.25	0.04	3.3	1.38	0.01	1.38	43.1	7.5	0.2
B00264415	CARB MDS/RHY	2.25	0.04	3.3	0.86	0.02	0.84	26.3	4.2	0.2

Sample ID	Geodomain	Weight used for composite	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Uranium	Zinc
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		Detection limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
B00264261	CARB MDS/RHY	2.25	58.1	89.4	33.20	176.6	160.6	9.0	1.84	5150
B00264275	CARB MDS/RHY	2.25	1.98	14.8	7.51	157.8	844.5	10.1	3.82	1071
B00264284	CARB MDS/RHY	2.25	0.38	0.7	0.24	11.5	76.5	2.0	1.71	75
B00264285	CARB MDS/RHY	2.25	0.86	15.7	0.06	5.2	16.1	1.7	2.28	28
B00264286	CARB MDS/RHY	2.25	5.57	77.5	0.97	25.8	143.7	6.9	4.86	173
B00264298	CARB MDS/RHY	2.25	43.1	9.5	21.44	120.4	2598.7	30.6	3.86	2719
B00264331	CARB MDS/RHY	2.25	1.28	6.1	0.31	18.1	26.7	1.2	8.15	65
B00264355	CARB MDS/RHY	2.25	4.73	34.7	9.45	59.1	153.0	12.4	3.15	1389
B00264360	CARB MDS/RHY	2.25	0.46	6.6	1.59	45.0	63.4	3.2	0.84	309
B00264403	CARB MDS/RHY	2.25	1.33	1.8	0.24	14.6	28.8	0.9	3.71	37
B00264404	CARB MDS/RHY	2.25	14.4	17.6	0.14	23.5	59.3	2.2	3.18	28
B00264415	CARB MDS/RHY	2.25	4.16	6.6	0.18	330.1	914.3	26.1	4.74	108

Column C-5

Sample ID	Geodomain	Weight used for composite	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		kg	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
		Detection limit:	**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**0.3**	**0.5**	
B00264218	PY AK RHYc	2.10	0.28	23.3	2.23	0.01	2.23	69.7	32.6	0.5
B00264244	PY AK RHYc	2.10	0.06	5.0	0.80	0.01	0.80	25.0	8.8	0.4
B00264283	PY AK RHYc	2.10	0.20	16.7	0.85	0.01	0.85	26.6	29.6	1.1
B00264329	PY AK RHYv	1.89	0.43	35.8	2.25	0.02	2.23	69.7	52.8	0.8
B00264333	PY AK RHYv	2.10	0.32	26.7	3.08	0.01	3.08	96.3	45.7	0.5
B00264373	PY AK RHYv	2.10	0.59	49.2	2.41	0.02	2.39	74.7	72.6	1.0
B00264401	PY AK RHYv	2.10	0.01	0.9	1.93	0.01	1.93	60.3	4.2	0.1
B00264402	PY AK RHYv	2.10	0.32	26.7	1.46	0.02	1.44	45.0	39.6	0.9
B00264412	PY AK RHYv	2.10	0.11	9.2	1.74	0.01	1.74	54.4	16.7	0.3
B00264427	PY AK RHYv	2.10	0.63	52.5	2.10	0.02	2.08	65.0	62.6	1.0
B00264440	PY AK RHYv	2.10	0.13	10.8	2.09	0.01	2.09	65.3	17.2	0.3
B00264455	PY AK RHYv	2.10	0.62	51.7	1.21	0.02	1.19	37.2	49.2	1.3
B00264456	PY AK RHYv	2.10	0.33	27.5	1.13	0.01	1.13	35.3	31.9	0.9

Sample ID	Geodomain	Weight used for composite	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Uranium	Zinc
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		Detection limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
B00264218	PY AK RHYc	2.10	0.66	9.2	2.18	121.2	21.9	3.1	0.71	177
B00264244	PY AK RHYc	2.10	0.28	0.5	1.16	1558.5	21.3	4.9	5.67	110
B00264283	PY AK RHYc	2.10	1.6	2.0	0.07	29.1	9.3	0.1	1.92	40
B00264329	PY AK RHYv	1.89	1.05	12.3	0.25	21.4	147.5	0.8	1.17	61
B00264333	PY AK RHYv	2.10	0.37	19.9	0.28	8.5	42.6	2.6	0.43	41
B00264373	PY AK RHYv	2.10	0.23	7.6	0.17	173.5	39.0	4.8	0.69	16
B00264401	PY AK RHYv	2.10	2.0	25.1	0.07	7.3	29.8	0.2	1.93	32
B00264402	PY AK RHYv	2.10	5.7	690	0.48	43.5	36.0	0.9	0.48	71
B00264412	PY AK RHYv	2.10	1.44	14.4	6.55	64.4	387.6	2.7	0.73	1266
B00264427	PY AK RHYv	2.10	0.23	0.4	0.70	54.9	5.7	1.9	1.01	217
B00264440	PY AK RHYv	2.10	0.49	30.2	0.68	24.1	74.9	0.60	0.99	140
B00264455	PY AK RHYv	2.10	0.86	0.3	0.12	8.6	11.3	0.1	0.74	36
B00264456	PY AK RHYv	2.10	0.3	0.8	0.08	5.60	11.4	0.1	0.66	43.0

Column C-6

Sample ID	Geodomain	Weight used for composite	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		kg	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
		Detection limit:	0.02	1.7	0.01	0.01	0.01	0.3	0.5	
B00264251	AK RHYv	2.08	0.21	17.5	0.93	0.01	0.93	29.1	22.6	0.8
B00264267	PY AK RHYc	2.08	0.81	67.5	1.34	0.02	1.32	41.3	67.2	1.6
B00264276	CARB MDS/RHY	2.08	0.04	3.3	1.24	0.02	1.22	38.1	12.7	0.3
B00264319	PY AK RHYc	2.08	0.94	78.3	2.43	0.02	2.41	75.3	100.5	1.3
B00264328	PY AK RHYv	2.08	0.71	59.2	0.55	0.01	0.55	17.2	62.0	3.6
B00264332	PY CL RHY	2.08	0.79	65.8	2.39	0.02	2.37	74.1	73.1	1.0
B00264336	PY CL RHY	2.08	0.46	38.3	1.19	0.01	1.19	37.2	44.6	1.2
B00264337	CARB MDS/RHY	2.08	0.54	45.0	1.12	0.01	1.12	35.0	51.1	1.5
B00264356	CARB MDS/RHY	2.08	0.56	46.7	1.75	0.01	1.75	54.7	51.4	0.9
B00264369	PY AK RHYv	2.08	0.59	49.2	1.19	0.01	1.19	37.2	65.4	1.8
B00264444	CA CL MAF	2.08	0.09	7.5	0.64	0.01	0.64	20.0	10.6	0.5
B00264451	AK RHYv	2.08	0.24	20.0	0.91	0.01	0.91	28.4	30.2	1.1
B00264459	PY AK RHYv	2.08	0.30	25.0	2.20	0.01	2.20	68.8	35.9	0.5

Sample ID	Geodomain	Weight used for composite	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Uranium	Zinc
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		Detection limit:	0.05	0.1	0.01	0.2	0.2	0.2	0.05	2
B00264251	AK RHYv	2.08	0.25	0.7	0.22	81.2	2.0	1.4	1.05	29
B00264267	PY AK RHYc	2.08	0.39	6.6	0.57	34.8	15.2	0.7	0.59	82
B00264276	CARB MDS/RHY	2.08	9.69	19.4	92.8	161	4130	45.5	7.24	16630
B00264319	PY AK RHYc	2.08	2.73	12.0	0.01	14.8	10.9	0.1	0.72	41
B00264328	PY AK RHYv	2.08	0.1	0.1	0.41	36.4	13.3	0.5	0.96	56
B00264332	PY CL RHY	2.08	17.3	525	1.61	231.4	34.2	4.8	4.94	230
B00264336	PY CL RHY	2.08	1.14	9.8	0.05	4.4	47.4	0.7	3.00	25
B00264337	CARB MDS/RHY	2.08	3.16	13.8	0.06	4.5	21.6	0.7	4.91	14
B00264356	CARB MDS/RHY	2.08	11.6	2445	9.36	25.7	477	11.7	4.24	1652
B00264369	PY AK RHYv	2.08	0.2	0.7	0.45	5.1	66.6	1.0	0.96	95
B00264444	CA CL MAF	2.08	0.16	11.9	0.03	4.6	63.1	0.4	7.69	2
B00264451	AK RHYv	2.08	0.025	1.0	0.14	52.4	4.0	1.4	2.33	18
B00264459	PY AK RHYv	2.08	1.7	22.0	6.17	10.00	45.5	1.4	4.71	1144.0

Column C-7

Sample ID	Geodomain	Weight used for composite	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		kg	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
		Detection limit:	**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**0.3**	**0.5**	
B00264214	PY AK RHYc	1.81	0.01	0.9	1.02	0.01	1.02	31.9	2.1	0.1
B00264242	CARB MDS/RHY	2.10	0.08	6.7	1.16	0.01	1.16	36.3	4.7	0.1
B00264268	CARB MDS/RHY	2.10	0.01	0.9	1.35	0.01	1.35	42.2	4.5	0.1
B00264287	MU PY RHY	2.10	0.01	0.9	0.27	0.01	0.27	8.4	1.7	0.2
B00264288	MU PY RHY	2.10	0.01	0.9	1.87	0.01	1.87	58.4	1.5	0.0
B00264299	PY CL RHY	2.10	0.01	0.9	0.90	0.01	0.90	28.1	4.0	0.1
B00264313	CARB MDS/RHY	2.10	0.02	1.7	0.53	0.01	0.53	16.6	7.4	0.4
B00264330	CARB MDS/RHY	2.10	0.01	0.9	0.78	0.01	0.78	24.4	2.5	0.1
B00264352	CARB MDS/RHY	2.10	0.02	1.7	1.43	0.01	1.43	44.7	2.3	0.1
B00264353	CARB MDS/RHY	2.10	0.08	6.7	0.82	0.01	0.82	25.6	4.4	0.2
B00264416	PY CL RHY	2.10	0.01	0.9	0.15	0.01	0.15	4.7	3.0	0.6
B00264417	PY CL RHY	2.10	0.05	4.2	1.34	0.02	1.32	41.3	5.5	0.1
B00264453	PY CL RHY	2.10	0.04	3.3	0.17	0.01	0.17	5.3	7.2	1.4

Sample ID	Geodomain	Weight used for composite	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Uranium	Zinc
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		Detection limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
B00264214	PY AK RHYc	1.81	2.39	28.7	0.62	11.1	20.5	0.2	1.53	71
B00264242	CARB MDS/RHY	2.10	2.22	19.7	0.43	29.3	46.7	2.1	8.39	91
B00264268	CARB MDS/RHY	2.10	2.85	57.9	0.55	34.2	57.9	2.5	4.76	73
B00264287	MU PY RHY	2.10	4.64	11.3	0.06	11.1	116.6	0.8	2.64	25
B00264288	MU PY RHY	2.10	23.3	25.0	1.33	185	778	15.4	3.33	164
B00264299	PY CL RHY	2.10	5.52	15.1	0.01	14.2	32.3	5.0	4.77	20
B00264313	CARB MDS/RHY	2.10	17.2	629	1.07	28.4	197	4.5	4.56	295
B00264330	CARB MDS/RHY	2.10	4.07	5.1	0.31	32.3	43.1	4.5	5.72	50
B00264352	CARB MDS/RHY	2.10	9.52	26.7	0.55	27.9	156	3.1	6.76	85
B00264353	CARB MDS/RHY	2.10	2.05	14.6	0.71	8.4	130	2.2	2.39	145
B00264416	PY CL RHY	2.10	1.19	64.6	0.01	26.5	5.2	1.5	3.05	103
B00264417	PY CL RHY	2.10	1.03	6.1	16.4	583	333	63.2	6.39	2041
B00264453	PY CL RHY	2.10	2.36	822	3.42	21.4	60.8	5.8	6.01	565

Column C-8

Sample ID	Geodomain	Weight used for composite	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		kg	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
		Detection limit:	**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**0.3**	**0.5**	
B00293251	RHYi	2.70	0.16	13.3	0.84	0.05	0.79	24.7	19.0	0.8
B00293252	RHYi	2.70	0.09	7.5	1.71	0.04	1.67	52.2	16.2	0.3
B00293253	RHYi	2.70	0.56	46.7	0.76	0.04	0.72	22.5	52.0	2.3
B00293254	RHYi	2.70	0.05	4.2	1.04	0.03	1.01	31.6	8.2	0.3
B00293256	RHYi	2.70	0.25	20.8	0.59	0.03	0.56	17.5	25.5	1.5
B00293257	RHYi	2.70	0.24	20.0	0.48	0.04	0.44	13.8	24.7	1.8
B00293258	RHYi	2.70	0.05	4.2	0.94	0.03	0.91	28.4	9.6	0.3
B00293260	RHYi	2.70	0.01	0.9	0.69	0.08	0.61	19.1	5.6	0.3
B00293261	RHYi	2.70	0.01	0.9	1.18	0.04	1.14	35.6	2.9	0.1
B00293262	RHYi	2.70	0.15	12.5	0.59	0.03	0.56	17.5	17.0	1.0

Sample ID	Geodomain	Weight used for composite	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Uranium	Zinc
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		Detection limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
B00293251	RHYi	2.70	0.93	20.1	3.31	17.9	53.0	0.1	1.85	575
B00293252	RHYi	2.70	2.12	36.7	0.08	10.5	59.4	0.1	4.21	41
B00293253	RHYi	2.70	0.99	19.7	0.21	5.1	94.6	0.1	2.61	24
B00293254	RHYi	2.70	0.57	9.5	0.04	5.6	16.2	0.1	2.25	10
B00293256	RHYi	2.70	9.10	62.8	0.54	19.1	159.7	1.0	4.88	69
B00293257	RHYi	2.70	1.12	13.1	0.05	2.1	6.7	1.1	4.91	24
B00293258	RHYi	2.70	1.28	13.3	0.04	9.1	10.6	0.1	4.51	11
B00293260	RHYi	2.70	4.55	10.5	0.06	9.2	15.8	1.0	3.28	25
B00293261	RHYi	2.70	2.07	16.6	0.94	6.0	18.5	0.1	2.94	189
B00293262	RHYi	2.70	1.43	4.1	0.02	6.5	7.1	0.1	1.56	6

Column C-9

Sample ID	Geodomain	Weight used for composite	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		kg	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
		Detection limit:	**0.02**	**1.7**	**0.01**	**0.01**	**0.01**	**0.3**	**0.5**	
Q930102	MDS	2.08	3.22	268	0.13	0.01	0.13	4.1	281	69
Q930105	MDS	2.08	0.90	75.0	0.23	0.02	0.21	6.6	81.8	12
Q930106	MDS	2.08	3.21	268	0.13	0.01	0.13	4.1	257	63
Q930107	MDS	2.08	2.50	208	0.27	0.02	0.25	7.8	192	25
Q930110	MDS	2.08	0.98	81.7	0.06	0.01	0.06	1.9	79.3	42
Q930148	MDS	2.08	0.65	54.2	0.91	0.02	0.89	27.8	71.8	2.6
Q930150	MDS	2.08	0.42	35.0	0.22	0.01	0.22	6.9	38.0	5.5
Q930152	MDS	2.08	1.38	115	0.59	0.03	0.56	17.5	120	6.8
Q930153	MDS	2.08	1.15	95.8	0.28	0.02	0.26	8.1	91.4	11
Q930154	MDS	2.08	2.10	175	0.37	0.01	0.37	11.6	169	15
Q930159	MDS	2.08	1.66	138	0.37	0.03	0.34	10.6	139	13
Q930160	MDS	2.08	0.26	21.7	0.33	0.01	0.33	10.3	29.5	2.9
Q930172	MDS	2.08	2.46	205	0.28	0.02	0.26	8.1	201	25

Sample ID	Geodomain	Weight used for composite	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Uranium	Zinc
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		Detection limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
Q930102	MDS	2.08	0.14	11.2	0.29	12.0	16.0	0.7	0.57	41
Q930105	MDS	2.08	0.11	0.5	0.16	8.3	3.7	0.1	1.11	41
Q930106	MDS	2.08	0.03	3.5	0.37	14.5	10.9	0.2	0.84	58
Q930107	MDS	2.08	0.05	0.7	0.16	30.6	8.5	0.5	0.84	46
Q930110	MDS	2.08	0.10	14.2	0.39	32.1	4.8	0.4	0.56	144
Q930148	MDS	2.08	0.10	1.3	0.23	76.1	3.7	2.2	3.89	66
Q930150	MDS	2.08	0.03	2.2	0.06	36.2	2.7	0.6	1.29	101
Q930152	MDS	2.08	0.03	1.6	0.45	115	8.4	0.5	1.04	72
Q930153	MDS	2.08	0.22	5.1	0.11	22.2	3.9	1	0.69	104
Q930154	MDS	2.08	0.12	0.5	0.37	22.4	14.1	1.1	0.77	57
Q930159	MDS	2.08	0.03	13.4	0.32	66.7	59.1	1.4	1.1	134
Q930160	MDS	2.08	0.07	4.1	0.06	29.9	1.9	0.7	2.02	107
Q930172	MDS	2.08	0.03	0.4	0.22	48.5	8.1	0.5	1.13	65

Column C-10

Sample ID	Geodomain	Weight used for composite	Total Inorganic Carbon	Carbonate NP	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP	NP	NP/AP
		kg	wt.%	kg $CaCO_3$/t	wt.%	wt.%	wt.%	kg $CaCO_3$/t	kg $CaCO_3$/t	
		Detection limit:	0.02	1.7	0.01	0.01	0.01	0.3	0.5	
B00293252	RHYi	1.1	0.09	7.5	1.71	0.04	1.67	52.2	16.2	0.3
B00264289	MU PY RHY	1.1	0.27	22.5	3.56	0.01	3.56	111	38.6	0.3
B00264354	PY AK RHYc	1.1	0.12	10.0	4.93	0.01	4.93	154	18.9	0.1
B00264266	PY AK RHYv	1.1	0.40	33.3	3.97	0.01	3.97	124	44.2	0.4
B00264429	PY AK RHYv	1.1	0.40	33.3	3.05	0.01	3.05	95.3	43.6	0.5
B00264249	MU PY RHY	1.1	0.20	16.7	3.44	0.03	3.41	107	28.2	0.3
B00264248	CARB MDS/RHY	1.1	0.01	0.9	4.72	0.02	4.70	147	0.2	0.0
B00264219	CARB MDS/RHY	1.1	1.20	100	4.41	0.02	4.39	137	123	0.9
A17107 (Test #1-20)	Tailings	18.2	0.76	63.3	30.9	0.05	30.9	965	84.7	0.1

Sample ID	Geodomain	Weight used for composite	Antimony	Arsenic	Cadmium	Copper	Lead	Selenium	Uranium	Zinc
		kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		Detection limit:	**0.05**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**0.05**	**2**
B00293252	RHYi	1.1	2.12	36.7	0.08	10.5	59.4	0.1	4.21	41
B00264289	MU PY RHY	1.1	19.5	26.0	48.4	99.4	8813	21.2	6.05	5955
B00264354	PY AK RHYc	1.1	37.0	198	9.08	361	144	27.7	3.64	1326
B00264266	PY AK RHYv	1.1	0.56	23.9	0.28	13.2	32.8	1.4	0.80	43
B00264429	PY AK RHYv	1.1	0.32	11.9	0.08	6.30	31.1	0.3	1.61	17
B00264249	MU PY RHY	1.1	4.74	146	13.9	3294	199	29.2	5.30	1415
B00264248	CARB MDS/RHY	1.1	3.27	156	0.20	66.4	141	13.5	5.15	25
B00264219	CARB MDS/RHY	1.1	1.87	20.4	0.33	13.5	686	3.1	1.06	112
A17107 (Test #1-20)	Tailings	18.2	57.3	2723	17.6	943	1639	5.0	3.54	2315

APPENDIX H.
Trickle Leach Columns Data

Trickle Leach Column	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
C-1	29-Feb-16	0	1000	573.5	7.81	184	4	31	24.7	6	0.13	0.22	<0.10	0.22	0.41			46	0.088	0.00044	0.00052
C-1	07-Mar-16	1	1000	979.5	7.62	461	3.2	54.5	133	17	0.26	<0.10	<0.10	<0.10	0.02			171	0.041	0.00273	0.00072
C-1	14-Mar-16	2	1000	977.4	7.68	400	4.5	61	107	9.6	0.25	<0.10	<0.10	<0.10	0.019			188	0.055	0.00278	0.00072
C-1	21-Mar-16	3	1000	944.6	7.58	251	5	47.5	64.2	3.5	0.12	<0.10	<0.10	<0.10	<0.0050			107	0.045	0.00149	0.00042
C-1	28-Mar-16	4	1000	970.4	7.59	284	4	65	66.8		0.16							112	0.059	0.00207	0.00053
C-1	04-Apr-16	5	1000	985.8	7.69	245	4.5	50.5	57		0.12							105	0.055	0.00173	0.00043
C-1	11-Apr-16	6	1000	950.4	7.6	228	3.8	52	51		0.11							94	0.051	0.00178	0.00046
C-1	18-Apr-16	7	1000	928.5	7.65	219	3.5	53	49.3		0.11							95	0.06	0.00156	0.00057
C-1	25-Apr-16	8	1000	958.5	7.67	234	4.5	52.5	49.8		0.091							91	0.065	0.0019	0.00067
C-1	02-May-16	9	1000	971.1	7.7	248	4	57	54.4		0.13							109	0.072	0.00158	0.00054
C-1	9-May-16	10	1000	965.4	7.7	259	4.5	56	61.9		0.11							92	0.061	0.00129	0.00066
C-1	16-May-16	11	1000	968.2	7.72	250	4.8	55.5	53.4		0.1							91	0.048	0.0012	0.00048
C-1	23-May-16	12	1000	973.5	7.72	235	5.3	54	52.3		0.09							103	0.059	0.00105	0.0005
C-1	30-May-16	13	1000	984.9	7.71	221	5.3	56.5	44.1		0.083							96	0.049	0.00106	0.00043
C-1	6-Jun-16	14	1000	979.4	7.72	258	5	58	57.4		0.095							113	0.057	0.00113	0.00042
C-1	13-Jun-16	15	1000	981.6	7.69	243	7	57	45.7		0.078							95	0.043	0.00089	0.00036
C-1	20-Jun-16	16	1000	988.7	7.7	233	10	58	41.5									96	0.04	0.00075	0.00037
C-1	27-Jun-16	17	1000	979.9	7.72	228	15	55	35.3		0.073							97	0.048	0.00071	0.00037
C-1	4-Jul-16	18	1000	983.6	7.65	227	3.5	53	42.4									91	0.042	0.00062	0.00034
C-1	11-Jul-16	19	1000	982.4	7.58	241	3	55	42.5		0.069							102	0.043	0.0006	0.00038
C-1	18-Jul-16	20	1000	985.6	7.69	200	3	50	40.7									81	0.042	0.0005	0.00032
C-1	25-Jul-16	21	1000	982.4	7.79	234	3	55.8	52		0.071							109	0.048	0.0006	0.00033
C-1	1-Aug-16	22	1000	983.4	7.78	233	3	54	44.1		0.066							100	0.043	0.00051	0.00036
C-1	08-Aug-16	23	1000	986	7.7	225	3.5	50	41.6		0.062							83	0.037	0.00043	0.00031
C-1	15-Aug-16	24	1000	996	7.72	234	4.5	55	43									98	0.038	0.00044	0.00039
C-1	22-Aug-16	25	1000	982.3	7.68	225	4	66	46		0.067							101	0.051	0.00051	0.00038
C-1	29-Aug-16	26	1000	980.4																	
C-1	05-Sep-16	27	1000	992.8	7.58	228	5	67.5	45.2		0.054							106	0.035	0.00032	0.00029
C-1	12-Sep-16	28	1000	994.1																	
C-1	19-Sep-16	29	1000	981.3	7.55	208	5.5	60	39		0.059							95	0.033	0.0003	0.00028
C-1	26-Sep-16	30	1000	978.8																	
C-1	03-Oct-16	31	1000	984.2	7.62	227	4.5	63.8	44		0.059							108	0.024	0.00035	0.00025
C-1	10-Oct-16	32	1000	986.1																	
C-1	17-Oct-16	33	1000	991.4	7.56	197	3.5	54.5	31.7		0.051							94	0.024	0.00026	0.00024
C-1	24-Oct-16	34	1000	989.1																	
C-1	31-Oct-16	35	1000	985.2	7.62	188	3.5	58.3	28.7		0.045							78	0.023	0.00019	0.00024
C-1	07-Nov-16	36	1000	987.4																	
C-1	14-Nov-16	37	1000	990.3	7.59	197	4	56.5	32		0.044							85	0.021	0.00021	0.00025
C-1	21-Nov-16	38	1000	969.8																	
C-1	28-Nov-16	39	1000	974	7.37	195	7	60	31.4		0.047							104	0.017	0.00021	0.00029

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Phosphorus (P)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**	**0.01**
C-1	29-Feb-16	0.0632	<0.00001	<0.00001	0.01	0.000013	14	<0.0001	0.000615	0.0027	<0.002	<0.00005	0.00603	2.8	0.0537	<0.000004	0.0014	0.00249	0.08
C-1	07-Mar-16	0.0423	<0.00001	<0.00001	0.018	0.000067	47.8	<0.0001	0.00122	0.0019	<0.002	<0.00005	0.0234	12.7	0.148	0.00002	0.0042	0.00189	<0.010
C-1	14-Mar-16	0.0323	<0.00001	<0.00001	0.017	0.000028	49.5	<0.0001	0.000625	0.001	<0.002	<0.00005	0.02	15.6	0.0809	0.00002	0.00396	0.00095	<0.010
C-1	21-Mar-16	0.0255	<0.00001	<0.00001	0.01	0.000021	28.6	<0.0001	0.000314	0.0011	<0.002	<0.00005	0.014	8.75	0.0535	0.000006	0.00231	0.0004	<0.010
C-1	28-Mar-16	0.0258	<0.00001	<0.00001	0.011	0.000017	29.1	<0.0001	0.000336	0.0006	0.003	<0.00005	0.0131	9.48	0.0484	0.000005	0.0023	0.00034	<0.010
C-1	04-Apr-16	0.0237	<0.00001	<0.00001	0.009	0.000015	28.6	<0.0001	0.000224	0.0007	<0.002	0.0001	0.0127	8.18	0.0403	0.00004	0.0017	0.00025	<0.010
C-1	11-Apr-16	0.0254	<0.00001	<0.00001	0.007	0.000015	25.2	<0.0001	0.000258	0.0007	<0.002	<0.00005	0.00929	7.58	0.0439	<0.000004	0.00147	0.0002	<0.010
C-1	18-Apr-16	0.0355	<0.00001	<0.00001	0.006	0.000026	25.2	<0.0001	0.000309	0.0009	<0.002	<0.00005	0.00846	7.75	0.053	<0.000004	0.00154	0.0002	<0.010
C-1	25-Apr-16	0.0351	<0.00001	<0.00001	0.004	0.000015	25.5	<0.0001	0.000303	0.0008	<0.002	<0.00005	0.00638	6.68	0.0457	0.00003	0.00127	0.0002	<0.010
C-1	02-May-16	0.0336	<0.00001	<0.00001	0.005	0.000021	28.9	<0.0001	0.00034	0.0009	<0.002	<0.00005	0.0108	8.97	0.0547	<0.000004	0.00124	0.00019	<0.010
C-1	9-May-16	0.0283	<0.00001	0.00001	0.006	0.000017	22.5	<0.0001	0.000312	0.0007	<0.002	<0.00005	0.00815	8.69	0.0511	<0.000004	0.00108	0.00016	<0.010
C-1	16-May-16	0.0268	<0.00001	<0.00001	0.004	0.000015	24.7	<0.0001	0.000288	0.0007	<0.002	<0.00005	0.00625	7.16	0.0458	<0.000004	0.00092	0.00008	<0.010
C-1	23-May-16	0.0276	<0.00001	<0.00001	0.005	0.000022	27.9	<0.0001	0.000339	0.0011	<0.002	<0.00005	0.00592	8.02	0.0532	<0.00001	0.00109	0.00015	0.01
C-1	30-May-16	0.0334	<0.00001	<0.00001	0.006	0.000017	26.2	<0.0001	0.000322	0.0009	0.005	0.00011	0.00594	7.36	0.0568	<0.00001	0.00087	0.00016	<0.010
C-1	6-Jun-16	0.035	<0.00001	<0.00001	0.006	0.000016	30.1	<0.0001	0.000323	0.001	<0.002	<0.00005	0.00787	9.16	0.0535	<0.000004	0.00118	0.00013	<0.010
C-1	13-Jun-16	0.0277	<0.00001	<0.00001	0.004	0.000012	24.2	<0.0001	0.00028	0.0007	<0.002	<0.00005	0.00693	8.3	0.043	<0.00001	0.00075	0.00011	<0.010
C-1	20-Jun-16	0.0302	<0.00001	<0.00001	0.003	0.000016	24.8	<0.0001	0.000332	0.0008	<0.002	<0.00005	0.00613	8.2	0.0475	<0.00001	0.00075	0.00016	<0.010
C-1	27-Jun-16	0.0328	<0.00001	<0.00001	0.004	0.000015	25.4	<0.0001	0.000276	0.0007	<0.002	<0.00005	0.00663	8.03	0.0465	<0.00001	0.00065	0.00009	<0.010
C-1	4-Jul-16	0.0293	<0.00001	<0.00001	0.004	0.000012	23.3	<0.0001	0.000254	0.0006	<0.002	<0.00005	0.00633	8.06	0.04	<0.00001	0.00061	0.00006	<0.010
C-1	11-Jul-16	0.037	<0.00001	<0.00001	0.007	0.000014	25.5	<0.0001	0.000289	0.0012	<0.002	0.00005	0.00621	9.4	0.0421	<0.00001	0.00071	0.00014	<0.010
C-1	18-Jul-16	0.0271	<0.00001	<0.00001	0.003	0.000014	20.3	<0.0001	0.000234	0.0013	<0.002	0.00006	0.005	7.27	0.0318	<0.00001	0.00051	0.00013	<0.010
C-1	25-Jul-16	0.0316	<0.00001	<0.00001	0.003	0.000018	26.8	<0.0001	0.000246	0.0008	<0.002	0.00007	0.00704	10.2	0.0299	<0.00001	0.00047	0.00015	<0.010
C-1	1-Aug-16	0.0305	<0.00001	<0.00001	0.004	0.000013	24.6	<0.0001	0.000212	0.001	<0.002	0.00009	0.00615	9.34	0.0261	<0.00001	0.00056	0.00025	<0.010
C-1	08-Aug-16	0.0294	<0.00001	<0.00001	0.003	0.000009	19.6	<0.0001	0.000171	0.0016	<0.002	0.00016	0.00504	8.17	0.0213	<0.00001	0.00051	0.0001	<0.010
C-1	15-Aug-16	0.028	<0.00001	<0.00001	0.002	0.000009	23.4	<0.0001	0.000195	0.0012	0.003	0.00008	0.00446	9.56	0.0199	<0.00001	0.00051	0.00014	<0.010
C-1	22-Aug-16	0.0308	<0.000010	<0.000010	0.003	0.000011	23.7	<0.00010	0.000132	0.0004	<0.002	<0.00005	0.0059	10.1	0.0125	<0.00001	0.00053	0.00009	0.013
C-1	29-Aug-16																		
C-1	05-Sep-16	0.0265	<0.00001	<0.00001	0.004	<0.000002	23.9	<0.0001	0.00008	0.00043	<0.002	<0.00005	0.0058	11.3	0.0063	<0.00001	0.00048	0.00008	<0.01
C-1	12-Sep-16																		
C-1	19-Sep-16	0.0269	<0.000010	<0.000010	0.002	0.000005	21.3	<0.00010	0.000043	0.00032	<0.002	<0.00005	0.00533	10.1	0.00307	<0.00001	0.00072	0.00007	<0.010
C-1	26-Sep-16																		
C-1	03-Oct-16	0.0303	<0.000010	<0.000010	0.002	0.00001	23.3	<0.00010	0.000058	0.0003	<0.002	<0.00005	0.00549	12	0.00414	<0.00001	0.00119	<0.00002	<0.010
C-1	10-Oct-16																		
C-1	17-Oct-16	0.0301	<0.000010	<0.000010	0.003	0.000006	20.5	<0.00010	0.000035	0.00029	0.01	<0.00005	0.00457	10.3	0.00196	<0.00001	0.0014	0.00007	<0.010
C-1	24-Oct-16																		
C-1	31-Oct-16	0.0275	<0.000010	<0.000010	0.002	0.000005	18.1	<0.00010	0.000037	0.00034	<0.002	0.00015	0.00415	8.07	0.00179	<0.00001	0.00138	0.00008	<0.010
C-1	07-Nov-16																		
C-1	14-Nov-16	0.0315	<0.000010	<0.000010	0.006	0.000003	17.9	<0.00010	0.000031	0.00062	0.011	0.00005	0.00344	9.75	0.00163	<0.00001	0.00169	0.00008	<0.010
C-1	21-Nov-16																		
C-1	28-Nov-16	0.0322	<0.000010	<0.000010	0.001	0.000009	23.1	<0.00010	0.000028	0.0003	<0.002	0.00021	0.0049	11.3	0.0006	0.00007	0.00185	0.00007	0.013

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.01	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
C-1	29-Feb-16	9.82	0.0006	0.563	<0.00001	2.54	0.0495	8.34	<0.00005	0.00004	0.00001	0.00012	<0.0002	0.00796	0.0002	<0.001	0.00005
C-1	07-Mar-16	14.2	0.0036	1.59	<0.00001	6.2	0.179	38.4	<0.00005	0.000024	0.00001	0.00011	<0.0002	0.0832	<0.0002	0.004	0.00007
C-1	14-Mar-16	14.9	0.0026	2.06	<0.00001	4.9	0.164	47.5	<0.00005	0.000019	<0.00001	0.00008	<0.0002	0.0911	<0.0002	0.003	0.00004
C-1	21-Mar-16	6.97	0.0013	1.24	<0.00001	2.52	0.105	22.9	<0.00005	0.000012	<0.00001	<0.00005	<0.0002	0.0632	<0.0002	0.002	0.00002
C-1	28-Mar-16	8.19	0.0012	1.67	<0.00001	2.21	0.122	23.9	<0.00005	0.000013	<0.00001	<0.00005	<0.0002	0.067	<0.0002	0.001	<0.00002
C-1	04-Apr-16	6.23	0.0011	1.19	0.00001	1.72	0.0915	17.7	<0.00005	0.000014	<0.00001	<0.00005	<0.0002	0.0526	<0.0002	<0.001	<0.00002
C-1	11-Apr-16	5.94	0.0008	1.26	<0.00001	1.29	0.0987	16.7	<0.00005	0.00001	<0.00001	<0.00005	<0.0002	0.0434	<0.0002	<0.001	<0.00002
C-1	18-Apr-16	6.11	0.0009	1.34	<0.00001	1.19	0.108	15.6	<0.00005	0.00001	<0.00001	0.0001	<0.0002	0.0426	<0.0002	0.002	0.00004
C-1	25-Apr-16	5.24	0.0009	1.13	<0.00001	0.823	0.108	14.3	<0.00005	0.000012	<0.00001	<0.00005	<0.0002	0.0421	<0.0002	0.001	<0.00002
C-1	02-May-16	5.72	0.0011	1.46	<0.00001	1.08	0.114	19.2	<0.00005	0.000011	<0.00001	0.00085	<0.0002	0.0391	<0.0002	<0.001	<0.00002
C-1	9-May-16	5.47	0.0009	1.31	<0.00001	0.874	0.105	19.3	<0.00005	0.000011	<0.00001	0.00013	<0.0002	0.0313	<0.0002	0.001	<0.00002
C-1	16-May-16	4.27	0.0007	1.01	<0.00001	0.656	0.0959	14.7	<0.00005	0.00001	<0.00001	0.00028	<0.0002	0.0271	<0.0002	0.002	<0.00002
C-1	23-May-16	4.97	0.0008	1.3	<0.00001	0.668	0.1	17.4	0.00008	0.000009	<0.00001	0.00019	<0.0002	0.0267	<0.0002	0.001	<0.00002
C-1	30-May-16	4.51	0.0007	1.06	<0.00001	0.756	0.125	15.4	<0.00005	0.00001	<0.00001	0.0001	<0.0002	0.0264	<0.0002	<0.001	<0.00002
C-1	6-Jun-16	4.73	0.0009	1.15	<0.00001	0.671	0.116	17.5	<0.00005	0.000012	<0.00001	<0.00005	<0.0002	0.0269	<0.0002	<0.001	<0.00002
C-1	13-Jun-16	3.88	0.0007	0.808	<0.00001	0.543	0.0934	13.2	<0.00005	0.000008	<0.00001	<0.00005	<0.0002	0.0193	<0.0002	<0.001	<0.00002
C-1	20-Jun-16	4.61	0.0007	0.847	<0.00001	0.546	0.102	13.3	<0.00005	0.000009	<0.00001	<0.00005	<0.0002	0.0214	<0.0002	<0.001	<0.00002
C-1	27-Jun-16	3.65	0.0008	0.891	<0.00001	0.481	0.0991	13.4	<0.00005	0.000009	<0.00001	<0.00005	<0.0002	0.0195	<0.0002	<0.001	<0.00002
C-1	4-Jul-16	3.44	0.0009	0.795	<0.00001	0.458	0.0904	13.5	<0.00005	0.000009	<0.00001	0.00011	<0.0002	0.0172	<0.0002	<0.001	<0.00002
C-1	11-Jul-16	3.92	0.0008	0.83	0.00005	0.509	0.113	15.1	<0.00005	0.000013	<0.00001	0.00007	<0.0002	0.0202	<0.0002	<0.001	<0.00002
C-1	18-Jul-16	3.12	0.0006	0.76	<0.00001	0.381	0.0846	12.3	<0.00005	0.000008	<0.00001	0.00006	<0.0002	0.0153	<0.0002	<0.001	<0.00002
C-1	25-Jul-16	3.83	0.0008	0.654	<0.00001	0.49	0.103	17.1	<0.00005	0.00001	<0.00001	<0.00005	<0.0002	0.0167	<0.0002	<0.001	<0.00002
C-1	1-Aug-16	3.33	0.0008	0.783	<0.00001	0.407	0.0968	15.1	<0.00005	0.00002	<0.00001	<0.00005	<0.0002	0.0152	<0.0002	0.003	<0.00002
C-1	08-Aug-16	2.72	0.0007	0.7	<0.00001	0.362	0.0902	12.7	<0.00005	0.000029	<0.00001	<0.00005	<0.0002	0.0134	<0.0002	<0.001	<0.00002
C-1	15-Aug-16	2.96	0.0009	0.671	<0.00001	0.435	0.0865	12.7	<0.00005	0.000012	<0.00001	<0.00005	<0.0002	0.014	<0.0002	<0.001	<0.00002
C-1	22-Aug-16	3.31	0.00085	0.74	<0.000010	0.4	0.102	16.6	<0.00005	0.000012	<0.000010	<0.00005	<0.0002	0.0126	<0.0002	<0.0010	<0.00002
C-1	29-Aug-16																
C-1	05-Sep-16	3.1	0.00079	0.62	<0.00001	0.41	0.0952	17.1	<0.00005	0.00001	<0.00001	<0.00005	<0.0002	0.0109	<0.0002	<0.001	<0.00002
C-1	12-Sep-16																
C-1	19-Sep-16	2.77	0.00074	0.57	<0.000010	0.327	0.0911	12.7	<0.00005	0.000016	<0.000010	<0.00005	<0.0002	0.01	<0.0002	<0.0010	<0.00002
C-1	26-Sep-16																
C-1	03-Oct-16	3.17	0.00075	0.69	0.000014	0.353	0.108	15.6	<0.00005	0.000009	<0.000010	<0.00005	<0.0002	0.011	<0.0002	<0.0010	<0.00002
C-1	10-Oct-16																
C-1	17-Oct-16	2.49	0.00054	0.54	<0.000010	0.282	0.0896	11.6	<0.00005	0.000005	<0.000010	<0.00005	<0.0002	0.0093	<0.0002	0.0011	<0.00002
C-1	24-Oct-16																
C-1	31-Oct-16	2.15	0.00049	0.45	<0.000010	0.24	0.0791	9.1	<0.00005	0.000008	<0.000010	<0.00005	<0.0002	0.00807	<0.0002	0.0011	<0.00002
C-1	07-Nov-16																
C-1	14-Nov-16	2.13	0.00054	0.47	0.000036	0.267	0.0848	10.4	<0.00005	0.000028	<0.000010	<0.00005	0.0006	0.00713	<0.0002	<0.0010	<0.00002
C-1	21-Nov-16																
C-1	28-Nov-16	2.57	0.00063	0.54	<0.000010	0.26	0.0926	12.3	0.00007	0.00001	<0.000010	<0.00005	<0.0002	0.00788	<0.0002	0.002	<0.00002

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
C-2	29-Feb-16	0	1000	507.8	7.77	264	3	37.5	41.3	11	0.16	0.11	<0.10	0.11	0.34			64	0.08	0.00403	0.0004
C-2	07-Mar-16	1	1000	991.4	7.63	610	4	51.5	174	25	0.19	0.11	<0.10	0.11	0.049			240	0.037	0.0226	0.00093
C-2	14-Mar-16	2	1000	970.3	7.67	472	4	50.5	143	12	0.21	<0.10	<0.10	<0.10	0.02			214	0.054	0.0185	0.00067
C-2	21-Mar-16	3	1000	963.1	7.65	417	4	55	128	7.2	0.15	<0.10	<0.10	<0.10	<0.0050			183	0.047	0.0158	0.00047
C-2	28-Mar-16	4	1000	974.1	7.59	338	4	58.5	89.7		0.13							126	0.064	0.0136	0.00038
C-2	04-Apr-16	5	1000	989.1	7.7	255	4	44	68.3		0.093							108	0.079	0.0097	0.00026
C-2	11-Apr-16	6	1000	970.9	7.59	263	5	45	75.8		0.09							107	0.073	0.00925	0.00026
C-2	18-Apr-16	7	1000	960.1	7.65	268	3.3	48	70.4		0.098							111	0.061	0.00917	0.00025
C-2	25-Apr-16	8	1000	956	7.68	251	4.5	46	61.6		0.079							94	0.055	0.00991	0.00025
C-2	02-May-16	9	1000	978.8	7.61	247	5	47	64.4		0.1							106	0.085	0.00891	0.00024
C-2	9-May-16	10	1000	968.8	7.63	199	4	41	46.2		0.034							69	0.083	0.00566	0.00018
C-2	16-May-16	11	1000	975.1	7.67	226	5	42	59.4		0.075							81	0.054	0.00575	0.00014
C-2	23-May-16	12	1000	978.4	7.65	227	5	40	64.5		0.063							93	0.073	0.0052	0.00016
C-2	30-May-16	13	1000	979.9	7.7	245	6	44	72.4		0.066							103	0.05	0.00587	0.00015
C-2	6-Jun-16	14	1000	983.8	7.66	250	6.5	44.5	66.7		0.071							108	0.07	0.00551	0.00013
C-2	13-Jun-16	15	1000	989.3	7.62	244	7.5	43	62.2		0.062							93	0.049	0.00453	0.0001
C-2	20-Jun-16	16	1000	979.9	7.67	233	13	44.6	58									96	0.05	0.00393	0.00011
C-2	27-Jun-16	17	1000	981.6	7.7	204	14	43	43.5		0.055							84	0.068	0.00345	0.0001
C-2	4-Jul-16	18	1000	982.3	7.57	197	4	41	44.7									78	0.059	0.00288	0.00008
C-2	11-Jul-16	19	1000	985.3	7.45	230	3	41	56.4		0.049							97	0.054	0.00319	0.00008
C-2	18-Jul-16	20	1000	989.1	7.54	231	2	42.5	66.1									93	0.042	0.00307	0.00009
C-2	25-Jul-16	21	1000	991.3	7.59	201	4	41	52.9		0.048							90	0.058	0.00271	0.00008
C-2	1-Aug-16	22	1000	988.6	7.63	220	2.5	42	52		0.052							92	0.051	0.00267	0.00009
C-2	08-Aug-16	23	1000	995.6	7.68	207	3	44.5	71.1		0.066							105	0.035	0.0031	0.00008
C-2	15-Aug-16	24	1000	980.1	7.75	213	4	44	55									95	0.041	0.00246	0.00008
C-2	22-Aug-16	25	1000	976.8	7.61	279	5	60	73		0.075							123	0.053	0.00311	0.0001
C-2	29-Aug-16	26	1000	979.3																	
C-2	05-Sep-16	27	1000	969.3	7.67	269	4.5	68.3	66.3		0.064							124	0.039	0.00226	0.00006
C-2	12-Sep-16	28	1000	973.4																	
C-2	19-Sep-16	29	1000	971.3	7.57	211	3.5	50	45		0.053							95	0.045	0.00182	0.00006
C-2	26-Sep-16	30	1000	982																	
C-2	03-Oct-16	31	1000	984.6	7.64	226	3	57	49		0.055							107	0.03	0.00201	0.00007
C-2	10-Oct-16	32	1000	991.3																	
C-2	17-Oct-16	33	1000	987.8	7.65	196	4.5	54.5	41.8		0.048							93	0.03	0.00167	0.00005
C-2	24-Oct-16	34	1000	984.7																	
C-2	31-Oct-16	35	1000	990.4	7.61	176	2.5	48	31.8		0.038							73	0.03	0.00121	<0.00005
C-2	07-Nov-16	36	1000	986.4																	
C-2	14-Nov-16	37	1000	987.1	7.57	194	2.5	48.5	43.5		0.043							87	0.021	0.00115	<0.00005
C-2	21-Nov-16	38	1000	975																	
C-2	28-Nov-16	39	1000	977.4	7.43	194	6	53	38.7		0.04							92	0.018	0.00111	0.00006

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Phosphorus (P)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**	**0.01**
C-2	29-Feb-16	0.0369	<0.00001	<0.00001	0.01	0.000023	18.5	<0.0001	0.000615	0.0019	<0.002	<0.00005	0.00913	4.38	0.0799	<0.000004	0.00157	0.00439	<0.010
C-2	07-Mar-16	0.0403	<0.00001	<0.00001	0.016	0.000106	65.2	<0.0001	0.00189	0.0018	<0.002	0.00007	0.0213	18.7	0.32	0.00001	0.00442	0.00533	<0.010
C-2	14-Mar-16	0.0284	<0.00001	<0.00001	0.014	0.00008	56.9	<0.0001	0.00101	0.0011	<0.002	<0.00005	0.0155	17.5	0.252	0.00001	0.00268	0.00216	<0.010
C-2	21-Mar-16	0.0242	<0.00001	<0.00001	0.012	0.00005	49.1	<0.0001	0.000774	0.0007	<0.002	0.00006	0.0138	14.8	0.173	0.000004	0.00213	0.00124	<0.010
C-2	28-Mar-16	0.0221	<0.00001	<0.00001	0.009	0.000046	34.4	<0.0001	0.000461	0.0005	<0.002	<0.00005	0.00918	9.77	0.131	<0.000004	0.00149	0.00057	<0.010
C-2	04-Apr-16	0.0172	<0.00001	<0.00001	0.007	0.000026	30.1	<0.0001	0.000232	0.0003	<0.002	<0.00005	0.00729	7.95	0.0941	0.00002	0.00097	0.00025	<0.010
C-2	11-Apr-16	0.0184	<0.00001	<0.00001	0.005	0.000027	29.4	<0.0001	0.000245	0.0008	<0.002	<0.00005	0.00592	8.02	0.104	<0.000004	0.00092	0.00022	<0.010
C-2	18-Apr-16	0.0211	<0.00001	<0.00001	0.005	0.000038	30.2	<0.0001	0.000284	0.0009	<0.002	<0.00005	0.00667	8.61	0.118	<0.000004	0.00095	0.00021	<0.010
C-2	25-Apr-16	0.0228	<0.00001	<0.00001	0.003	0.000028	26.7	<0.0001	0.000203	0.0004	<0.002	<0.00005	0.00401	6.71	0.0992	0.00002	0.00074	0.00016	<0.010
C-2	02-May-16	0.0214	<0.00001	<0.00001	0.004	0.00003	28.5	<0.0001	0.000228	0.0016	<0.002	<0.00005	0.0073	8.37	0.107	<0.000004	0.00076	0.00016	<0.010
C-2	9-May-16	0.0166	<0.00001	<0.00001	0.004	0.000015	18	<0.0001	0.000125	0.0006	<0.002	<0.00005	0.00433	5.84	0.0751	<0.000004	0.00047	0.00007	<0.010
C-2	16-May-16	0.0201	<0.00001	<0.00001	0.003	0.000023	22.5	<0.0001	0.000135	0.0005	<0.002	<0.00005	0.00365	5.9	0.0777	<0.000004	0.00052	0.00005	<0.010
C-2	23-May-16	0.0222	<0.00001	0.00001	0.004	0.000021	26.2	<0.0001	0.000134	0.0009	<0.002	<0.00005	0.00361	6.84	0.0872	<0.00001	0.00072	0.00009	0.01
C-2	30-May-16	0.0265	<0.00001	<0.00001	0.005	0.000029	29.2	<0.0001	0.000174	0.001	0.004	0.00009	0.00452	7.39	0.11	<0.00001	0.00081	0.00019	<0.010
C-2	6-Jun-16	0.0249	<0.00001	<0.00001	0.005	0.000021	30	<0.0001	0.000129	0.0011	<0.002	<0.00005	0.00518	7.99	0.0815	<0.000004	0.001	0.00009	<0.010
C-2	13-Jun-16	0.0192	<0.00001	<0.00001	0.003	0.000017	25	<0.0001	0.000112	0.0007	<0.002	<0.00005	0.0047	7.41	0.0673	<0.00001	0.00082	0.00007	<0.010
C-2	20-Jun-16	0.0198	<0.00001	<0.00001	0.003	0.000018	26.2	<0.0001	0.000125	0.0007	<0.002	<0.00005	0.00429	7.44	0.07	<0.00001	0.00089	0.00011	<0.010
C-2	27-Jun-16	0.0176	<0.00001	<0.00001	0.003	0.000013	23.4	<0.0001	0.000081	0.0004	<0.002	<0.00005	0.00422	6.24	0.0543	<0.00001	0.00065	0.00004	<0.010
C-2	4-Jul-16	0.0178	<0.00001	<0.00001	0.002	0.000014	21.3	<0.0001	0.000068	0.0008	<0.002	<0.00005	0.00366	5.95	0.0458	<0.00001	0.00053	<0.00002	<0.010
C-2	11-Jul-16	0.0235	<0.00001	<0.00001	0.003	0.000017	26.1	<0.0001	0.000086	0.0019	<0.002	<0.00005	0.00383	7.67	0.0575	<0.00001	0.00061	0.00008	<0.010
C-2	18-Jul-16	0.0203	<0.00001	<0.00001	0.002	0.000021	25	<0.0001	0.000107	0.0015	0.004	<0.00005	0.00442	7.47	0.0579	<0.00001	0.0006	0.00013	<0.010
C-2	25-Jul-16	0.0179	<0.00001	<0.00001	0.002	0.000013	23.7	<0.0001	0.000077	0.0013	<0.002	0.00007	0.00427	7.49	0.0464	<0.00001	0.00039	0.00005	<0.010
C-2	1-Aug-16	0.019	<0.00001	<0.00001	0.003	0.000015	24.5	<0.0001	0.000074	0.0008	<0.002	0.0001	0.00413	7.5	0.0431	<0.00001	0.00052	0.0001	<0.010
C-2	08-Aug-16	0.0226	<0.00001	<0.00001	0.003	0.000014	27.1	<0.0001	0.000096	0.0013	<0.002	0.0001	0.00505	9.12	0.0597	<0.00001	0.0006	0.00012	<0.010
C-2	15-Aug-16	0.0178	<0.00001	<0.00001	0.002	0.000015	24.5	0.0002	0.000092	0.0029	0.005	0.00007	0.00346	8.19	0.0452	<0.00001	0.0005	0.00023	<0.010
C-2	22-Aug-16	0.0271	<0.000010	<0.000010	0.004	0.00002	31.1	<0.00010	0.000093	0.0007	<0.002	<0.00005	0.006	11	0.0547	<0.00001	0.00058	0.00009	0.019
C-2	29-Aug-16																		
C-2	05-Sep-16	0.0218	<0.000010	<0.000010	0.005	0.000002	30	<0.00010	0.000081	0.0007	<0.002	<0.00005	0.0058	11.9	0.0422	<0.00001	0.00045	0.00009	<0.010
C-2	12-Sep-16																		
C-2	19-Sep-16	0.0192	<0.000010	<0.000010	0.002	0.000009	23.2	<0.00010	0.000068	0.00032	<0.002	<0.00005	0.00461	9.09	0.0351	<0.00001	0.00034	0.0001	<0.010
C-2	26-Sep-16																		
C-2	03-Oct-16	0.023	<0.000010	<0.000010	0.002	0.000013	25.5	<0.00010	0.000083	0.00034	<0.002	<0.00005	0.00476	10.5	0.0418	<0.00001	0.00038	<0.00002	<0.010
C-2	10-Oct-16																		
C-2	17-Oct-16	0.0209	<0.000010	<0.000010	0.002	0.000011	22.6	<0.00010	0.000058	0.0003	<0.002	<0.00005	0.00402	8.97	0.0342	<0.00001	0.00032	0.0001	<0.010
C-2	24-Oct-16																		
C-2	31-Oct-16	0.0177	<0.000010	<0.000010	0.001	0.000014	18.4	<0.00010	0.000046	0.00055	<0.002	0.00007	0.00336	6.61	0.0259	<0.00001	0.00023	0.00008	<0.010
C-2	07-Nov-16																		
C-2	14-Nov-16	0.0225	<0.000010	<0.000010	0.002	0.000013	20.9	<0.00010	0.000049	0.00046	<0.002	0.00006	0.00302	8.42	0.0311	<0.00001	0.00027	0.00008	<0.010
C-2	21-Nov-16																		
C-2	28-Nov-16	0.0194	<0.000010	<0.000010	0.002	0.000007	22.4	<0.00010	0.00005	0.0001	<0.002	<0.00005	0.0038	8.85	0.0292	0.00003	0.00023	0.00008	<0.010

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.01	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
C-2	29-Feb-16	15.1	0.0014	0.743	<0.00001	4.01	0.064	15	<0.00005	0.000042	<0.00001	0.0001	<0.0002	0.0121	<0.0002	<0.001	0.0001
C-2	07-Mar-16	19.7	0.0066	2	<0.00001	9.71	0.219	60	<0.00005	0.000037	<0.00001	0.00007	<0.0002	0.0707	<0.0002	0.01	0.00008
C-2	14-Mar-16	15	0.0038	2.01	<0.00001	6.09	0.174	63.4	<0.00005	0.000025	<0.00001	0.00006	<0.0002	0.0667	<0.0002	0.005	0.00003
C-2	21-Mar-16	10.9	0.0028	2.01	<0.00001	4.38	0.16	44.7	<0.00005	0.000025	<0.00001	0.00007	<0.0002	0.0634	<0.0002	0.004	0.00003
C-2	28-Mar-16	8.5	0.0018	1.8	<0.00001	2.49	0.129	31.6	<0.00005	0.00002	<0.00001	<0.00005	<0.0002	0.0473	<0.0002	0.002	<0.00002
C-2	04-Apr-16	5.76	0.0014	1.25	<0.00001	1.54	0.087	21.1	<0.00005	0.000013	<0.00001	<0.00005	<0.0002	0.0326	<0.0002	0.001	<0.00002
C-2	11-Apr-16	5.64	0.0012	1.29	<0.00001	1.32	0.102	22.8	<0.00005	0.000014	<0.00001	<0.00005	<0.0002	0.031	<0.0002	0.001	<0.00002
C-2	18-Apr-16	6.05	0.0015	1.44	<0.00001	1.32	0.116	22.9	<0.00005	0.000017	<0.00001	0.00006	<0.0002	0.0368	<0.0002	0.002	<0.00002
C-2	25-Apr-16	4.72	0.0014	1.14	<0.00001	0.819	0.104	18	<0.00005	0.000014	<0.00001	<0.00005	<0.0002	0.0294	<0.0002	0.001	<0.00002
C-2	02-May-16	5.13	0.0013	1.43	<0.00001	0.961	0.105	21.5	<0.00005	0.000015	<0.00001	0.00131	<0.0002	0.0284	<0.0002	0.001	<0.00002
C-2	9-May-16	3.81	0.0009	1.07	<0.00001	0.534	0.0743	15.5	<0.00005	0.00001	<0.00001	0.00015	<0.0002	0.0169	<0.0002	<0.001	<0.00002
C-2	16-May-16	3.43	0.001	0.889	<0.00001	0.474	0.0806	16.5	<0.00005	0.000011	<0.00001	0.00019	<0.0002	0.0173	<0.0002	<0.001	<0.00002
C-2	23-May-16	3.99	0.001	1.12	<0.00001	0.486	0.0887	19.8	<0.00005	0.000011	<0.00001	0.00025	<0.0002	0.0168	<0.0002	0.001	<0.00002
C-2	30-May-16	4.16	0.001	1.06	<0.00001	0.578	0.125	23.2	0.00005	0.000013	<0.00001	0.00011	<0.0002	0.0202	<0.0002	0.001	<0.00002
C-2	6-Jun-16	3.96	0.001	1.08	<0.00001	0.528	0.103	20.7	<0.00005	0.000016	<0.00001	0.00009	<0.0002	0.0181	<0.0002	0.001	<0.00002
C-2	13-Jun-16	3.36	0.0009	0.778	<0.00001	0.433	0.086	17.4	<0.00005	0.000012	<0.00001	<0.00005	<0.0002	0.0139	<0.0002	<0.001	<0.00002
C-2	20-Jun-16	4.06	0.0009	0.84	<0.00001	0.457	0.0941	18.8	<0.00005	0.000013	<0.00001	0.00013	<0.0002	0.0164	<0.0002	0.001	<0.00002
C-2	27-Jun-16	2.97	0.0008	0.853	<0.00001	0.321	0.0805	16	<0.00005	0.000012	<0.00001	<0.00005	<0.0002	0.012	<0.0002	<0.001	<0.00002
C-2	4-Jul-16	2.7	0.0008	0.707	<0.00001	0.266	0.072	14.5	<0.00005	0.00001	<0.00001	0.00009	<0.0002	0.01	<0.0002	<0.001	<0.00002
C-2	11-Jul-16	3.19	0.0009	0.78	0.00001	0.347	0.0991	19.5	<0.00005	0.000013	<0.00001	0.00007	<0.0002	0.0138	<0.0002	<0.001	<0.00002
C-2	18-Jul-16	3.36	0.0008	0.871	<0.00001	0.412	0.0926	19.7	<0.00005	0.000014	<0.00001	<0.00005	<0.0002	0.014	<0.0002	<0.001	<0.00002
C-2	25-Jul-16	2.97	0.0008	0.605	<0.00001	0.313	0.0816	17.4	<0.00005	0.000012	<0.00001	0.00011	<0.0002	0.0103	<0.0002	<0.001	<0.00002
C-2	1-Aug-16	2.95	0.0008	0.779	<0.00001	0.287	0.0853	17.8	<0.00005	0.000017	<0.00001	<0.00005	<0.0002	0.0106	<0.0002	<0.001	<0.00002
C-2	08-Aug-16	3.27	0.001	0.927	<0.00001	0.368	0.107	21.4	<0.00005	0.000017	<0.00001	<0.00005	<0.0002	0.0135	<0.0002	0.001	<0.00002
C-2	15-Aug-16	2.89	0.0009	0.722	<0.00001	0.347	0.0807	15.2	<0.00005	0.000016	<0.00001	0.00016	<0.0002	0.0112	<0.0002	0.004	<0.00002
C-2	22-Aug-16	3.98	0.00116	0.93	<0.000010	0.42	0.121	26.1	<0.00005	0.000019	<0.000010	<0.00005	<0.0002	0.0138	<0.0002	<0.0010	<0.00002
C-2	29-Aug-16																
C-2	05-Sep-16	3.77	0.00098	0.84	<0.000010	0.4	0.11	23.7	<0.00005	0.000015	<0.000010	<0.00005	<0.0002	0.0118	<0.0002	<0.0010	<0.00002
C-2	12-Sep-16																
C-2	19-Sep-16	2.96	0.00077	0.7	<0.000010	0.257	0.0924	16.3	<0.00005	0.000015	<0.000010	<0.00005	<0.0002	0.00934	<0.0002	<0.0010	<0.00002
C-2	26-Sep-16																
C-2	03-Oct-16	3.27	0.00078	0.78	<0.000010	0.257	0.108	18.6	<0.00005	0.000016	<0.000010	<0.00005	<0.0002	0.0102	<0.0002	<0.0010	0.00009
C-2	10-Oct-16																
C-2	17-Oct-16	2.6	0.00063	0.59	<0.000010	0.198	0.0906	13	<0.00005	0.000012	<0.000010	<0.00005	<0.0002	0.00859	<0.0002	<0.0010	<0.00002
C-2	24-Oct-16																
C-2	31-Oct-16	2.02	0.00063	0.46	<0.000010	0.146	0.0737	10.6	<0.00005	0.000012	<0.000010	<0.00005	<0.0002	0.00673	<0.0002	<0.0010	<0.00002
C-2	07-Nov-16																
C-2	14-Nov-16	2.16	0.0006	0.52	0.00002	0.179	0.0881	13.2	<0.00005	0.000016	<0.000010	<0.00005	<0.0002	0.00702	<0.0002	<0.0010	<0.00002
C-2	21-Nov-16																
C-2	28-Nov-16	2.33	0.00058	0.54	<0.000010	0.16	0.0844	13.1	<0.00005	0.000018	<0.000010	<0.00005	<0.0002	0.00664	<0.0002	<0.0010	<0.00002

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
C-3	29-Feb-16	0	1000	502	7.53	224	2.5	25	36.3	9.3	0.14	0.13	<0.10	0.13	0.24			47	0.088	0.0201	0.00123
C-3	07-Mar-16	1	1000	994.9	7.59	671	4.5	65.5	165	31	0.34	0.15	<0.10	0.15	0.077			210	0.032	0.118	0.0043
C-3	14-Mar-16	2	1000	983.8	7.61	461	4.3	52	124	17	0.29	<0.10	<0.10	<0.10	0.065			178	0.045	0.102	0.00316
C-3	21-Mar-16	3	1000	970.6	7.6	324	3.5	49	91.6	5.4	0.18	<0.10	<0.10	<0.10	0.034			124	0.045	0.0767	0.00204
C-3	28-Mar-16	4	1000	971.5	7.54	269	6	53.8	66.5		0.16							91	0.053	0.065	0.00162
C-3	04-Apr-16	5	1000	979.5	7.66	253	4.5	46	65.4		0.15							103	0.058	0.0592	0.00148
C-3	11-Apr-16	6	1000	967.5	7.58	215	4	43.5	47.5		0.13							84	0.058	0.0496	0.00125
C-3	18-Apr-16	7	1000	958.6	7.56	186	3.5	40.5	39.8		0.1							69	0.062	0.0418	0.00119
C-3	25-Apr-16	8	1000	961.4	7.61	212	4	43.5	46.8		0.11							74	0.053	0.0531	0.00134
C-3	02-May-16	9	1000	989.1	7.61	199	4.3	43	45.1		0.13							84	0.076	0.0466	0.00123
C-3	9-May-16	10	1000	965.2	7.58	203	6.5	42.5	46.6		0.11							69	0.062	0.041	0.00111
C-3	16-May-16	11	1000	979.4	7.62	200	5.3	42.3	48.1		0.11							69	0.047	0.0413	0.00096
C-3	23-May-16	12	1000	981.8	7.58	198	6.3	42	47.9		0.098							84	0.047	0.0435	0.00108
C-3	30-May-16	13	1000	983.6	7.6	178	5	42.1	35.2		0.082							74	0.039	0.0382	0.00094
C-3	6-Jun-16	14	1000	983.9	7.62	208	5.5	42.5	44.5		0.095							88	0.054	0.0407	0.00103
C-3	13-Jun-16	15	1000	990	7.6	205	9	42	40.6		0.079							76	0.037	0.0333	0.00078
C-3	20-Jun-16	16	1000	990.4	7.6	197	8.5	43	36.7									78	0.039	0.0318	0.00084
C-3	27-Jun-16	17	1000	989.3	7.67	204	13	45	36		0.082							84	0.039	0.0325	0.00088
C-3	4-Jul-16	18	1000	991.1	7.58	198	4.5	42	40.1									79	0.038	0.0282	0.00072
C-3	11-Jul-16	19	1000	988.6	7.43	197	4	41.5	36.8		0.067							81	0.036	0.0254	0.00068
C-3	18-Jul-16	20	1000	984.8	7.49	165	3	40.5	34.5									66	0.037	0.0224	0.00061
C-3	25-Jul-16	21	1000	989.1	7.67	199	3.5	41	44.8		0.064							87	0.04	0.0253	0.00073
C-3	1-Aug-16	22	1000	978.9	7.72	216	3.5	43	41.7		0.07							87	0.042	0.0263	0.00067
C-3	08-Aug-16	23	1000	985.3	7.63	208	4	43.5	40.8		0.075							78	0.03	0.0265	0.00058
C-3	15-Aug-16	24	1000	993.1	7.7	212	4.5	54.5	40									89	0.029	0.027	0.00092
C-3	22-Aug-16	25	1000	962.4	7.58	197	4	52.5	36		0.07							82	0.04	0.0256	0.00071
C-3	29-Aug-16	26	1000	971.6																	
C-3	05-Sep-16	27	1000	965.7	7.34	176	7	38.5	37.7		0.043							76	0.023	0.0144	0.00034
C-3	12-Sep-16	28	1000	974.1																	
C-3	19-Sep-16	29	1000	978.2	7.36	150	4.5	30.3	34		0.046							65	0.021	0.0136	0.00033
C-3	26-Sep-16	30	1000	980.4																	
C-3	03-Oct-16	31	1000	977.3	7.39	148	3	34	30		0.043							66	0.02	0.0136	0.00033
C-3	10-Oct-16	32	1000	982.4																	
C-3	17-Oct-16	33	1000	989.1	7.47	172	3.3	39	36.5		0.046							76	0.019	0.0146	0.0003
C-3	24-Oct-16	34	1000	986.4																	
C-3	31-Oct-16	35	1000	982.5	7.44	152	3	36	29.2		0.039							61	0.015	0.0125	0.00025
C-3	07-Nov-16	36	1000	990.5																	
C-3	14-Nov-16	37	1000	991.6	7.38	168	3	35.5	29.6		0.039							64	0.016	0.0127	0.00037
C-3	21-Nov-16	38	1000	980.4																	
C-3	28-Nov-16	39	1000	995	7.2	154	5	39	30.8		0.038							69	0.015	0.0118	0.00031

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Phosphorus (P)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**	**0.01**
C-3	29-Feb-16	0.0175	<0.00001	<0.00001	0.01	0.000043	14.4	0.0001	0.00113	0.0065	0.007	0.00124	0.00495	2.69	0.079	0.000008	0.00316	0.00845	<0.010
C-3	07-Mar-16	0.0378	<0.00001	<0.00001	0.026	0.00017	58.5	0.0001	0.00416	0.0089	0.004	0.00469	0.0177	15.5	0.237	0.00003	0.0161	0.027	<0.010
C-3	14-Mar-16	0.0275	<0.00001	<0.00001	0.022	0.000125	48.1	<0.0001	0.0025	0.0047	0.004	0.0024	0.0113	14	0.185	0.00002	0.00975	0.0127	<0.010
C-3	21-Mar-16	0.0174	<0.00001	<0.00001	0.017	0.000097	33.6	<0.0001	0.00154	0.003	<0.002	0.00216	0.00772	9.64	0.132	0.00001	0.00632	0.00572	<0.010
C-3	28-Mar-16	0.0171	<0.00001	<0.00001	0.011	0.000091	24.6	<0.0001	0.000997	0.0015	<0.002	0.00234	0.00518	7.21	0.104	0.000005	0.00446	0.0024	<0.010
C-3	04-Apr-16	0.0164	<0.00001	<0.00001	0.01	0.000092	29.5	<0.0001	0.000777	0.0014	<0.002	0.00228	0.00499	7.18	0.0954	0.00002	0.00385	0.00143	<0.010
C-3	11-Apr-16	0.0159	<0.00001	<0.00001	0.007	0.000082	24.1	<0.0001	0.000596	0.0015	<0.002	0.00208	0.00332	5.83	0.0858	<0.000004	0.003	0.00086	<0.010
C-3	18-Apr-16	0.0168	<0.00001	<0.00001	0.006	0.000083	19.4	<0.0001	0.000514	0.0015	<0.002	0.00216	0.00268	5.07	0.0828	<0.000004	0.00274	0.00055	<0.010
C-3	25-Apr-16	0.0197	<0.00001	<0.00001	0.004	0.000107	21.8	<0.0001	0.000521	0.001	<0.002	0.00244	0.00208	4.86	0.0874	0.00002	0.00266	0.00052	<0.010
C-3	02-May-16	0.0196	<0.00001	<0.00001	0.005	0.000134	24.1	<0.0001	0.00051	0.0015	<0.002	0.00276	0.0034	5.85	0.0909	<0.000004	0.0026	0.00048	<0.010
C-3	9-May-16	0.0188	<0.00001	<0.00001	0.005	0.000237	18.7	<0.0001	0.000454	0.001	0.003	0.00265	0.00252	5.41	0.0848	<0.000004	0.00249	0.00044	<0.010
C-3	16-May-16	0.02	<0.00001	<0.00001	0.004	0.000148	19.8	<0.0001	0.000412	0.0011	<0.002	0.00271	0.00205	4.71	0.0782	<0.000004	0.00223	0.00023	<0.010
C-3	23-May-16	0.0225	<0.00001	<0.00001	0.005	0.000229	24.8	<0.0001	0.000499	0.0015	<0.002	0.00355	0.00195	5.4	0.0961	<0.00001	0.00274	0.00029	<0.010
C-3	30-May-16	0.0234	<0.00001	<0.00001	0.005	0.000225	22.4	<0.0001	0.000436	0.0014	0.005	0.00351	0.00206	4.53	0.0932	<0.00001	0.00215	0.00041	<0.010
C-3	6-Jun-16	0.0262	<0.00001	<0.00001	0.005	0.000268	26.1	<0.0001	0.000356	0.0018	<0.002	0.00376	0.00237	5.58	0.0891	0.000005	0.00278	0.0002	<0.010
C-3	13-Jun-16	0.0208	<0.00001	<0.00001	0.004	0.000236	22	<0.0001	0.000326	0.0016	<0.002	0.00302	0.00209	5.1	0.075	<0.00001	0.00206	0.00019	<0.010
C-3	20-Jun-16	0.023	<0.00001	<0.00001	0.003	0.000285	22.6	<0.0001	0.000378	0.001	<0.002	0.00337	0.00185	5.32	0.0884	<0.00001	0.00229	0.00023	<0.010
C-3	27-Jun-16	0.0248	<0.00001	<0.00001	0.004	0.000305	24.9	<0.0001	0.000348	0.0007	<0.002	0.00351	0.00217	5.27	0.0889	<0.00001	0.00226	0.00018	<0.010
C-3	4-Jul-16	0.0225	<0.00001	<0.00001	0.003	0.00024	23.1	<0.0001	0.000256	0.0011	<0.002	0.00254	0.00193	5.08	0.075	<0.00001	0.00211	0.00008	<0.010
C-3	11-Jul-16	0.0257	<0.00001	<0.00001	0.004	0.000279	23.5	<0.0001	0.000271	0.0019	<0.002	0.00271	0.00181	5.4	0.0807	<0.00001	0.00219	0.00017	<0.010
C-3	18-Jul-16	0.0198	<0.00001	<0.00001	0.002	0.00023	19.4	<0.0001	0.000211	0.0036	0.002	0.00224	0.00155	4.21	0.062	<0.00001	0.00168	0.00015	<0.010
C-3	25-Jul-16	0.0236	<0.00001	<0.00001	0.003	0.000236	25	<0.0001	0.000221	0.0016	<0.002	0.00235	0.00201	5.9	0.0744	<0.00001	0.00198	0.00018	<0.010
C-3	1-Aug-16	0.0249	<0.00001	<0.00001	0.004	0.000264	25.5	<0.0001	0.0002	0.0018	<0.002	0.0022	0.00187	5.73	0.0678	<0.00001	0.00213	0.0002	<0.010
C-3	08-Aug-16	0.0241	<0.00001	<0.00001	0.002	0.00025	22.2	<0.0001	0.000181	0.001	<0.002	0.00197	0.00175	5.45	0.064	<0.00001	0.00205	0.00017	<0.010
C-3	15-Aug-16	0.0251	<0.00001	<0.00001	0.007	0.000286	25.6	<0.0001	0.000253	0.0031	0.002	0.00295	0.00161	6.13	0.0655	<0.00001	0.0021	0.00036	<0.010
C-3	22-Aug-16	0.0273	<0.000010	<0.000010	0.004	0.000234	23.6	<0.00010	0.000149	0.001	<0.002	0.00177	0.0018	5.65	0.0485	<0.00001	0.00184	0.00014	0.012
C-3	29-Aug-16																		
C-3	05-Sep-16	0.0191	<0.000010	<0.000010	0.004	0.000182	21.2	<0.00010	0.000104	0.0005	<0.002	0.00086	0.0013	5.47	0.0415	<0.00001	0.0013	0.00013	<0.010
C-3	12-Sep-16																		
C-3	19-Sep-16	0.0178	<0.000010	<0.000010	0.002	0.000191	18.6	<0.00010	0.000091	0.00051	<0.002	0.00065	0.00131	4.6	0.0357	<0.00001	0.00114	0.00013	<0.010
C-3	26-Sep-16																		
C-3	03-Oct-16	0.0184	<0.000010	<0.000010	<0.001	0.000217	18.3	<0.00010	0.000136	0.00042	<0.002	0.0014	0.0014	4.8	0.0515	<0.00001	0.00115	0.00007	<0.010
C-3	10-Oct-16																		
C-3	17-Oct-16	0.0208	<0.000010	<0.000010	0.002	0.000241	21.5	<0.00010	0.000138	0.0004	<0.002	0.00121	0.00138	5.5	0.0586	<0.00001	0.00122	0.00016	<0.010
C-3	24-Oct-16																		
C-3	31-Oct-16	0.0177	<0.000010	<0.000010	0.002	0.000219	17.6	<0.00010	0.000118	0.00063	<0.002	0.00096	0.00123	4.09	0.0496	<0.00001	0.00099	0.00015	<0.010
C-3	07-Nov-16																		
C-3	14-Nov-16	0.0196	<0.000010	<0.000010	0.002	0.000224	17.6	<0.00010	0.000115	0.00118	<0.002	0.00074	0.0011	4.83	0.0463	<0.00001	0.00109	0.00021	<0.010
C-3	21-Nov-16																		
C-3	28-Nov-16	0.0185	<0.000010	<0.000010	0.002	0.000233	19.1	<0.00010	0.000119	0.0003	<0.002	0.00076	0.0014	5.11	0.0519	0.00003	0.001	0.00014	0.012

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.01	0.0001	0.05	0.00001	0.01	0.0001	0.5	0.00005	0.000004	0.00001	0.00005	0.0002	0.000001	0.0002	0.001	0.00002
C-3	29-Feb-16	8.49	0.0043	0.567	0.00002	9.79	0.0428	13.7	<0.00005	0.000369	0.00015	0.00006	<0.0002	0.0828	<0.0002	0.004	0.00107
C-3	07-Mar-16	19.7	0.0235	2.27	<0.00001	38.4	0.187	67.2	<0.00005	0.000908	0.00015	0.00011	<0.0002	0.571	<0.0002	0.038	0.00198
C-3	14-Mar-16	15.1	0.0135	2.68	<0.00001	20.6	0.14	63.5	<0.00005	0.000673	0.00008	0.00007	<0.0002	0.471	<0.0002	0.022	0.00084
C-3	21-Mar-16	9.22	0.0091	2.49	<0.00001	10.3	0.106	24.9	0.00005	0.000535	0.00006	0.00006	<0.0002	0.282	<0.0002	0.013	0.00038
C-3	28-Mar-16	6.6	0.0068	2.17	<0.00001	5.17	0.0927	21.7	<0.00005	0.000457	0.00004	<0.00005	<0.0002	0.233	<0.0002	0.01	0.0002
C-3	04-Apr-16	5.68	0.007	1.97	<0.00001	4.07	0.0811	19.5	<0.00005	0.000455	0.00002	<0.00005	<0.0002	0.198	<0.0002	0.008	0.00011
C-3	11-Apr-16	4.57	0.0061	1.87	<0.00001	2.56	0.0783	16.5	<0.00005	0.000385	0.00001	<0.00005	<0.0002	0.151	<0.0002	0.007	0.00008
C-3	18-Apr-16	3.84	0.0061	1.69	<0.00001	1.88	0.0756	12.7	<0.00005	0.000361	0.00001	<0.00005	<0.0002	0.14	<0.0002	0.007	0.00008
C-3	25-Apr-16	3.57	0.0069	1.69	<0.00001	1.46	0.0844	13.7	<0.00005	0.000388	0.00002	<0.00005	<0.0002	0.138	<0.0002	0.009	0.00005
C-3	02-May-16	3.6	0.0087	2	<0.00001	1.61	0.0815	15.1	<0.00005	0.000453	<0.00001	0.00071	<0.0002	0.117	<0.0002	0.009	0.00004
C-3	9-May-16	3.36	0.0079	1.93	<0.00001	1.27	0.0758	15.3	<0.00005	0.000388	0.00001	0.00016	<0.0002	0.0879	<0.0002	0.021	0.00004
C-3	16-May-16	2.66	0.0067	1.58	<0.00001	0.946	0.073	12.6	<0.00005	0.000368	<0.00001	0.00022	<0.0002	0.0762	<0.0002	0.009	0.00004
C-3	23-May-16	3.3	0.0074	2.1	<0.00001	0.936	0.0825	17.1	<0.00005	0.000429	0.00001	0.00022	<0.0002	0.0731	<0.0002	0.015	0.00005
C-3	30-May-16	2.59	0.0055	1.6	<0.00001	0.731	0.0919	11.8	<0.00005	0.000356	<0.00001	0.00009	<0.0002	0.0675	<0.0002	0.014	<0.00002
C-3	6-Jun-16	2.81	0.0076	1.81	<0.00001	0.798	0.0897	14.3	<0.00005	0.000464	<0.00001	0.00006	<0.0002	0.0646	<0.0002	0.012	<0.00002
C-3	13-Jun-16	2.3	0.0056	1.34	<0.00001	0.64	0.0742	11.6	<0.00005	0.000339	<0.00001	<0.00005	<0.0002	0.0494	<0.0002	0.013	<0.00002
C-3	20-Jun-16	2.85	0.0059	1.44	<0.00001	0.635	0.0849	12.2	<0.00005	0.000367	<0.00001	<0.00005	<0.0002	0.0557	<0.0002	0.015	<0.00002
C-3	27-Jun-16	2.28	0.0065	1.61	<0.00001	0.556	0.0869	12.8	<0.00005	0.00039	<0.00001	0.00005	<0.0002	0.0537	<0.0002	0.015	<0.00002
C-3	4-Jul-16	2.04	0.0066	1.39	<0.00001	0.503	0.0769	12.7	<0.00005	0.00035	<0.00001	0.00012	<0.0002	0.0484	<0.0002	0.011	<0.00002
C-3	11-Jul-16	2.15	0.0063	1.43	0.00001	0.504	0.0883	13.1	<0.00005	0.000366	<0.00001	0.00005	<0.0002	0.0525	<0.0002	0.014	<0.00002
C-3	18-Jul-16	1.81	0.0048	1.31	<0.00001	0.432	0.0651	10.5	<0.00005	0.000299	<0.00001	0.00005	<0.0002	0.0412	<0.0002	0.011	<0.00002
C-3	25-Jul-16	2.11	0.0066	1.12	<0.00001	0.468	0.0833	14.6	<0.00005	0.00038	<0.00001	0.00007	<0.0002	0.0476	<0.0002	0.012	<0.00002
C-3	1-Aug-16	1.99	0.0066	1.44	<0.00001	0.405	0.0854	14.2	<0.00005	0.000385	<0.00001	0.00011	<0.0002	0.0487	<0.0002	0.012	<0.00002
C-3	08-Aug-16	1.76	0.0062	1.47	<0.00001	0.418	0.0842	12.3	<0.00005	0.000368	<0.00001	0.00031	<0.0002	0.0455	<0.0002	0.012	<0.00002
C-3	15-Aug-16	2.28	0.0069	1.39	<0.00001	4.22	0.0807	11	<0.00005	0.000569	<0.00001	0.00006	<0.0002	0.0538	<0.0002	0.015	<0.00002
C-3	22-Aug-16	2.14	0.00647	1.34	<0.000010	1.42	0.0863	14.1	<0.00005	0.000464	<0.000010	<0.00005	<0.0002	0.0498	<0.0002	0.01	<0.00002
C-3	29-Aug-16																
C-3	05-Sep-16	1.41	0.00511	0.81	<0.000010	0.48	0.0694	14.3	<0.00005	0.000257	<0.00001	<0.00005	<0.0002	0.0408	<0.0002	0.01	<0.00002
C-3	12-Sep-16																
C-3	19-Sep-16	1.19	0.00468	0.75	<0.000010	0.291	0.0623	10.9	<0.00005	0.000258	<0.000010	<0.00005	<0.0002	0.0389	<0.0002	0.0108	<0.00002
C-3	26-Sep-16																
C-3	03-Oct-16	1.24	0.00428	0.86	<0.000010	0.24	0.0664	11	<0.00005	0.000244	<0.000010	<0.00005	0.0003	0.0335	<0.0002	0.0127	<0.00002
C-3	10-Oct-16																
C-3	17-Oct-16	1.24	0.00456	0.85	<0.000010	0.25	0.0749	12.1	<0.00005	0.000253	<0.000010	<0.00005	<0.0002	0.0415	<0.0002	0.0144	0.00004
C-3	24-Oct-16																
C-3	31-Oct-16	1.12	0.00374	0.66	<0.000010	0.19	0.0615	9.7	<0.00005	0.000221	<0.000010	<0.00005	<0.0002	0.0354	<0.0002	0.0141	<0.00002
C-3	07-Nov-16																
C-3	14-Nov-16	1.06	0.00381	0.73	0.00002	0.226	0.067	10.4	<0.00005	0.000226	<0.000010	<0.00005	<0.0002	0.033	<0.0002	0.0152	<0.00002
C-3	21-Nov-16																
C-3	28-Nov-16	1.1	0.00382	0.76	<0.000010	0.16	0.0654	10.5	0.00012	0.000227	<0.000010	<0.00005	<0.0002	0.0318	<0.0002	0.015	<0.00002

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
C-4	29-Feb-16	0	1000	512.4	7.47	287	3.5	21.5	60.7	11	0.18	<0.10	<0.10	<0.10	0.34			71	0.067	0.0343	0.00262
C-4	07-Mar-16	1	1000	995.1	7.42	678	4	41	209	29	0.2	0.12	<0.10	0.12	0.28			261	0.018	0.291	0.00643
C-4	14-Mar-16	2	1000	986.9	7.44	541	4.5	33.5	198	14	0.2	<0.10	<0.10	<0.10	0.08			230	0.025	0.213	0.00451
C-4	21-Mar-16	3	1000	943.1	7.39	394	4.5	32.3	141	4.6	0.2	<0.10	<0.10	<0.10	0.025			183	0.024	0.133	0.00246
C-4	28-Mar-16	4	1000	959.8	7.36	359	4.5	33.5	122		0.11							134	0.025	0.106	0.00188
C-4	04-Apr-16	5	1000	985.3	7.43	348	3.5	30	126		0.1							149	0.026	0.0861	0.00141
C-4	11-Apr-16	6	1000	969.2	7.44	310	5.5	29.5	114		0.08							127	0.025	0.067	0.00119
C-4	18-Apr-16	7	1000	961.9	7.36	259	6	26.5	88.6		0.072							111	0.024	0.0523	0.00093
C-4	25-Apr-16	8	1000	959.9	7.46	299	6	27.5	99.9		0.061							113	0.02	0.0608	0.00112
C-4	02-May-16	9	1000	984.3	7.45	301	4.5	30	103		0.084							134	0.028	0.0517	0.00094
C-4	9-May-16	10	1000	959.8	7.46	305	7.8	28.8	104		0.077							110	0.024	0.0411	0.00074
C-4	16-May-16	11	1000	984.5	7.47	286	5.8	28.3	103		0.074							107	0.018	0.038	0.00064
C-4	23-May-16	12	1000	986.1	7.47	286	6	29	105		0.064							123	0.021	0.0386	0.00068
C-4	30-May-16	13	1000	989.2	7.46	240	5.5	29.3	88.7		0.052							101	0.018	0.0329	0.00055
C-4	6-Jun-16	14	1000	986.7	7.51	305	7	31.8	106		0.062							148	0.024	0.0365	0.00064
C-4	13-Jun-16	15	1000	989.3	7.46	261	11.3	28.5	85.6		0.048							105	0.016	0.027	0.00042
C-4	20-Jun-16	16	1000	991.6	7.47	268	10.5	31	84.6									111	0.015	0.0257	0.0004
C-4	27-Jun-16	17	1000	986	7.49	270	22	29.6	83		0.046							111	0.019	0.0242	0.00044
C-4	4-Jul-16	18	1000	987.4	7.43	287	5.5	30	96.2									116	0.015	0.0211	0.00038
C-4	11-Jul-16	19	1000	986.9	7.41	299	3.5	31	101		0.044							129	0.015	0.0193	0.00039
C-4	18-Jul-16	20	1000	990.3	7.45	245	3	29.5	97.9									100	0.013	0.017	0.00033
C-4	25-Jul-16	21	1000	986.7	7.55	307	2.5	31.5	125		0.042							149	0.015	0.0197	0.00036
C-4	1-Aug-16	22	1000	989.1	7.57	316	2	31.5	124		0.052							139	0.013	0.0185	0.00036
C-4	08-Aug-16	23	1000	994.4	7.52	320	2.5	31	111		0.045							119	0.013	0.0173	0.00033
C-4	15-Aug-16	24	1000	982.1	7.54	318	2.5	32	110									130	0.013	0.0167	0.00036
C-4	22-Aug-16	25	1000	966.3	7.54	324	3	39	112		0.044							148	0.014	0.0176	0.0004
C-4	29-Aug-16	26	1000	968.1																	
C-4	05-Sep-16	27	1000	969.7	7.37	308	5	36	112		0.034							141	0.01	0.0114	0.00025
C-4	12-Sep-16	28	1000	978.4																	
C-4	19-Sep-16	29	1000	984.6	7.32	267	5	27.5	91		0.037							125	0.009	0.0107	0.00026
C-4	26-Sep-16	30	1000	982.7																	
C-4	03-Oct-16	31	1000	979.2	7.33	259	5.3	28	92		0.032							121	0.008	0.00982	0.00024
C-4	10-Oct-16	32	1000	979.8																	
C-4	17-Oct-16	33	1000	980.7	7.37	228	3.5	28	89.3		0.032							107	0.008	0.00904	0.00021
C-4	24-Oct-16	34	1000	974.9																	
C-4	31-Oct-16	35	1000	987.3	7.32	256	3	29.5	86.7		0.029							105	0.006	0.00854	0.00021
C-4	07-Nov-16	36	1000	978.8																	
C-4	14-Nov-16	37	1000	979.7	7.29	247	3	26.5	80.2		0.026							101	0.005	0.0075	0.00024
C-4	21-Nov-16	38	1000	983.2																	
C-4	28-Nov-16	39	1000	945	7.12	248	5	30	91.4		0.029							115	0.006	0.0072	0.00024

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Phosphorus (P)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**	**0.01**
C-4	29-Feb-16	0.0193	<0.00001	<0.00001	0.01	0.000072	21	0.0003	0.00124	0.0028	0.008	0.00053	0.00494	4.6	0.0404	0.00001	0.0026	0.0314	<0.010
C-4	07-Mar-16	0.0382	<0.00001	<0.00001	0.018	0.000294	70.7	<0.0001	0.00473	0.0022	<0.002	0.00116	0.0148	20.5	0.334	0.00002	0.00623	0.0942	<0.010
C-4	14-Mar-16	0.0297	<0.00001	<0.00001	0.016	0.000216	60.7	<0.0001	0.00357	0.0013	<0.002	0.00068	0.0114	19	0.362	0.00001	0.0037	0.0485	<0.010
C-4	21-Mar-16	0.0191	<0.00001	<0.00001	0.012	0.000156	49.3	<0.0001	0.00221	0.001	<0.002	0.00047	0.00842	14.6	0.234	0.000006	0.0024	0.0247	<0.010
C-4	28-Mar-16	0.0195	<0.00001	<0.00001	0.009	0.000194	36.2	<0.0001	0.00168	0.0008	<0.002	0.00046	0.00622	10.6	0.197	<0.000004	0.00172	0.0153	<0.010
C-4	04-Apr-16	0.0175	<0.00001	<0.00001	0.008	0.000206	40.5	<0.0001	0.00129	0.0009	<0.002	0.00046	0.00624	11.6	0.177	0.00002	0.00148	0.00986	<0.010
C-4	11-Apr-16	0.017	<0.00001	<0.00001	0.006	0.000216	34.3	<0.0001	0.00111	0.0009	<0.002	0.00041	0.00427	10	0.174	<0.000004	0.00119	0.00747	<0.010
C-4	18-Apr-16	0.0166	<0.00001	<0.00001	0.005	0.00023	29.9	<0.0001	0.000919	0.0008	<0.002	0.00042	0.00357	8.74	0.164	<0.000004	0.001	0.00578	<0.010
C-4	25-Apr-16	0.0207	<0.00001	<0.00001	0.003	0.000309	30.9	<0.0001	0.00095	0.0003	<0.002	0.00042	0.00283	8.68	0.182	0.00001	0.00096	0.00606	<0.010
C-4	02-May-16	0.0194	<0.00001	<0.00001	0.004	0.000315	35.5	<0.0001	0.000885	0.0013	<0.002	0.00049	0.00466	10.9	0.199	<0.000004	0.00098	0.00527	<0.010
C-4	9-May-16	0.0173	<0.00001	<0.00001	0.004	0.000287	27.2	<0.0001	0.000726	0.0007	<0.002	0.00043	0.00353	10.3	0.18	<0.000004	0.00085	0.00426	<0.010
C-4	16-May-16	0.0171	<0.00001	<0.00001	0.004	0.000272	28.3	<0.0001	0.000644	0.0009	<0.002	0.00041	0.00285	8.7	0.159	<0.000004	0.00074	0.00344	<0.010
C-4	23-May-16	0.0193	<0.00001	<0.00001	0.004	0.000349	32.8	<0.0001	0.000758	0.0016	<0.002	0.00053	0.00275	10.1	0.201	<0.00001	0.00088	0.00409	<0.010
C-4	30-May-16	0.0189	<0.00001	<0.00001	0.004	0.000292	27.5	<0.0001	0.000672	0.0019	0.003	0.00052	0.00281	7.95	0.184	<0.00001	0.00064	0.00346	<0.010
C-4	6-Jun-16	0.0235	<0.00001	<0.00001	0.004	0.000361	38.2	<0.0001	0.000598	0.0014	<0.002	0.00063	0.00343	12.8	0.188	<0.000004	0.00092	0.00335	<0.010
C-4	13-Jun-16	0.0168	<0.00001	<0.00001	0.003	0.000301	26.8	<0.0001	0.000529	0.0008	<0.002	0.00044	0.00293	9.26	0.17	<0.00001	0.00058	0.0027	<0.010
C-4	20-Jun-16	0.0178	<0.00001	<0.00001	0.002	0.000358	28.6	<0.0001	0.000627	0.0008	<0.002	0.00055	0.00272	9.67	0.21	<0.00001	0.00067	0.00336	<0.010
C-4	27-Jun-16	0.0186	<0.00001	<0.00001	0.003	0.000348	28.9	<0.0001	0.00056	0.0003	<0.002	0.00059	0.00302	9.39	0.173	<0.00001	0.00075	0.00291	<0.010
C-4	4-Jul-16	0.0186	<0.00001	<0.00001	0.003	0.000377	29.7	<0.0001	0.000516	0.0012	<0.002	0.0005	0.00286	10.1	0.162	<0.00001	0.00083	0.00282	<0.010
C-4	11-Jul-16	0.0219	<0.00001	<0.00001	0.003	0.000488	32.6	<0.0001	0.000584	0.0011	0.005	0.00064	0.00278	11.5	0.181	<0.00001	0.00103	0.0031	<0.010
C-4	18-Jul-16	0.0165	<0.00001	<0.00001	0.002	0.000383	25.5	<0.0001	0.000479	0.0029	<0.002	0.00051	0.00231	8.76	0.141	<0.00001	0.00087	0.00265	<0.010
C-4	25-Jul-16	0.0211	<0.00001	<0.00001	0.003	0.000438	37	<0.0001	0.000566	0.0011	<0.002	0.0006	0.00361	13.7	0.172	<0.00001	0.00112	0.0032	<0.010
C-4	1-Aug-16	0.0214	<0.00001	<0.00001	0.003	0.000453	35.2	<0.0001	0.0005	0.002	<0.002	0.00052	0.003	12.4	0.153	<0.00001	0.0012	0.00299	<0.010
C-4	08-Aug-16	0.0188	<0.00001	<0.00001	0.002	0.000414	29.6	<0.0001	0.00046	0.0025	0.004	0.0005	0.00267	11	0.139	<0.00001	0.00116	0.00278	<0.010
C-4	15-Aug-16	0.0178	<0.00001	<0.00001	0.002	0.000424	32.8	0.0001	0.000457	0.0009	0.004	0.00058	0.00223	11.8	0.134	<0.00001	0.00121	0.00281	<0.010
C-4	22-Aug-16	0.0231	<0.000010	<0.000010	0.003	0.000441	37.1	<0.00010	0.000425	0.0007	<0.002	0.00048	0.003	13.4	0.143	<0.00001	0.00121	0.00271	0.016
C-4	29-Aug-16																		
C-4	05-Sep-16	0.0162	<0.000010	<0.000010	0.003	0.000353	33.9	<0.0001	0.00041	0.0005	<0.002	0.00032	0.0029	13.6	0.131	<0.00001	0.00088	0.00266	<0.010
C-4	12-Sep-16																		
C-4	19-Sep-16	0.0149	<0.000010	<0.000010	0.002	0.000359	31.2	<0.00010	0.000386	0.00042	<0.002	0.00032	0.00273	11.5	0.117	<0.00001	0.00086	0.0025	<0.010
C-4	26-Sep-16																		
C-4	03-Oct-16	0.0145	<0.000010	<0.000010	<0.001	0.000385	28.9	<0.00010	0.000414	0.00043	<0.002	0.00031	0.00246	11.8	0.124	<0.00001	0.0009	0.00257	<0.010
C-4	10-Oct-16																		
C-4	17-Oct-16	0.0132	<0.000010	<0.000010	0.002	0.00033	26.1	<0.00010	0.000341	0.00034	0.004	0.0003	0.00224	10.1	0.104	<0.00001	0.00084	0.00229	<0.010
C-4	24-Oct-16																		
C-4	31-Oct-16	0.0144	<0.000010	<0.000010	0.001	0.000373	26.7	<0.00010	0.000352	0.00066	<0.002	0.00031	0.00224	9.41	0.102	<0.00001	0.00085	0.00251	<0.010
C-4	07-Nov-16																		
C-4	14-Nov-16	0.0151	<0.000010	<0.000010	0.001	0.000399	24.3	<0.00010	0.000327	0.00076	<0.002	0.00025	0.00173	9.73	0.0914	<0.00001	0.00092	0.0027	0.011
C-4	21-Nov-16																		
C-4	28-Nov-16	0.0136	<0.000010	<0.000010	0.001	0.000363	28.7	<0.00010	0.000275	0.0004	<0.002	0.00025	0.0023	10.6	0.0833	0.00002	0.00092	0.0023	<0.010

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
		0.01	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
C-4	29-Feb-16	11	0.0078	1.27	<0.00001	5.28	0.0595	22	<0.00005	0.000383	0.00007	0.00006	<0.0002	0.0122	0.0003	0.006	0.00058
C-4	07-Mar-16	18	0.0403	2.46	<0.00001	17.5	0.21	85.6	<0.00005	0.000609	0.00002	0.00006	<0.0002	0.0736	<0.0002	0.066	0.00043
C-4	14-Mar-16	13.6	0.0327	2.74	<0.00001	11	0.177	90	<0.00005	0.00046	<0.00001	<0.00005	<0.0002	0.0466	<0.0002	0.046	0.00014
C-4	21-Mar-16	8.84	0.0264	2.33	<0.00001	5.59	0.133	46.2	<0.00005	0.000368	<0.00001	<0.00005	<0.0002	0.0313	<0.0002	0.027	0.00006
C-4	28-Mar-16	6.52	0.026	2.11	<0.00001	2.88	0.12	39	<0.00005	0.000326	<0.00001	<0.00005	<0.0002	0.0258	<0.0002	0.026	0.00004
C-4	04-Apr-16	5.5	0.0271	1.82	<0.00001	1.99	0.103	37.2	<0.00005	0.000329	<0.00001	<0.00005	<0.0002	0.0213	<0.0002	0.021	0.00003
C-4	11-Apr-16	4.4	0.0235	1.65	<0.00001	1.19	0.101	32.6	<0.00005	0.000287	<0.00001	<0.00005	<0.0002	0.0163	<0.0002	0.022	0.00009
C-4	18-Apr-16	3.55	0.0233	1.56	<0.00001	0.818	0.0924	26.1	<0.00005	0.000261	<0.00001	<0.00005	<0.0002	0.0142	<0.0002	0.022	<0.00002
C-4	25-Apr-16	3.27	0.0244	1.42	<0.00001	0.542	0.107	28.3	<0.00005	0.000271	<0.00001	<0.00005	<0.0002	0.0143	<0.0002	0.029	<0.00002
C-4	02-May-16	3.26	0.0307	1.71	<0.00001	0.56	0.104	33.9	<0.00005	0.000309	<0.00001	0.00078	<0.0002	0.0135	<0.0002	0.023	<0.00002
C-4	9-May-16	2.99	0.0266	1.53	<0.00001	0.395	0.0926	33.4	<0.00005	0.000262	<0.00001	0.00012	<0.0002	0.0113	<0.0002	0.021	<0.00002
C-4	16-May-16	2.25	0.0226	1.24	<0.00001	0.288	0.0854	26.7	<0.00005	0.000247	<0.00001	0.00018	<0.0002	0.0105	<0.0002	0.021	<0.00002
C-4	23-May-16	2.79	0.0239	1.63	<0.00001	0.277	0.0941	35.9	<0.00005	0.000275	<0.00001	0.00028	<0.0002	0.0102	<0.0002	0.032	<0.00002
C-4	30-May-16	2.06	0.0178	1.22	<0.00001	0.223	0.0969	24.7	<0.00005	0.000213	<0.00001	0.00013	<0.0002	0.00865	<0.0002	0.025	<0.00002
C-4	6-Jun-16	2.39	0.0251	1.44	<0.00001	0.231	0.103	32.4	<0.00005	0.000318	<0.00001	<0.00005	<0.0002	0.0105	<0.0002	0.022	<0.00002
C-4	13-Jun-16	1.78	0.0177	0.94	<0.00001	0.154	0.0757	23.9	<0.00005	0.00021	<0.00001	<0.00005	<0.0002	0.0072	<0.0002	0.024	<0.00002
C-4	20-Jun-16	2.25	0.0218	1.02	<0.00001	0.175	0.0861	26.8	<0.00005	0.000233	<0.00001	<0.00005	<0.0002	0.00812	<0.0002	0.027	<0.00002
C-4	27-Jun-16	1.68	0.0197	1.13	<0.00001	0.141	0.0844	27.1	<0.00005	0.000253	<0.00001	<0.00005	<0.0002	0.00665	<0.0002	0.028	<0.00002
C-4	4-Jul-16	1.56	0.0223	1.03	<0.00001	0.13	0.082	29.1	<0.00005	0.000238	<0.00001	0.00009	<0.0002	0.00613	<0.0002	0.028	<0.00002
C-4	11-Jul-16	1.75	0.022	1.1	<0.00001	0.151	0.0994	33.6	<0.00005	0.000259	<0.00001	0.0001	<0.0002	0.00696	<0.0002	0.034	<0.00002
C-4	18-Jul-16	1.43	0.0159	0.971	<0.00001	0.141	0.0706	26.5	<0.00005	0.000221	<0.00001	<0.00005	<0.0002	0.00567	<0.0002	0.031	<0.00002
C-4	25-Jul-16	1.81	0.0248	0.982	<0.00001	0.154	0.0973	37.2	<0.00005	0.000303	<0.00001	<0.00005	<0.0002	0.00677	<0.0002	0.037	<0.00002
C-4	1-Aug-16	1.59	0.0227	1.07	<0.00001	0.115	0.0945	36.8	<0.00005	0.000287	<0.00001	<0.00005	<0.0002	0.0063	<0.0002	0.034	<0.00002
C-4	08-Aug-16	1.34	0.0186	1.07	<0.00001	0.135	0.0874	30.9	<0.00005	0.000249	<0.00001	<0.00005	<0.0002	0.00583	<0.0002	0.032	<0.00002
C-4	15-Aug-16	1.4	0.0212	0.92	<0.00001	0.124	0.0787	29.5	<0.00005	0.000317	<0.00001	0.00008	<0.0002	0.00613	<0.0002	0.032	<0.00002
C-4	22-Aug-16	1.59	0.0233	1.02	<0.000010	0.12	0.102	39.9	<0.00005	0.000342	<0.000010	<0.00005	<0.0002	0.00622	<0.0002	0.03	<0.00002
C-4	29-Aug-16																
C-4	05-Sep-16	1.34	0.0186	0.8	<0.000010	0.13	0.0839	38.7	<0.00005	0.00023	<0.000010	<0.00005	<0.0002	0.00484	<0.0002	0.033	<0.00002
C-4	12-Sep-16																
C-4	19-Sep-16	1.12	0.0167	0.72	<0.000010	0.093	0.0773	31.8	<0.00005	0.000237	<0.000010	<0.00005	<0.0002	0.00455	<0.0002	0.0315	<0.00002
C-4	26-Sep-16																
C-4	03-Oct-16	1.07	0.0152	0.71	<0.000010	0.082	0.0778	32.5	<0.00005	0.000207	<0.000010	<0.00005	<0.0002	0.00433	<0.0002	0.0369	<0.00002
C-4	10-Oct-16																
C-4	17-Oct-16	0.887	0.0126	0.6	<0.000010	0.076	0.0679	26.1	<0.00005	0.000183	<0.000010	<0.00005	<0.0002	0.00383	<0.0002	0.0314	<0.00002
C-4	24-Oct-16																
C-4	31-Oct-16	0.952	0.0139	0.56	<0.000010	0.06	0.0694	27.5	<0.00005	0.000195	<0.000010	<0.00005	<0.0002	0.00388	<0.0002	0.0382	<0.00002
C-4	07-Nov-16																
C-4	14-Nov-16	0.765	0.0111	0.53	<0.000010	0.109	0.0679	26	<0.00005	0.000168	<0.000010	<0.00005	<0.0002	0.00293	<0.0002	0.0444	<0.00002
C-4	21-Nov-16																
C-4	28-Nov-16	0.86	0.0122	0.55	<0.000010	0.07	0.0666	28.3	0.00011	0.000197	<0.000010	<0.00005	<0.0002	0.00328	<0.0002	0.04	<0.00002

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
C-5	29-Feb-16	0	1000	534.2	7.41	361	3	25	93.1	11	0.14	<0.10	<0.10	<0.10	0.26			107	0.021	0.0037	0.00029
C-5	07-Mar-16	1	1000	993.2	7.46	1016	4.5	37	375	33	0.17	<0.10	<0.10	<0.10	0.069			464	0.017	0.0145	0.00119
C-5	14-Mar-16	2	1000	982.3	7.55	861	5.5	44.6	328	15	0.19	<0.10	<0.10	<0.10	0.035			446	0.022	0.0144	0.00097
C-5	21-Mar-16	3	1000	952.6	7.54	608	5	41.5	216	4.8	0.14	<0.10	<0.10	<0.10	<0.0050			279	0.027	0.0108	0.00063
C-5	28-Mar-16	4	1000	982.7	7.48	520	6.3	45	182		0.11							209	0.027	0.00904	0.00044
C-5	04-Apr-16	5	1000	988.9	7.63	506	5.5	42.5	173		0.11							231	0.028	0.00789	0.00036
C-5	11-Apr-16	6	1000	969.5	7.58	434	6.5	39	157		0.087							188	0.028	0.00612	0.0003
C-5	18-Apr-16	7	1000	945.6	7.52	381	4.5	38.5	133		0.081							160	0.029	0.00517	0.00026
C-5	25-Apr-16	8	1000	964.1	7.7	445	4.5	44	153		0.073							187	0.025	0.00683	0.0003
C-5	02-May-16	9	1000	966.4	7.69	408	4.5	44.5	143		0.093							193	0.034	0.00588	0.00028
C-5	9-May-16	10	1000	957.5	7.68	417	6.3	43.5	152		0.083							152	0.037	0.00487	0.00023
C-5	16-May-16	11	1000	956.9	7.71	407	6	44	145		0.083							160	0.025	0.00467	0.0002
C-5	23-May-16	12	1000	959.3	7.71	383	6.5	44	144		0.07							173	0.031	0.00472	0.00022
C-5	30-May-16	13	1000	973.4	7.7	340	7	45.8	114		0.059							149	0.026	0.00411	0.00014
C-5	6-Jun-16	14	1000	971.1	7.72	406	6.5	46.7	135		0.068							192	0.033	0.0045	0.00018
C-5	13-Jun-16	15	1000	968.7	7.69	375	12	46.5	132		0.056							155	0.022	0.0036	0.00013
C-5	20-Jun-16	16	1000	988.1	7.69	376	8.5	48.5	122									165	0.025	0.00332	0.00014
C-5	27-Jun-16	17	1000	989.8	7.51	280	20	29.6	92.2		0.034							116	0.022	0.00208	0.00012
C-5	4-Jul-16	18	1000	986.9	7.64	398	5.7	47.5	140									167	0.027	0.00301	0.00014
C-5	11-Jul-16	19	1000	979.1	7.6	389	4	46	130		0.047							178	0.026	0.00269	0.00013
C-5	18-Jul-16	20	1000	982	7.61	328	3	43	112									138	0.025	0.00241	0.0001
C-5	25-Jul-16	21	1000	969.8	7.74	388	4.5	47.5	142		0.051							185	0.031	0.00277	0.00011
C-5	1-Aug-16	22	1000	974.4	7.79	360	3	47	160		0.064							191	0.026	0.00284	0.00011
C-5	08-Aug-16	23	1000	970.1	7.72	372	4	47	123		0.049							146	0.026	0.00241	0.0001
C-5	15-Aug-16	24	1000	982.2	7.76	383	4	47.5	130									162	0.021	0.00222	0.00011
C-5	22-Aug-16	25	1000	972.8	7.63	392	4.5	53	137		0.051							183	0.027	0.00241	0.00011
C-5	29-Aug-16	26	1000	980.9																	
C-5	05-Sep-16	27	1000	991.6	7.58	375	6	53	130		0.039							175	0.02	0.00165	0.00008
C-5	12-Sep-16	28	1000	990.5																	
C-5	19-Sep-16	29	1000	984.1	7.56	317	3	42.8	110		0.039							153	0.017	0.00146	0.00008
C-5	26-Sep-16	30	1000	979.6																	
C-5	03-Oct-16	31	1000	991.9	7.58	299	3	41	98		0.037							143	0.014	0.00132	0.00007
C-5	10-Oct-16	32	1000	979.6																	
C-5	17-Oct-16	33	1000	981.8	7.53	262	4	37	87.2		0.037							121	0.015	0.00109	0.00005
C-5	24-Oct-16	34	1000	984.7																	
C-5	31-Oct-16	35	1000	993.3	7.56	296	4.3	41	95.4		0.03							126	0.012	0.00102	<0.00005
C-5	07-Nov-16	36	1000	994.3																	
C-5	14-Nov-16	37	1000	990.3	7.48	284	4	35.5	87.2		0.028							117	0.01	0.00093	0.00005
C-5	21-Nov-16	38	1000	987.2																	
C-5	28-Nov-16	39	1000	989	7.41	287	9	41	101		0.03							133	0.01	0.00089	0.0001

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Phosphorus (P)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**	**0.01**
C-5	29-Feb-16	0.0295	<0.00001	<0.00001	0.008	0.000065	31.5	<0.0001	0.00511	0.0018	<0.002	<0.00005	0.00873	6.75	0.178	0.000005	0.00078	0.0112	<0.010
C-5	07-Mar-16	0.0396	<0.00001	<0.00001	0.014	0.000145	132	<0.0001	0.0041	0.0019	<0.002	0.00025	0.02	32.8	0.525	0.00004	0.0028	0.0099	<0.010
C-5	14-Mar-16	0.0301	<0.00001	<0.00001	0.014	0.000114	123	<0.0001	0.00297	0.0022	<0.002	0.00022	0.0163	33.4	0.488	0.00003	0.0028	0.00642	<0.010
C-5	21-Mar-16	0.021	<0.00001	<0.00001	0.011	0.000073	77.3	<0.0001	0.00152	0.0013	<0.002	0.00018	0.0123	20.9	0.238	0.00002	0.00173	0.00235	<0.010
C-5	28-Mar-16	0.0203	<0.00001	<0.00001	0.008	0.000065	58.3	<0.0001	0.00107	0.0009	<0.002	0.00013	0.00921	15.4	0.196	0.000009	0.00139	0.00144	<0.010
C-5	04-Apr-16	0.0194	<0.00001	<0.00001	0.007	0.000079	65	<0.0001	0.000872	0.0009	<0.002	0.00016	0.00945	16.7	0.175	0.00002	0.00105	0.00101	<0.010
C-5	11-Apr-16	0.0174	<0.00001	<0.00001	0.005	0.000072	53.1	<0.0001	0.000723	0.0013	<0.002	0.00012	0.00657	13.4	0.153	0.000006	0.00082	0.00074	<0.010
C-5	18-Apr-16	0.0176	<0.00001	<0.00001	0.004	0.000073	44.5	<0.0001	0.000618	0.0008	<0.002	0.00012	0.00584	11.9	0.141	0.000006	0.00071	0.00054	<0.010
C-5	25-Apr-16	0.0244	<0.00001	<0.00001	0.003	0.000086	51.5	<0.0001	0.000706	0.0007	<0.002	0.00018	0.0051	14.1	0.165	0.00002	0.00074	0.0006	<0.010
C-5	02-May-16	0.0213	<0.00001	<0.00001	0.005	0.00008	52.9	<0.0001	0.000612	0.0013	<0.002	0.00016	0.00821	14.8	0.155	<0.000004	0.00069	0.00053	<0.010
C-5	9-May-16	0.0198	<0.00001	<0.00001	0.005	0.000077	39.4	<0.0001	0.000487	0.0015	0.004	0.00015	0.00599	12.9	0.133	<0.000004	0.00059	0.00044	<0.010
C-5	16-May-16	0.02	<0.00001	<0.00001	0.004	0.000076	44	<0.0001	0.000435	0.0017	<0.002	0.00014	0.00492	12.1	0.121	<0.000004	0.00051	0.00029	<0.010
C-5	23-May-16	0.0207	<0.00001	<0.00001	0.005	0.000083	48.7	<0.0001	0.00047	0.0026	<0.002	0.00019	0.00468	12.4	0.14	<0.00001	0.00057	0.00039	0.011
C-5	30-May-16	0.0221	<0.00001	<0.00001	0.005	0.000079	42.3	0.0001	0.000452	0.0026	0.003	0.00023	0.00484	10.4	0.135	<0.00001	0.00042	0.0005	<0.010
C-5	6-Jun-16	0.0257	<0.00001	<0.00001	0.006	0.000097	51.9	<0.0001	0.000445	0.0011	<0.002	0.00019	0.00616	15.3	0.131	<0.000004	0.00054	0.00032	<0.010
C-5	13-Jun-16	0.0194	<0.00001	<0.00001	0.004	0.000072	41.5	<0.0001	0.000376	0.001	<0.002	0.00016	0.00526	12.4	0.107	<0.00001	0.00037	0.00026	<0.010
C-5	20-Jun-16	0.0211	<0.00001	<0.00001	0.003	0.000082	42.4	<0.0001	0.000426	0.0012	<0.002	0.00018	0.00478	14.4	0.137	<0.00001	0.0004	0.00033	<0.010
C-5	27-Jun-16	0.0167	<0.00001	<0.00001	0.003	0.000091	31.7	<0.0001	0.000396	0.0005	0.021	0.00021	0.00361	9.08	0.1	<0.00001	0.00027	0.00032	<0.010
C-5	4-Jul-16	0.0214	<0.00001	<0.00001	0.003	0.000082	44.9	<0.0001	0.000376	0.0009	<0.002	0.00017	0.00544	13.4	0.113	<0.00001	0.00037	0.00025	<0.010
C-5	11-Jul-16	0.0246	<0.00001	<0.00001	0.004	0.000137	47.4	<0.0001	0.000398	0.0017	<0.002	0.00021	0.00507	14.5	0.125	<0.00001	0.00038	0.00033	<0.010
C-5	18-Jul-16	0.0185	<0.00001	<0.00001	0.002	0.000069	37.1	<0.0001	0.000309	0.0021	0.004	0.00016	0.00424	11	0.0963	<0.00001	0.00031	0.00024	<0.010
C-5	25-Jul-16	0.0224	<0.00001	<0.00001	0.003	0.000071	48.3	<0.0001	0.000339	0.0012	<0.002	0.0002	0.00598	15.7	0.107	0.00003	0.00032	0.0003	<0.010
C-5	1-Aug-16	0.0247	<0.00001	<0.00001	0.004	0.000075	50.5	<0.0001	0.000326	0.0039	<0.002	0.00018	0.00542	15.7	0.103	<0.00001	0.0004	0.00029	<0.010
C-5	08-Aug-16	0.0201	<0.00001	<0.00001	0.002	0.00006	37.7	<0.0001	0.000274	0.0016	<0.002	0.0002	0.00441	12.7	0.0864	<0.00001	0.00035	0.00023	<0.010
C-5	15-Aug-16	0.0192	<0.00001	<0.00001	0.002	0.000072	42.1	0.0002	0.000323	0.0013	0.004	0.00018	0.00359	13.8	0.0868	<0.00001	0.00038	0.00032	<0.010
C-5	22-Aug-16	0.0242	<0.000010	<0.000010	0.003	0.000067	47.2	<0.00010	0.000285	0.0009	<0.002	0.00013	0.0052	15.7	0.0856	<0.00001	0.00038	0.00023	0.014
C-5	29-Aug-16																		
C-5	05-Sep-16	0.0181	<0.000010	<0.000010	0.007	0.000051	43.3	<0.00010	0.000267	0.0007	<0.002	0.00009	0.0047	16.3	0.0768	<0.00001	0.00027	0.00025	<0.010
C-5	12-Sep-16																		
C-5	19-Sep-16	0.0174	0.000013	<0.000010	0.004	0.000058	39.5	<0.00010	0.000237	0.00061	<0.002	0.00008	0.00447	13.1	0.0667	<0.00001	0.00026	0.00023	<0.010
C-5	26-Sep-16																		
C-5	03-Oct-16	0.0166	<0.000010	<0.000010	<0.001	0.000055	35.5	<0.00010	0.000234	0.00046	<0.002	0.00007	0.00349	13.3	0.0685	<0.00001	0.00023	0.00015	<0.010
C-5	10-Oct-16																		
C-5	17-Oct-16	0.0142	<0.000010	<0.000010	0.002	0.000052	30.2	<0.00010	0.000185	0.00041	<0.002	0.00007	0.00299	11.1	0.0562	<0.00001	0.00016	0.00022	<0.010
C-5	24-Oct-16																		
C-5	31-Oct-16	0.0158	<0.000010	<0.000010	0.001	0.000048	32.9	<0.00010	0.000211	0.00057	<0.002	0.00009	0.00333	10.7	0.0648	<0.00001	0.00015	0.00022	<0.010
C-5	07-Nov-16																		
C-5	14-Nov-16	0.0151	<0.000010	<0.000010	0.001	0.000051	28.9	<0.00010	0.000192	0.00114	0.003	0.00006	0.00253	11	0.0601	<0.00001	0.00016	0.00022	<0.010
C-5	21-Nov-16																		
C-5	28-Nov-16	0.0151	<0.000010	<0.000010	0.001	0.000056	32.7	0.00016	0.000192	0.0003	<0.002	0.00005	0.0032	12.5	0.0607	0.00002	0.00013	0.00021	0.012

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.01	0.0001	0.05	0.00001	0.01	0.0001	0.5	0.00005	0.000004	0.00001	0.00005	0.0002	0.000001	0.0002	0.001	0.00002
C-5	29-Feb-16	11.2	0.0027	0.597	<0.00001	3.88	0.102	33.3	<0.00005	0.000049	<0.00001	<0.00005	<0.0002	0.00412	<0.0002	0.012	0.00003
C-5	07-Mar-16	20.7	0.0188	2.05	<0.00001	12.9	0.42	147	<0.00005	0.000061	0.00001	<0.00005	<0.0002	0.0337	<0.0002	0.037	0.00009
C-5	14-Mar-16	18.4	0.0133	2.63	<0.00001	8.85	0.364	146	<0.00005	0.000046	<0.00001	<0.00005	<0.0002	0.0327	<0.0002	0.023	0.00005
C-5	21-Mar-16	10.9	0.0084	2.29	<0.00001	4.84	0.233	50.1	<0.00005	0.000036	<0.00001	<0.00005	<0.0002	0.0251	<0.0002	0.011	0.00003
C-5	28-Mar-16	8.7	0.0064	2.06	<0.00001	2.61	0.217	54.4	<0.00005	0.000031	<0.00001	<0.00005	<0.0002	0.0212	<0.0002	0.011	<0.00002
C-5	04-Apr-16	7.61	0.0068	1.78	<0.00001	2.12	0.181	60	<0.00005	0.00003	<0.00001	<0.00005	<0.0002	0.0194	<0.0002	0.009	<0.00002
C-5	11-Apr-16	6.11	0.0055	1.54	<0.00001	1.36	0.167	50.3	<0.00005	0.000026	<0.00001	<0.00005	<0.0002	0.0153	<0.0002	0.008	<0.00002
C-5	18-Apr-16	5.4	0.0051	1.54	<0.00001	1.04	0.159	40.2	<0.00005	0.000024	<0.00001	<0.00005	<0.0002	0.0136	<0.0002	0.007	0.00002
C-5	25-Apr-16	5.49	0.0056	1.55	<0.00001	0.854	0.197	46.1	<0.00005	0.000027	<0.00001	<0.00005	<0.0002	0.0159	<0.0002	0.011	<0.00002
C-5	02-May-16	5.26	0.0059	1.82	<0.00001	0.88	0.17	47	<0.00005	0.000029	<0.00001	0.00095	<0.0002	0.0137	<0.0002	0.008	<0.00002
C-5	9-May-16	4.74	0.0053	1.63	0.00001	0.704	0.157	47.4	<0.00005	0.000025	<0.00001	0.00016	<0.0002	0.0117	<0.0002	0.007	<0.00002
C-5	16-May-16	3.96	0.0051	1.35	<0.00001	0.537	0.147	39.8	<0.00005	0.000023	<0.00001	0.0002	<0.0002	0.0115	<0.0002	0.007	<0.00002
C-5	23-May-16	4.63	0.0049	1.76	<0.00001	0.507	0.155	48.8	0.00006	0.000028	<0.00001	0.00021	<0.0002	0.0111	<0.0002	0.01	<0.00002
C-5	30-May-16	3.67	0.0037	1.34	<0.00001	0.401	0.169	37.2	<0.00005	0.00002	<0.00001	0.00009	<0.0002	0.00973	<0.0002	0.008	<0.00002
C-5	6-Jun-16	4.03	0.0049	1.57	<0.00001	0.47	0.166	44.3	<0.00005	0.00003	<0.00001	0.00012	<0.0002	0.0108	<0.0002	0.007	<0.00002
C-5	13-Jun-16	3.21	0.004	1.04	0.00001	0.355	0.153	34.7	<0.00005	0.000021	<0.00001	<0.00005	<0.0002	0.00833	<0.0002	0.007	<0.00002
C-5	20-Jun-16	3.82	0.0043	1.2	0.00001	0.376	0.152	38.8	<0.00005	0.000024	<0.00001	<0.00005	<0.0002	0.00918	<0.0002	0.008	<0.00002
C-5	27-Jun-16	2.17	0.0034	0.789	<0.00001	0.247	0.105	29.7	<0.00005	0.000019	<0.00001	<0.00005	<0.0002	0.00596	<0.0002	0.01	<0.00002
C-5	4-Jul-16	3.16	0.0053	1.17	<0.00001	0.322	0.145	41.7	<0.00005	0.000025	<0.00001	0.00012	<0.0002	0.00832	<0.0002	0.006	<0.00002
C-5	11-Jul-16	3.29	0.0049	1.2	<0.00001	0.37	0.167	45.8	<0.00005	0.00003	<0.00001	0.00005	<0.0002	0.00895	<0.0002	0.008	<0.00002
C-5	18-Jul-16	2.75	0.0038	1.11	<0.00001	0.243	0.128	36.3	<0.00005	0.000024	<0.00001	0.00005	<0.0002	0.00677	<0.0002	0.006	<0.00002
C-5	25-Jul-16	3.16	0.0048	0.984	<0.00001	0.323	0.152	44.8	0.00006	0.000032	<0.00001	<0.00005	<0.0002	0.00753	<0.0002	0.006	<0.00002
C-5	1-Aug-16	3.02	0.0053	1.22	0.00002	0.295	0.163	49	<0.00005	0.000035	<0.00001	<0.00005	<0.0002	0.00774	<0.0002	0.006	<0.00002
C-5	08-Aug-16	2.38	0.0042	1.11	<0.00001	0.247	0.137	36.6	<0.00005	0.000034	<0.00001	<0.00005	<0.0002	0.00629	<0.0002	0.005	<0.00002
C-5	15-Aug-16	2.34	0.0047	0.938	<0.00001	0.267	0.126	35.6	<0.00005	0.000029	<0.00001	0.00006	<0.0002	0.00669	<0.0002	0.006	<0.00002
C-5	22-Aug-16	2.77	0.00535	1.05	0.00001	0.28	0.163	48.3	<0.00005	0.000034	<0.000010	<0.00005	<0.0002	0.00647	<0.0002	0.005	<0.00002
C-5	29-Aug-16																
C-5	05-Sep-16	2.51	0.00424	0.85	<0.000010	0.58	0.141	47.4	<0.00005	0.000024	<0.000010	<0.00005	<0.0002	0.00539	<0.0002	0.005	<0.00002
C-5	12-Sep-16																
C-5	19-Sep-16	1.89	0.00371	0.75	0.000019	0.209	0.125	36.2	<0.00005	0.000029	<0.000010	<0.00005	<0.0002	0.00525	<0.0002	0.0049	<0.00002
C-5	26-Sep-16																
C-5	03-Oct-16	1.8	0.00327	0.7	<0.000010	0.182	0.12	35.7	<0.00005	0.000021	<0.000010	<0.00005	<0.0002	0.00471	<0.0002	0.0053	<0.00002
C-5	10-Oct-16																
C-5	17-Oct-16	1.38	0.00277	0.54	<0.000010	0.141	0.103	29.9	<0.00005	0.000016	<0.000010	<0.00005	<0.0002	0.00376	<0.0002	0.0045	<0.00002
C-5	24-Oct-16																
C-5	31-Oct-16	1.57	0.00317	0.51	<0.000010	0.139	0.108	30.1	<0.00005	0.000019	<0.000010	<0.00005	<0.0002	0.00392	<0.0002	0.0047	<0.00002
C-5	07-Nov-16																
C-5	14-Nov-16	1.23	0.00256	0.48	0.000023	0.159	0.105	28.5	<0.00005	0.000025	<0.000010	<0.00005	<0.0002	0.00323	<0.0002	0.0055	<0.00002
C-5	21-Nov-16																
C-5	28-Nov-16	1.39	0.00275	0.54	<0.000010	0.14	0.108	32.2	0.00009	0.000016	<0.000010	<0.00005	<0.0002	0.00332	<0.0002	0.005	<0.00002

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
C-6	29-Feb-16	0	1000	584.4	7.61	249	2.2	24.5	46.6	11	0.21	0.11	<0.10	0.11	0.24			70	0.081	0.00846	0.00067
C-6	07-Mar-16	1	1000	994.8	7.51	715	4	48	190	51	0.2	0.13	<0.10	0.13	0.15			278	0.024	0.0496	0.00223
C-6	14-Mar-16	2	1000	998.1	7.62	538	3.5	42	172	21	0.27	<0.10	<0.10	<0.10	0.028			241	0.032	0.0445	0.00169
C-6	21-Mar-16	3	1000	957.3	7.64	400	4	43	128	6.9	0.15	<0.10	<0.10	<0.10	0.0052			171	0.035	0.0349	0.00116
C-6	28-Mar-16	4	1000	989.8	7.55	340	3.5	45.8	98.4		0.12							131	0.039	0.0312	0.00093
C-6	04-Apr-16	5	1000	974.6	7.67	299	4.5	41	91.1		0.11							127	0.038	0.0277	0.00086
C-6	11-Apr-16	6	1000	986.4	7.62	285	4.5	44	83		0.1							115	0.042	0.0249	0.00079
C-6	18-Apr-16	7	1000	961.3	7.64	232	4.5	41	61.4		0.086							97	0.047	0.0211	0.00074
C-6	25-Apr-16	8	1000	969.3	7.71	246	4	42	66.5		0.073							96	0.04	0.0241	0.00082
C-6	02-May-16	9	1000	970.8	7.71	247	4.8	44.5	69.1		0.093							105	0.055	0.0227	0.00078
C-6	9-May-16	10	1000	961.5	7.69	246	4.5	43	68.6		0.085							87	0.05	0.0189	0.00071
C-6	16-May-16	11	1000	983.3	7.72	238	3.5	44	66.5		0.085							86	0.038	0.018	0.00062
C-6	23-May-16	12	1000	982.8	7.75	223	5	45	65		0.062							101	0.048	0.0197	0.00072
C-6	30-May-16	13	1000	986.6	7.74	200	8.5	45.5	46.1		0.059							86	0.04	0.0167	0.00051
C-6	6-Jun-16	14	1000	985.4	7.75	235	6.5	47.5	62		0.07							105	0.052	0.0186	0.00059
C-6	13-Jun-16	15	1000	983.9	7.71	215	6.3	45.5	55.2		0.055							86	0.037	0.0145	0.00042
C-6	20-Jun-16	16	1000	950.9	7.7	216	11.3	47.5	46.1									88	0.037	0.0131	0.0004
C-6	27-Jun-16	17	1000	981.4	7.77	235	17.5	50.5	50.6		0.059							101	0.046	0.0151	0.00044
C-6	4-Jul-16	18	1000	979.8	7.68	211	4.7	46	50.1									86	0.04	0.0117	0.00039
C-6	11-Jul-16	19	1000	963.3	7.67	222	3	47.5	51.6		0.048							97	0.039	0.0114	0.00038
C-6	18-Jul-16	20	1000	983.7	7.61	199	2.5	43	47.1									78	0.04	0.0103	0.00037
C-6	25-Jul-16	21	1000	985.6	7.81	232	3	49	59.2		0.058							109	0.044	0.012	0.00038
C-6	1-Aug-16	22	1000	989.3	7.8	241	2	47.5	56.5		0.046							102	0.039	0.0121	0.00037
C-6	08-Aug-16	23	1000	993.1	7.78	236	2.5	47	52.1		0.049							86	0.033	0.0109	0.00032
C-6	15-Aug-16	24	1000	991.8	7.81	249	3	48	49									91	0.033	0.00967	0.0003
C-6	22-Aug-16	25	1000	972.1	7.68	216	7	53	53		0.046							96	0.041	0.00987	0.00032
C-6	29-Aug-16	26	1000	988																	
C-6	05-Sep-16	27	1000	985.2	7.62	239	4.5	57	60		0.041							109	0.03	0.00829	0.00027
C-6	12-Sep-16	28	1000	989.6																	
C-6	19-Sep-16	29	1000	982.3	7.61	206	3.8	46	49		0.042							97	0.03	0.00784	0.00027
C-6	26-Sep-16	30	1000	989.2																	
C-6	03-Oct-16	31	1000	994.3	7.63	186	2.5	44	41		0.028							86	0.024	0.00676	0.00022
C-6	10-Oct-16	32	1000	992.4																	
C-6	17-Oct-16	33	1000	986.7	7.64	171	3.3	44	36.1		0.037							79	0.022	0.00602	0.00017
C-6	24-Oct-16	34	1000	979.9																	
C-6	31-Oct-16	35	1000	981	7.69	213	3	50.3	46.2		0.03							90	0.018	0.00684	0.00018
C-6	07-Nov-16	36	1000	984.6																	
C-6	14-Nov-16	37	1000	987.1	7.69	220	3	43.5	40.5		0.031							82	0.017	0.00652	0.00028
C-6	21-Nov-16	38	1000	973.9																	
C-6	28-Nov-16	39	1000	977	7.42	184	5	47	39		0.03							78	0.015	0.00498	0.00023

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Phosphorus (P)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**	**0.01**
C-6	29-Feb-16	0.0278	<0.00001	<0.00001	0.008	0.000027	19.7	<0.0001	0.000738	0.0027	0.005	0.00016	0.00473	5.08	0.0836	0.000005	0.00158	0.00501	<0.010
C-6	07-Mar-16	0.0437	<0.00001	<0.00001	0.014	0.00013	72.4	<0.0001	0.00283	0.0027	0.003	0.00037	0.0143	23.6	0.271	0.00002	0.00713	0.00897	<0.010
C-6	14-Mar-16	0.0313	<0.00001	<0.00001	0.013	0.000099	62.2	<0.0001	0.00196	0.0016	<0.002	0.00026	0.0105	20.9	0.241	0.00002	0.00475	0.00467	<0.010
C-6	21-Mar-16	0.02	<0.00001	<0.00001	0.011	0.000066	44.7	<0.0001	0.00108	0.0013	<0.002	0.00019	0.00763	14.5	0.138	0.00001	0.00345	0.00215	<0.010
C-6	28-Mar-16	0.0211	<0.00001	<0.00001	0.008	0.000067	34.8	<0.0001	0.000754	0.0007	<0.002	0.0002	0.00551	10.6	0.107	0.000005	0.00262	0.00128	<0.010
C-6	04-Apr-16	0.0193	<0.00001	<0.00001	0.008	0.000074	34.4	<0.0001	0.000602	0.0008	<0.002	0.00025	0.00514	10.1	0.0952	0.00002	0.00215	0.00086	<0.010
C-6	11-Apr-16	0.0199	<0.00001	<0.00001	0.006	0.000077	31.7	<0.0001	0.00056	0.0012	<0.002	0.00025	0.00387	8.78	0.0975	<0.000004	0.00184	0.00066	<0.010
C-6	18-Apr-16	0.0206	<0.00001	<0.00001	0.004	0.00007	26.4	<0.0001	0.000449	0.0008	<0.002	0.00026	0.00301	7.46	0.0864	<0.000004	0.00161	0.00045	<0.010
C-6	25-Apr-16	0.0242	<0.00001	<0.00001	0.003	0.000095	27.1	<0.0001	0.000437	0.0007	<0.002	0.00028	0.00253	6.84	0.0904	0.00001	0.0014	0.00043	<0.010
C-6	02-May-16	0.0235	<0.00001	<0.00001	0.004	0.000095	28.3	<0.0001	0.000414	0.0012	<0.002	0.00033	0.00415	8.33	0.0911	<0.000004	0.00153	0.00039	<0.010
C-6	9-May-16	0.0213	<0.00001	<0.00001	0.004	0.000091	22.6	<0.0001	0.000328	0.0009	0.003	0.00031	0.00297	7.43	0.0765	<0.000004	0.0013	0.00029	<0.010
C-6	16-May-16	0.0216	<0.00001	<0.00001	0.004	0.000095	24	<0.0001	0.000277	0.0012	<0.002	0.00026	0.00242	6.39	0.065	<0.000004	0.00122	0.00015	<0.010
C-6	23-May-16	0.0254	<0.00001	<0.00001	0.004	0.000112	28.3	<0.0001	0.000316	0.0021	<0.002	0.00038	0.00234	7.48	0.0756	<0.00001	0.0014	0.00027	0.016
C-6	30-May-16	0.0267	<0.00001	<0.00001	0.004	0.000105	24.6	<0.0001	0.00028	0.0014	0.002	0.00035	0.00245	6.07	0.0694	<0.00001	0.00103	0.00039	<0.010
C-6	6-Jun-16	0.0305	<0.00001	<0.00001	0.005	0.00012	29.1	<0.0001	0.000253	0.0008	<0.002	0.0004	0.0029	7.77	0.0614	<0.000004	0.00126	0.00019	<0.010
C-6	13-Jun-16	0.0225	<0.00001	<0.00001	0.003	0.000093	23.4	<0.0001	0.000211	0.0007	<0.002	0.00033	0.00248	6.78	0.0488	<0.00001	0.00091	0.00016	<0.010
C-6	20-Jun-16	0.0243	<0.00001	<0.00001	0.003	0.000107	23.9	<0.0001	0.000225	0.0007	<0.002	0.00037	0.0022	6.91	0.0548	<0.00001	0.00095	0.0002	<0.010
C-6	27-Jun-16	0.0277	<0.00001	<0.00001	0.004	0.000116	28	<0.0001	0.000237	0.0007	<0.002	0.00042	0.00278	7.51	0.0592	<0.00001	0.00097	0.00014	<0.010
C-6	4-Jul-16	0.023	<0.00001	<0.00001	0.003	0.000095	23.6	<0.0001	0.000177	0.0006	<0.002	0.00032	0.00233	6.56	0.0475	<0.00001	0.00083	0.00006	<0.010
C-6	11-Jul-16	0.0281	<0.00001	<0.00001	0.003	0.000138	26.5	<0.0001	0.0002	0.0018	<0.002	0.00032	0.00241	7.6	0.0539	<0.00001	0.00093	0.00016	<0.010
C-6	18-Jul-16	0.022	<0.00001	<0.00001	0.002	0.000104	21.3	<0.0001	0.000171	0.0022	<0.002	0.00034	0.00197	5.96	0.0462	<0.00001	0.00072	0.00018	<0.010
C-6	25-Jul-16	0.0284	<0.00001	<0.00001	0.003	0.000105	29.1	<0.0001	0.000213	0.0013	<0.002	0.0004	0.00298	8.88	0.0581	<0.00001	0.00075	0.00021	<0.010
C-6	1-Aug-16	0.029	<0.00001	<0.00001	0.003	0.000115	27.6	0.0001	0.000181	0.0077	0.003	0.00041	0.00256	8	0.0517	<0.00001	0.00092	0.00018	<0.010
C-6	08-Aug-16	0.0256	<0.00001	<0.00001	0.001	0.0001	22.7	<0.0001	0.000169	0.0012	<0.002	0.00035	0.00222	7.1	0.0486	<0.00001	0.00086	0.00016	<0.010
C-6	15-Aug-16	0.0238	<0.00001	<0.00001	0.002	0.000113	24.3	0.0001	0.000174	0.0005	0.003	0.00036	0.00174	7.34	0.0468	<0.00001	0.0008	0.00019	<0.010
C-6	22-Aug-16	0.0278	<0.000010	<0.000010	0.002	0.000094	25.5	<0.00010	0.000152	0.0006	<0.002	0.00028	0.0023	7.8	0.046	<0.00001	0.0008	0.00009	0.015
C-6	29-Aug-16																		
C-6	05-Sep-16	0.0239	<0.00001	<0.00001	0.003	0.000093	28.1	0.00014	0.000177	0.0005	0.002	0.00029	0.0025	9.37	0.0464	<0.00001	0.00076	0.00016	<0.010
C-6	12-Sep-16																		
C-6	19-Sep-16	0.0234	0.000011	<0.000010	0.004	0.000096	25.7	<0.00010	0.000176	0.00048	<0.002	0.00027	0.00235	7.9	0.0463	<0.00001	0.00066	0.00018	<0.010
C-6	26-Sep-16																		
C-6	03-Oct-16	0.0215	<0.000010	<0.000010	<0.001	0.000105	22.1	<0.00010	0.000185	0.00031	<0.002	0.00026	0.00179	7.5	0.0506	<0.00001	0.00053	0.00007	<0.010
C-6	10-Oct-16																		
C-6	17-Oct-16	0.0201	<0.000010	<0.000010	0.001	0.000095	20.6	<0.00010	0.000169	0.00025	<0.002	0.00024	0.00163	6.77	0.0463	<0.00001	0.00045	0.00014	<0.010
C-6	24-Oct-16																		
C-6	31-Oct-16	0.0243	<0.000010	<0.000010	0.001	0.00012	24.2	<0.00010	0.000212	0.0005	<0.002	0.00039	0.00198	7.25	0.0557	<0.00001	0.00049	0.00018	<0.010
C-6	07-Nov-16																		
C-6	14-Nov-16	0.0244	<0.000010	<0.000010	0.001	0.000129	20.3	<0.00010	0.0002	0.001	<0.002	0.00046	0.00154	7.51	0.0562	<0.00001	0.00048	0.0002	<0.010
C-6	21-Nov-16																		
C-6	28-Nov-16	0.0194	<0.000010	<0.000010	0.001	0.000107	20.4	<0.00010	0.000175	0.0004	<0.002	0.00035	0.0018	6.5	0.0495	0.00002	0.00036	0.00016	0.015

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
		0.01	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
C-6	29-Feb-16	9.63	0.0017	0.641	<0.00001	3.42	0.062	17.9	<0.00005	0.000144	0.00002	0.00006	<0.0002	0.0195	<0.0002	0.003	0.00017
C-6	07-Mar-16	17.8	0.012	1.97	<0.00001	12.9	0.233	77.2	<0.00005	0.000299	0.00002	0.00011	<0.0002	0.182	<0.0002	0.044	0.00031
C-6	14-Mar-16	14.2	0.0083	2.36	<0.00001	8.11	0.189	75.4	<0.00005	0.000227	0.00005	0.0001	<0.0002	0.162	<0.0002	0.029	0.00015
C-6	21-Mar-16	9.75	0.0061	2.06	<0.00001	4.49	0.137	41.5	<0.00005	0.000183	0.00004	0.00008	<0.0002	0.129	<0.0002	0.013	0.00008
C-6	28-Mar-16	7.26	0.0054	1.91	<0.00001	2.41	0.117	32	<0.00005	0.000169	0.00003	0.00007	<0.0002	0.114	<0.0002	0.011	0.00006
C-6	04-Apr-16	6.13	0.0057	1.62	<0.00001	1.77	0.0973	28.3	<0.00005	0.000167	0.00002	<0.00005	<0.0002	0.0961	<0.0002	0.009	0.00004
C-6	11-Apr-16	5.56	0.0055	1.69	<0.00001	1.24	0.102	26	<0.00005	0.000151	<0.00001	<0.00005	<0.0002	0.0819	<0.0002	0.009	0.00003
C-6	18-Apr-16	4.62	0.0057	1.58	<0.00001	0.872	0.0936	18.8	<0.00005	0.000132	<0.00001	<0.00005	<0.0002	0.07	<0.0002	0.008	0.00003
C-6	25-Apr-16	4.07	0.0058	1.47	<0.00001	0.594	0.102	19.1	<0.00005	0.000137	0.00001	0.00005	<0.0002	0.0728	<0.0002	0.01	<0.00002
C-6	02-May-16	4.25	0.0073	1.75	<0.00001	0.681	0.0993	22.6	<0.00005	0.000159	0.00001	0.00167	<0.0002	0.0716	<0.0002	0.009	0.00003
C-6	9-May-16	3.87	0.006	1.61	<0.00001	0.492	0.0885	20.5	<0.00005	0.000129	0.00001	0.00016	<0.0002	0.059	<0.0002	0.008	0.00002
C-6	16-May-16	3.13	0.0061	1.3	<0.00001	0.382	0.0819	16.7	<0.00005	0.000113	<0.00001	0.00026	<0.0002	0.0562	<0.0002	0.007	<0.00002
C-6	23-May-16	3.94	0.0073	1.94	<0.00001	0.392	0.0956	24.4	<0.00005	0.000138	<0.00001	0.00017	<0.0002	0.0574	<0.0002	0.011	0.00002
C-6	30-May-16	2.99	0.0051	1.32	<0.00001	0.28	0.1	15.9	<0.00005	0.000106	<0.00001	0.00011	<0.0002	0.0514	<0.0002	0.008	<0.00002
C-6	6-Jun-16	3.3	0.0077	1.57	<0.00001	0.331	0.0994	18.3	<0.00005	0.000151	<0.00001	0.00009	<0.0002	0.055	<0.0002	0.007	<0.00002
C-6	13-Jun-16	2.6	0.0055	1.13	<0.00001	0.237	0.078	14.2	<0.00005	0.000106	<0.00001	<0.00005	<0.0002	0.0407	<0.0002	0.008	<0.00002
C-6	20-Jun-16	3.2	0.0058	1.15	<0.00001	0.243	0.0877	15.2	<0.00005	0.000111	<0.00001	<0.00005	<0.0002	0.0463	<0.0002	0.007	<0.00002
C-6	27-Jun-16	2.73	0.007	1.43	<0.00001	0.236	0.0966	17.6	<0.00005	0.000134	<0.00001	0.00028	<0.0002	0.047	<0.0002	0.008	<0.00002
C-6	4-Jul-16	2.33	0.0069	1.15	<0.00001	0.194	0.0781	15.6	<0.00005	0.000106	<0.00001	0.0001	<0.0002	0.0373	<0.0002	0.006	<0.00002
C-6	11-Jul-16	2.7	0.0066	1.25	<0.00001	0.226	0.0968	17.7	<0.00005	0.000123	<0.00001	0.00009	<0.0002	0.0417	<0.0002	0.007	<0.00002
C-6	18-Jul-16	2.23	0.0056	1.19	<0.00001	0.178	0.0769	14.5	<0.00005	0.000123	<0.00001	<0.00005	<0.0002	0.0344	<0.0002	0.006	<0.00002
C-6	25-Jul-16	2.73	0.0078	1.19	<0.00001	0.23	0.0966	21.2	<0.00005	0.000147	<0.00001	0.00007	<0.0002	0.0401	<0.0002	0.007	<0.00002
C-6	1-Aug-16	2.42	0.0071	1.33	<0.00001	0.181	0.0942	19.3	<0.00005	0.000141	<0.00001	0.00053	<0.0002	0.0378	<0.0002	0.007	<0.00002
C-6	08-Aug-16	2.01	0.0058	1.22	<0.00001	0.177	0.0872	15.5	<0.00005	0.000128	<0.00001	0.00005	<0.0002	0.0318	<0.0002	0.006	<0.00002
C-6	15-Aug-16	1.98	0.0064	1.03	<0.00001	0.175	0.0769	14.4	<0.00005	0.000139	<0.00001	0.00007	<0.0002	0.0336	<0.0002	0.006	<0.00002
C-6	22-Aug-16	2.14	0.0069	1.11	<0.000010	0.17	0.0921	18.6	<0.00005	0.000138	<0.000010	<0.00005	<0.0002	0.0324	<0.0002	0.005	<0.00002
C-6	29-Aug-16																
C-6	05-Sep-16	2.11	0.00642	1.03	<0.00001	0.2	0.0933	21.5	<0.00005	0.000121	<0.00001	<0.00005	<0.0002	0.0313	<0.0002	0.007	<0.00002
C-6	12-Sep-16																
C-6	19-Sep-16	1.78	0.00592	0.96	0.000014	0.148	0.0879	16.5	<0.00005	0.000125	<0.000010	<0.00005	<0.0002	0.0295	<0.0002	0.0064	<0.00002
C-6	26-Sep-16																
C-6	03-Oct-16	1.55	0.00483	0.84	<0.000010	0.116	0.0813	15.4	<0.00005	0.000092	<0.000010	<0.00005	<0.0002	0.0244	<0.0002	0.0073	<0.00002
C-6	10-Oct-16																
C-6	17-Oct-16	1.3	0.00421	0.73	<0.000010	0.099	0.0749	13.2	<0.00005	0.000084	<0.000010	<0.00005	<0.0002	0.0225	<0.0002	0.0063	<0.00002
C-6	24-Oct-16																
C-6	31-Oct-16	1.61	0.00499	0.73	<0.000010	0.115	0.0874	15.3	<0.00005	0.000097	<0.000010	<0.00005	<0.0002	0.0305	<0.0002	0.0081	<0.00002
C-6	07-Nov-16																
C-6	14-Nov-16	1.36	0.00399	0.73	<0.000010	0.148	0.0856	14.5	<0.00005	0.000089	<0.000010	<0.00005	<0.0002	0.0233	<0.0002	0.0097	0.00002
C-6	21-Nov-16																
C-6	28-Nov-16	1.2	0.00377	0.62	<0.000010	0.1	0.0694	11.7	0.00011	0.000082	<0.000010	<0.00005	<0.0002	0.0206	<0.0002	0.008	<0.00002

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness $(CaCO_3)$	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
C-7	29-Feb-16	0	1000	584.1	7.11	322	3	17	76.1	11	0.16	0.11	<0.10	0.11	0.62			73	0.017	0.116	0.00617
C-7	07-Mar-16	1	1000	995	7.15	620	4.3	21.1	215	18	0.19	<0.10	<0.10	<0.10	0.076			216	0.008	0.419	0.0155
C-7	14-Mar-16	2	1000	989.4	7.21	514	5	28	186	8.7	0.26	<0.10	<0.10	<0.10	0.013			202	0.01	0.328	0.0145
C-7	21-Mar-16	3	1000	971.3	7.11	353	4	16.5	133	3.2	0.2	<0.10	<0.10	<0.10	0.0051			141	0.007	0.242	0.0102
C-7	28-Mar-16	4	1000	982	7	311	6	15	110		0.12							116	0.007	0.185	0.00788
C-7	04-Apr-16	5	1000	985.7	7.04	309	4	16	119		0.11							124	0.006	0.148	0.00639
C-7	11-Apr-16	6	1000	977.8	6.98	280	6	10.5	107		0.091							107	0.005	0.111	0.00517
C-7	18-Apr-16	7	1000	985.1	6.95	245	5	10.5	94.4		0.079							94	0.005	0.0871	0.00478
C-7	25-Apr-16	8	1000	963.9	6.96	280	4.5	9.2	102		0.063							97	0.005	0.0876	0.00597
C-7	02-May-16	9	1000	977.1	6.88	280	4.5	8.5	118		0.082							111	0.004	0.0693	0.00525
C-7	9-May-16	10	1000	960.4	6.77	295	10	7	112		0.072							99	0.008	0.0516	0.005
C-7	16-May-16	11	1000	962.8	6.77	274	8.8	6.3	105		0.067							92	0.002	0.0423	0.00513
C-7	23-May-16	12	1000	963.1	6.66	266	8.3	5.5	114		0.047							107	0.003	0.0385	0.006
C-7	30-May-16	13	1000	979.9	6.63	230	13.5	4.8	94.6		0.046							90	0.002	0.0295	0.00508
C-7	6-Jun-16	14	1000	974.6	6.64	311	10.5	5.3	122		0.059							133	0.003	0.0345	0.00569
C-7	13-Jun-16	15	1000	978.8	6.61	307	17	5	131		0.052							116	0.002	0.0264	0.00599
C-7	20-Jun-16	16	1000	984.8	6.62	285	13	5	111									109	0.002	0.024	0.00679
C-7	27-Jun-16	17	1000	979.3	6.54	294	20	4.5	111		0.054							115	0.003	0.0238	0.00847
C-7	4-Jul-16	18	1000	981.6	6.54	304	5.7	5	125									115	0.003	0.0193	0.00765
C-7	11-Jul-16	19	1000	977.8	6.58	290	4	5.5	114		0.052							119	0.003	0.0158	0.00767
C-7	18-Jul-16	20	1000	988.8	6.36	240	4.5	5	106									92	0.003	0.0142	0.00756
C-7	25-Jul-16	21	1000	990.1	6.39	301	6.5	4.5	132		0.051							134	0.008	0.0134	0.00767
C-7	1-Aug-16	22	1000	991.4	6.46	311	6	4.5	123		0.047							124	0.005	0.0121	0.00756
C-7	08-Aug-16	23	1000	981.7	6.4	318	6.5	4.5	126		0.055							109	0.005	0.0105	0.00698
C-7	15-Aug-16	24	1000	986.4	6.39	322	6.5	4.5	120									110	0.004	0.00956	0.00665
C-7	22-Aug-16	25	1000	969.4	6.34	321	6.5	4.5	150		0.055							135	0.004	0.00944	0.00838
C-7	29-Aug-16	26	1000	974.5																	
C-7	05-Sep-16	27	1000	989.4	6.13	345	8.5	3	148		0.053							150	0.007	0.00628	0.00925
C-7	12-Sep-16	28	1000	992.3																	
C-7	19-Sep-16	29	1000	986.5	6.03	276	8	2	120		0.055							116	0.007	0.00507	0.00997
C-7	26-Sep-16	30	1000	983.5																	
C-7	03-Oct-16	31	1000	987	5.93	254	7.5	1.9	110		0.047							109	0.013	0.00434	0.0105
C-7	10-Oct-16	32	1000	979.5																	
C-7	17-Oct-16	33	1000	984.4	5.89	213	7	1.8	94.9		0.043							88	0.015	0.00343	0.00948
C-7	24-Oct-16	34	1000	981.6																	
C-7	31-Oct-16	35	1000	990.4	5.68	247	8.5	2.2	102		0.048							91	0.018	0.00349	0.0104
C-7	07-Nov-16	36	1000	986.3																	
C-7	14-Nov-16	37	1000	988.4	5.71	232	8	3	125		0.055							111	0.035	0.00349	0.0113
C-7	21-Nov-16	38	1000	983.1																	
C-7	28-Nov-16	39	1000	988.1	5.5	228	13	3	105		0.054							89	0.029	0.00274	0.013

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Phosphorus (P)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**	**0.01**
C-7	29-Feb-16	0.0238	<0.00001	<0.00001	0.012	0.0025	22.7	<0.0001	0.0105	0.0069	0.003	0.0011	0.0057	3.92	0.283	0.00002	0.00271	0.0428	<0.010
C-7	07-Mar-16	0.0429	<0.00001	<0.00001	0.017	0.0113	64.6	<0.0001	0.0232	0.0054	<0.002	0.00478	0.00911	13.3	1.16	0.00002	0.00537	0.122	<0.010
C-7	14-Mar-16	0.0324	<0.00001	<0.00001	0.018	0.00861	59.5	<0.0001	0.0174	0.0026	0.002	0.00379	0.00741	12.8	1.16	0.00002	0.00379	0.0829	<0.010
C-7	21-Mar-16	0.0207	<0.00001	<0.00001	0.014	0.006	42	<0.0001	0.0102	0.0023	<0.002	0.00353	0.00521	8.73	0.734	0.00001	0.00259	0.0468	<0.010
C-7	28-Mar-16	0.0212	<0.00001	<0.00001	0.01	0.006	34.8	<0.0001	0.00783	0.0012	<0.002	0.00416	0.00386	6.95	0.654	0.000004	0.00173	0.0345	<0.010
C-7	04-Apr-16	0.0208	<0.00001	<0.00001	0.01	0.00672	37.5	<0.0001	0.00785	0.0016	<0.002	0.00488	0.0041	7.37	0.679	0.00001	0.00145	0.0324	<0.010
C-7	11-Apr-16	0.0204	<0.00001	<0.00001	0.007	0.00711	32.4	<0.0001	0.00789	0.0019	<0.002	0.00534	0.00288	6.35	0.717	<0.000004	0.00103	0.0284	<0.010
C-7	18-Apr-16	0.0217	<0.00001	<0.00001	0.005	0.00785	28	<0.0001	0.00784	0.0017	<0.002	0.00676	0.00257	5.82	0.722	<0.000004	0.00088	0.0276	<0.010
C-7	25-Apr-16	0.0264	<0.00001	<0.00001	0.004	0.0101	29.5	<0.0001	0.00916	0.002	0.003	0.0104	0.00209	5.71	0.9	0.00001	0.00064	0.0308	<0.010
C-7	02-May-16	0.0269	<0.00001	<0.00001	0.005	0.0129	32.6	<0.0001	0.0111	0.003	<0.002	0.0136	0.00356	7.18	1.06	<0.000004	0.0006	0.0358	<0.010
C-7	9-May-16	0.0251	<0.00001	<0.00001	0.005	0.0125	28	<0.0001	0.0101	0.0032	0.005	0.0161	0.00262	7	1.05	<0.000004	0.00048	0.0315	<0.010
C-7	16-May-16	0.0251	<0.00001	<0.00001	0.004	0.0127	27.1	<0.0001	0.00929	0.004	0.004	0.0179	0.00208	5.97	1	<0.000004	0.00038	0.0276	<0.010
C-7	23-May-16	0.0308	0.00001	<0.00001	0.005	0.0174	31.4	<0.0001	0.0115	0.0066	0.007	0.0287	0.00203	7.06	1.1	<0.00001	0.00055	0.0362	0.017
C-7	30-May-16	0.03	0.00002	<0.00001	0.004	0.0151	26.7	<0.0001	0.00983	0.0064	0.008	0.0274	0.00217	5.57	1.06	<0.00001	0.0005	0.0319	<0.010
C-7	6-Jun-16	0.0367	0.00002	<0.00001	0.006	0.0195	37.9	<0.0001	0.0107	0.0077	0.014	0.0431	0.00283	9.33	1.16	<0.000004	0.00058	0.0376	<0.010
C-7	13-Jun-16	0.0299	0.00002	<0.00001	0.004	0.0172	32.8	<0.0001	0.00854	0.0084	0.015	0.0448	0.00262	8.39	1.05	<0.00001	0.00046	0.0334	<0.010
C-7	20-Jun-16	0.0293	0.00001	<0.00001	0.004	0.0183	30.5	<0.0001	0.00832	0.0111	0.015	0.0435	0.00241	7.87	1.07	<0.00001	0.00056	0.0377	<0.010
C-7	27-Jun-16	0.0314	0.00002	<0.00001	0.005	0.0181	32.2	<0.0001	0.00738	0.0113	0.023	0.0513	0.00267	8.38	0.866	<0.00001	0.00069	0.0367	<0.010
C-7	4-Jul-16	0.0279	0.00002	<0.00001	0.004	0.0164	31.8	<0.0001	0.00641	0.0109	0.018	0.044	0.00253	8.62	0.778	<0.00001	0.00066	0.0334	<0.010
C-7	11-Jul-16	0.0309	0.00002	<0.00001	0.004	0.0177	32.5	<0.0001	0.00642	0.0147	0.023	0.0545	0.00242	9.2	0.815	<0.00001	0.00068	0.0338	<0.010
C-7	18-Jul-16	0.0239	0.00002	<0.00001	0.003	0.0141	25.1	<0.0001	0.00507	0.0124	0.021	0.0435	0.00196	7.1	0.647	<0.00001	0.00058	0.0277	<0.010
C-7	25-Jul-16	0.0297	0.00003	<0.00001	0.004	0.0179	35.4	<0.0001	0.00673	0.0188	0.027	0.0651	0.00282	11	0.855	<0.00001	0.00046	0.037	0.017
C-7	1-Aug-16	0.0304	0.00004	<0.00001	0.004	0.0184	33	<0.0001	0.00631	0.0207	0.034	0.0737	0.00232	10.1	0.854	<0.00001	0.00042	0.0348	<0.010
C-7	08-Aug-16	0.0285	0.00003	<0.00001	0.002	0.0174	28	<0.0001	0.00597	0.0204	0.032	0.0692	0.00208	9.44	0.82	<0.00001	0.00036	0.0331	<0.010
C-7	15-Aug-16	0.025	0.00003	<0.00001	0.002	0.0169	28.5	0.0001	0.00613	0.0195	0.029	0.0692	0.00162	9.34	0.778	<0.00001	0.0004	0.0349	<0.010
C-7	22-Aug-16	0.0339	0.00004	<0.000010	0.004	0.0195	34.7	<0.00010	0.00648	0.0216	0.03	0.0863	0.0024	11.6	0.998	<0.00001	0.00029	0.0372	0.013
C-7	29-Aug-16																		
C-7	05-Sep-16	0.0289	0.000068	<0.00001	0.004	0.0196	37.1	<0.0001	0.00771	0.0329	0.058	0.111	0.0026	13.8	1.15	<0.00001	0.00021	0.0401	<0.010
C-7	12-Sep-16																		
C-7	19-Sep-16	0.0269	0.000069	<0.000010	0.004	0.0183	29.6	<0.00010	0.007	0.0341	0.07	0.117	0.00234	10.3	1.01	<0.00001	0.00017	0.0365	<0.010
C-7	26-Sep-16																		
C-7	03-Oct-16	0.0255	0.000064	<0.000010	<0.001	0.0176	26.3	<0.00010	0.00672	0.0393	0.113	0.119	0.00183	10.4	1.02	<0.00001	0.00015	0.0363	<0.010
C-7	10-Oct-16																		
C-7	17-Oct-16	0.0235	0.000064	<0.000010	0.002	0.0167	21.5	<0.00010	0.00611	0.0395	0.112	0.113	0.00148	8.38	0.932	<0.00001	0.0001	0.0327	<0.010
C-7	24-Oct-16																		
C-7	31-Oct-16	0.0232	0.000081	<0.000010	0.002	0.0173	23.2	<0.00010	0.00648	0.047	0.13	0.13	0.00167	8.17	0.968	<0.00001	0.0001	0.0345	<0.010
C-7	07-Nov-16																		
C-7	14-Nov-16	0.0296	0.000103	<0.000010	0.002	0.0215	26.4	<0.00010	0.00815	0.0719	0.232	0.168	0.0018	10.9	1.23	<0.00001	0.00007	0.0419	<0.010
C-7	21-Nov-16																		
C-7	28-Nov-16	0.0245	0.000084	<0.000010	0.002	0.0163	25.1	<0.00010	0.00653	0.0496	0.182	0.131	0.0019	8.67	1	0.00002	0.00007	0.0328	0.01

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.01	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
C-7	29-Feb-16	15.3	0.0211	0.887	0.00002	8.17	0.0612	25.7	<0.00005	0.001	0.00014	0.00008	<0.0002	0.00557	<0.0002	0.104	0.00057
C-7	07-Mar-16	20.4	0.0585	2.67	<0.00001	20	0.184	76.4	<0.00005	0.0013	0.00002	0.00008	<0.0002	0.0246	<0.0002	0.307	0.00019
C-7	14-Mar-16	15.5	0.0402	3.36	<0.00001	12.9	0.161	82.4	<0.00005	0.00103	<0.00001	0.0001	<0.0002	0.0172	<0.0002	0.211	0.00006
C-7	21-Mar-16	9.25	0.028	2.94	<0.00001	5.63	0.113	43.4	<0.00005	0.00079	<0.00001	<0.00250	<0.0002	0.0115	<0.0002	0.136	0.00003
C-7	28-Mar-16	6.56	0.0276	2.7	<0.00001	2.69	0.102	42.1	<0.00005	0.00069	<0.00001	<0.00005	<0.0002	0.00808	<0.0002	0.143	<0.00002
C-7	04-Apr-16	5.69	0.0305	2.54	<0.00001	1.92	0.0959	35.7	<0.00005	0.000704	<0.00001	<0.00005	<0.0002	0.0055	<0.0002	0.158	<0.00002
C-7	11-Apr-16	4.58	0.0279	2.41	<0.00001	1.15	0.0963	31.8	<0.00005	0.000606	<0.00001	<0.00005	<0.0002	0.00393	<0.0002	0.187	<0.00002
C-7	18-Apr-16	3.84	0.0295	2.36	<0.00001	0.8	0.095	27.1	<0.00005	0.000567	<0.00001	<0.00005	<0.0002	0.0032	<0.0002	0.22	<0.00002
C-7	25-Apr-16	3.43	0.029	2.23	<0.00001	0.542	0.11	28.7	<0.00005	0.000588	<0.00001	<0.00005	<0.0002	0.00262	<0.0002	0.321	<0.00002
C-7	02-May-16	3.4	0.0375	2.59	<0.00001	0.576	0.113	34.8	<0.00005	0.000678	<0.00001	0.00118	<0.0002	0.00207	<0.0002	0.389	<0.00002
C-7	9-May-16	3.04	0.0308	2.53	<0.00001	0.416	0.0994	34.8	<0.00005	0.000579	<0.00001	0.00063	<0.0002	0.00161	<0.0002	0.441	<0.00002
C-7	16-May-16	2.24	0.0265	1.93	<0.00001	0.456	0.0936	27.7	<0.00005	0.000523	<0.00001	0.0003	<0.0002	0.00137	<0.0002	0.488	<0.00002
C-7	23-May-16	2.79	0.0295	2.6	<0.00001	0.291	0.1	39.6	<0.00005	0.000594	<0.00001	0.00022	<0.0002	0.00132	<0.0002	0.732	<0.00002
C-7	30-May-16	2.01	0.0224	1.87	<0.00001	0.211	0.0994	28.7	0.00005	0.000476	<0.00001	0.0001	<0.0002	0.00118	<0.0002	0.698	<0.00002
C-7	6-Jun-16	2.42	0.0335	2.43	<0.00001	0.264	0.118	37.5	<0.00005	0.000731	<0.00001	<0.00005	<0.0002	0.00136	<0.0002	0.902	<0.00002
C-7	13-Jun-16	2.06	0.0273	1.9	<0.00001	0.213	0.0942	33.3	<0.00005	0.000557	<0.00001	<0.00005	<0.0002	0.00109	<0.0002	1.11	<0.00002
C-7	20-Jun-16	2.47	0.0263	1.97	<0.00001	0.2	0.0961	33.6	<0.00005	0.000585	<0.00001	<0.00005	<0.0002	0.00129	<0.0002	1.22	<0.00002
C-7	27-Jun-16	1.92	0.029	2.39	<0.00001	0.175	0.0985	37.1	<0.00005	0.000623	<0.00001	0.00011	<0.0002	0.00133	<0.0002	1.15	<0.00002
C-7	4-Jul-16	1.73	0.0304	1.99	<0.00001	0.158	0.0898	36.2	<0.00005	0.000566	<0.00001	0.00012	<0.0002	0.00114	<0.0002	1.06	<0.00002
C-7	11-Jul-16	1.8	0.0278	2.11	<0.00001	0.165	0.0987	38.3	<0.00005	0.000581	<0.00001	0.00009	<0.0002	0.00128	<0.0002	1.18	<0.00002
C-7	18-Jul-16	1.47	0.0206	1.9	<0.00001	0.102	0.0711	31.1	<0.00005	0.000482	<0.00001	<0.00005	<0.0002	0.00124	<0.0002	0.996	<0.00002
C-7	25-Jul-16	1.75	0.0289	1.79	<0.00001	0.154	0.0944	44.3	<0.00005	0.000636	<0.00001	0.00005	<0.0002	0.00142	<0.0002	1.29	<0.00002
C-7	1-Aug-16	1.49	0.0267	1.91	<0.00001	0.116	0.0916	40.3	<0.00005	0.000587	<0.00001	<0.00005	<0.0002	0.0015	<0.0002	1.3	<0.00002
C-7	08-Aug-16	1.31	0.0232	1.96	<0.00001	0.136	0.0878	36.9	<0.00005	0.000526	<0.00001	0.00009	<0.0002	0.00155	<0.0002	1.26	<0.00002
C-7	15-Aug-16	1.24	0.0248	1.65	<0.00001	0.116	0.072	32	<0.00005	0.000601	<0.00001	0.00007	<0.0002	0.00158	<0.0002	1.22	<0.00002
C-7	22-Aug-16	1.48	0.0274	1.91	<0.000010	0.12	0.0997	44.1	<0.00005	0.000667	<0.000010	<0.00005	<0.0002	0.00172	<0.0002	1.36	<0.00002
C-7	29-Aug-16																
C-7	05-Sep-16	1.43	0.0258	1.89	<0.00001	0.14	0.096	51.5	<0.00005	0.000539	<0.00001	<0.00005	<0.0002	0.00244	<0.0002	1.68	<0.00002
C-7	12-Sep-16																
C-7	19-Sep-16	1.1	0.0207	1.62	0.000018	0.093	0.078	38.4	<0.00005	0.000522	<0.000010	<0.00005	<0.0002	0.00268	<0.0002	1.56	<0.00002
C-7	26-Sep-16																
C-7	03-Oct-16	0.991	0.0192	1.55	<0.000010	0.08	0.0739	38.2	<0.00005	0.000425	<0.000010	<0.00005	<0.0002	0.00316	<0.0002	1.6	<0.00002
C-7	10-Oct-16																
C-7	17-Oct-16	0.745	0.015	1.22	<0.000010	0.062	0.0608	30.8	<0.00005	0.000348	<0.000010	<0.00005	<0.0002	0.00305	<0.0002	1.5	<0.00002
C-7	24-Oct-16																
C-7	31-Oct-16	0.855	0.0172	1.22	<0.000010	0.061	0.0632	32.4	<0.00005	0.000378	<0.000010	<0.00005	<0.0002	0.00382	<0.0002	1.61	<0.00002
C-7	07-Nov-16																
C-7	14-Nov-16	0.89	0.018	1.43	0.000019	0.102	0.0786	37.9	<0.00005	0.000428	<0.000010	<0.00005	<0.0002	0.00631	<0.0002	2.02	<0.00002
C-7	21-Nov-16																
C-7	28-Nov-16	0.8	0.0138	1.28	<0.000010	0.05	0.0576	31.3	0.00007	0.000384	<0.000010	<0.00005	<0.0002	0.0044	<0.0002	1.61	<0.00002

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
C-8	11-Apr-16	0	1000	613.9	7.67	447	3.5	47.8	127	14	0.24	0.26	<0.10	0.26	0.29			168	0.015	0.0145	0.0128
C-8	18-Apr-16	1	1000	949.8	7.53	511	4	31.5	190	13	0.21	<0.10	<0.10	<0.10	0.017			229	0.02	0.0133	0.0244
C-8	25-Apr-16	2	1000	948.6	7.59	454	3.5	30.5	149	5.8	0.26	<0.10	<0.10	<0.10	0.018			186	0.022	0.0148	0.027
C-8	02-May-16	3	1000	956.9	7.58	350	6.5	31.3	118	2.4	0.24	<0.10	<0.10	<0.10	0.012			144	0.033	0.0134	0.0246
C-8	09-May-16	4	1000	956.3	7.56	268	5.5	28	83.2		0.16							88	0.118	0.0105	0.0259
C-8	16-May-16	5	1000	961	7.55	221	12.8	28	71.5		0.14							73	0.026	0.00987	0.0246
C-8	23-May-16	6	1000	960.9	7.61	242	5.5	32	81.3		0.13							97	0.035	0.0129	0.041
C-8	30-May-16	7	1000	989.3	7.66	199	5.5	34	53.9		0.13							77	0.035	0.0123	0.0395
C-8	06-Jun-16	8	1000	981.1	7.68	212	5.5	36.5	57.7		0.14							85	0.038	0.0136	0.0468
C-8	13-Jun-16	9	1000	968.4	7.54	188	6.8	34	48.9		0.11							69	0.028	0.0108	0.0358
C-8	20-Jun-16	10	1000	984	7.6	178	10	33.5	40.3									65	0.033	0.00955	0.0374
C-8	27-Jun-16	11	1000	983.6	7.54	181	16	33	38.1		0.096							69	0.037	0.0106	0.0442
C-8	04-Jul-16	12	1000	979.4	7.55	173	5.5	33	40.8									65	0.037	0.00983	0.0462
C-8	11-Jul-16	13	1000	978.4	7.71	170	3	33	40.1		0.082							69	0.034	0.00854	0.0455
C-8	18-Jul-16	14	1000	977.6	7.59	137	3	27	32.5									51	0.033	0.0075	0.0385
C-8	25-Jul-16	15	1000	981	7.54	148	3.5	27.5	37.6		0.067							62	0.041	0.00763	0.0453
C-8	01-Aug-16	16	1000	980.8	7.6	143	3	29	37.5		0.072							64	0.036	0.00904	0.0514
C-8	08-Aug-16	17	1000	971.3	7.63	149	3.5	28	38.8		0.078							58	0.03	0.00903	0.0532
C-8	15-Aug-16	18	1000	983.2	7.61	153	3	34.5	41									64	0.029	0.00927	0.0588
C-8	22-Aug-16	19	1000	969.2	7.57	168	4	35.5	37		0.083							64.9	0.034	0.00999	0.0853
C-8	29-Aug-16	20	1000	972.4	7.39	156	4.3	39	40									62	0.033	0.00853	0.0831
C-8	05-Sep-16	21	1000	985.5	7.47	162	4.5	40	36.4		0.064							67	0.03	0.00783	0.0715
C-8	12-Sep-16	22	1000	987.1																	
C-8	19-Sep-16	23	1000	986.9	7.43	130	3	29.5	28		0.057							55	0.03	0.00702	0.0716
C-8	26-Sep-16	24	1000	981.7																	
C-8	03-Oct-16	25	1000	989.8	7.46	132	2	30	30		0.046							58	0.027	0.00689	0.0649
C-8	10-Oct-16	26	1000	984.9																	
C-8	17-Oct-16	27	1000	990.1	7.46	116	2.3	28	25.4		0.045							49	0.025	0.00582	0.0498
C-8	24-Oct-16	28	1000	984.6																	
C-8	31-Oct-16	29	1000	987.3	7.31	115	3	27.5	24.8		0.043							44	0.022	0.0052	0.0481
C-8	07-Nov-16	30	1000	988.6																	
C-8	14-Nov-16	31	1000	991.4	7.28	109	5	26	21.7		0.035							41	0.022	0.00461	0.0514
C-8	21-Nov-16	32	1000	985.6																	
C-8	28-Nov-16	33	1000	989	7.08	108	5.5	27	21.4		0.033							40	0.023	0.00395	0.0468

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Phosphorus (P)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**	**0.01**
C-8	11-Apr-16	0.0613	<0.00001	<0.00001	0.016	0.000056	42.4	<0.0001	0.00285	0.0054	0.002	0.00067	0.0136	15	0.169	0.00002	0.00471	0.012	0.023
C-8	18-Apr-16	0.0353	<0.00001	<0.00001	0.012	0.000064	57.4	<0.0001	0.00197	0.0026	<0.002	0.00204	0.015	20.7	0.324	0.00003	0.00426	0.00751	<0.010
C-8	25-Apr-16	0.0277	<0.00001	<0.00001	0.006	0.000062	47	0.0001	0.00123	0.002	<0.002	0.00178	0.00917	16.8	0.266	0.00004	0.00343	0.00449	<0.010
C-8	02-May-16	0.0234	<0.00001	<0.00001	0.009	0.000068	36	<0.0001	0.000842	0.0019	<0.002	0.00198	0.0113	13.1	0.187	0.00002	0.00359	0.00302	<0.010
C-8	09-May-16	0.0183	<0.00001	0.00005	0.007	0.000051	21.1	0.0001	0.000461	0.0018	0.013	0.00149	0.00623	8.68	0.119	<0.000004	0.00317	0.00161	<0.010
C-8	16-May-16	0.0161	<0.00001	<0.00001	0.005	0.000056	19.1	<0.0001	0.000322	0.001	<0.002	0.00126	0.00402	6.14	0.0906	<0.000004	0.00261	0.00081	<0.010
C-8	23-May-16	0.022	<0.00001	<0.00001	0.007	0.000078	25.7	<0.0001	0.000463	0.0013	<0.002	0.00202	0.00421	8.05	0.136	0.00002	0.00375	0.00113	0.023
C-8	30-May-16	0.0231	<0.00001	<0.00001	0.006	0.000063	20.7	<0.0001	0.000387	0.001	0.003	0.00192	0.00449	6.23	0.121	0.00001	0.00323	0.0011	<0.010
C-8	06-Jun-16	0.0229	<0.00001	<0.00001	0.006	0.000085	22.9	<0.0001	0.000333	0.0011	0.004	0.00218	0.00431	6.73	0.104	0.000009	0.00384	0.00071	<0.010
C-8	13-Jun-16	0.0174	<0.00001	<0.00001	0.004	0.000085	18.1	<0.0001	0.000262	0.0007	<0.002	0.00148	0.00342	5.69	0.0852	<0.00001	0.00282	0.00056	<0.010
C-8	20-Jun-16	0.0184	<0.00001	<0.00001	0.003	0.000093	17.4	<0.0001	0.000263	0.0016	<0.002	0.00157	0.0028	5.31	0.0956	<0.00001	0.00288	0.00057	<0.010
C-8	27-Jun-16	0.0196	<0.00001	<0.00001	0.004	0.000108	18.9	<0.0001	0.00022	0.0008	<0.002	0.00158	0.00298	5.34	0.0935	<0.00001	0.00288	0.00047	<0.010
C-8	04-Jul-16	0.0181	<0.00001	<0.00001	0.003	0.000104	17.2	<0.0001	0.000185	0.0011	<0.002	0.00118	0.00279	5.33	0.0793	<0.00001	0.00288	0.00052	<0.010
C-8	11-Jul-16	0.0203	<0.00001	<0.00001	0.003	0.00014	18.6	<0.0001	0.000183	0.0016	0.002	0.0013	0.0025	5.47	0.0838	<0.00001	0.00303	0.00041	<0.010
C-8	18-Jul-16	0.0148	<0.00001	<0.00001	0.002	0.000115	13.9	<0.0001	0.000152	0.0024	0.003	0.00128	0.00185	3.9	0.0625	<0.00001	0.00224	0.00032	<0.010
C-8	25-Jul-16	0.0155	<0.00001	<0.00001	0.002	0.000108	16.7	<0.0001	0.000123	0.0013	<0.002	0.00116	0.00232	4.91	0.0672	<0.00001	0.00234	0.00028	<0.010
C-8	01-Aug-16	0.0172	<0.00001	<0.00001	0.003	0.00012	17.4	<0.0001	0.000115	0.0027	0.002	0.00065	0.00215	4.9	0.0602	<0.00001	0.00318	0.00027	<0.010
C-8	08-Aug-16	0.0169	<0.00001	<0.00001	0.001	0.000142	15.5	<0.0001	0.000114	0.0013	<0.002	0.00091	0.002	4.58	0.0616	<0.00001	0.00313	0.0003	<0.010
C-8	15-Aug-16	0.0165	<0.00001	<0.00001	0.002	0.000158	17.6	0.0001	0.000122	0.0007	0.003	0.00068	0.00164	4.98	0.0588	<0.00001	0.00348	0.00031	<0.010
C-8	22-Aug-16	0.0196	0.000002	0.000004	0.003	0.000169	17.9	0.00002	0.00011	0.0009	0.002	0.0012	0.0017	4.93	0.0599	0.000009	0.00382	0.0003	<0.01
C-8	29-Aug-16	0.0192	<0.000010	<0.000010	0.002	0.000176	17	<0.00010	0.000107	0.0009	<0.002	0.00076	0.0016	4.79	0.0588	<0.00001	0.00333	0.00026	<0.010
C-8	05-Sep-16	0.0169	<0.000010	<0.000010	0.003	0.000164	18.3	<0.00010	0.000101	0.0005	<0.002	0.00113	0.002	5.19	0.0552	<0.00001	0.00318	0.00023	<0.010
C-8	12-Sep-16																		
C-8	19-Sep-16	0.0148	0.000012	<0.000010	0.003	0.000165	15.5	<0.00010	0.000087	0.00049	<0.002	0.00108	0.00163	3.87	0.0496	<0.00001	0.00253	0.0002	<0.010
C-8	26-Sep-16																		
C-8	03-Oct-16	0.0164	<0.000010	<0.000010	<0.001	0.000229	15.8	<0.00010	0.000127	0.00038	<0.002	0.00097	0.00136	4.41	0.0628	<0.00001	0.00259	0.00019	<0.010
C-8	10-Oct-16																		
C-8	17-Oct-16	0.0142	<0.000010	<0.000010	0.001	0.000192	13.6	0.00018	0.000081	0.00085	<0.002	0.00089	0.0011	3.57	0.0486	<0.00001	0.00219	0.00024	<0.010
C-8	24-Oct-16																		
C-8	31-Oct-16	0.0134	<0.000010	<0.000010	0.001	0.000189	12.8	<0.00010	0.000094	0.00034	<0.002	0.00069	0.00104	2.9	0.0523	<0.00001	0.00185	0.00018	<0.010
C-8	07-Nov-16																		
C-8	14-Nov-16	0.0131	<0.000010	<0.000010	0.001	0.000181	11.6	<0.00010	0.000071	0.00078	<0.002	0.0006	0.00084	2.86	0.039	<0.00001	0.00201	0.00017	<0.010
C-8	21-Nov-16																		
C-8	28-Nov-16	0.0116	<0.000010	<0.000010	<0.001	0.000179	11.3	<0.00010	0.000059	0.0004	<0.002	0.00069	0.0008	2.82	0.0304	0.00001	0.00188	0.00018	0.013

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.01	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
C-8	11-Apr-16	18.4	0.0013	1.52	0.00005	4.76	0.559	43.1	<0.00005	0.000226	0.00001	0.00008	<0.0002	0.0907	<0.0002	0.022	0.00006
C-8	18-Apr-16	12.9	0.0023	1.72	<0.00001	4.38	0.747	59	<0.00005	0.000167	0.00001	0.00006	<0.0002	0.0812	<0.0002	0.023	0.00006
C-8	25-Apr-16	9.43	0.0018	1.7	<0.00001	2.58	0.64	43.8	<0.00005	0.00015	0.00001	0.00005	<0.0002	0.0774	<0.0002	0.017	0.00002
C-8	02-May-16	8.32	0.0019	2	<0.00001	2.35	0.458	40.1	<0.00005	0.000148	0.00002	0.00166	<0.0002	0.0851	<0.0002	0.01	0.00002
C-8	09-May-16	6.4	0.0016	1.69	<0.00001	1.36	0.315	26.9	<0.00005	0.000111	0.00002	0.00152	0.0002	0.0643	<0.0002	0.007	0.00005
C-8	16-May-16	4.55	0.0013	1.26	<0.00001	0.854	0.236	18.1	<0.00005	0.000092	0.00002	0.00019	<0.0002	0.0567	<0.0002	0.008	0.00003
C-8	23-May-16	6.9	0.0018	2.27	<0.00001	0.952	0.318	28	0.00005	0.00012	0.00004	0.00036	<0.0002	0.0608	<0.0002	0.011	0.00007
C-8	30-May-16	5.49	0.0014	1.74	<0.00001	0.667	0.27	18.4	<0.00005	0.000103	0.00004	0.00012	<0.0002	0.0631	<0.0002	0.008	0.00004
C-8	06-Jun-16	5.53	0.0019	2.01	<0.00001	0.646	0.281	16.6	<0.00005	0.000131	0.00003	<0.00005	<0.0002	0.0538	<0.0002	0.007	0.00004
C-8	13-Jun-16	4.26	0.0015	1.43	<0.00001	0.465	0.233	12.6	<0.00005	0.000091	0.00002	<0.00005	<0.0002	0.0412	<0.0002	0.008	<0.00002
C-8	20-Jun-16	4.86	0.0013	1.44	<0.00001	0.402	0.215	12.4	<0.00005	0.000092	0.00002	<0.00005	<0.0002	0.0459	<0.0002	0.008	0.00004
C-8	27-Jun-16	4.08	0.0014	1.73	<0.00001	0.35	0.217	13.3	<0.00005	0.000102	0.00002	0.00011	<0.0002	0.0393	<0.0002	0.009	0.00002
C-8	04-Jul-16	3.96	0.0015	1.58	0.00001	0.313	0.204	13.1	<0.00005	0.00009	0.00003	0.00012	<0.0002	0.0333	<0.0002	0.008	0.00004
C-8	11-Jul-16	3.99	0.0013	1.58	<0.00001	0.291	0.226	13.3	<0.00005	0.0001	0.00004	0.00009	<0.0002	0.0376	<0.0002	0.01	0.00008
C-8	18-Jul-16	3.12	0.001	1.4	<0.00001	0.212	0.159	10.2	<0.00005	0.00008	0.00005	0.00006	0.0002	0.0277	<0.0002	0.009	0.00006
C-8	25-Jul-16	3.35	0.0014	1.19	<0.00001	0.22	0.169	13.5	<0.00005	0.000093	0.00002	0.00007	<0.0002	0.027	<0.0002	0.008	0.00003
C-8	01-Aug-16	3.33	0.0012	1.55	<0.00001	0.186	0.186	13.2	<0.00005	0.000093	0.00002	0.00009	<0.0002	0.0285	<0.0002	0.008	<0.00002
C-8	08-Aug-16	3.03	0.0011	1.65	<0.00001	0.191	0.184	11.7	<0.00005	0.000093	0.00001	0.00007	<0.0002	0.0284	<0.0002	0.01	<0.00002
C-8	15-Aug-16	3.2	0.0012	1.62	<0.00001	0.199	0.168	10.8	<0.00005	0.000113	0.00002	<0.00005	0.0002	0.0309	<0.0002	0.01	0.00003
C-8	22-Aug-16	3.65	0.00135	1.7	0	0.54	0.195	11.7	0.000005	0.000125	0.00002	0.0001	0.0002	0.0254	0.00008	0.008	0.00004
C-8	29-Aug-16	3.33	0.00127	1.45	<0.000010	0.2	0.194	11.9	<0.00005	0.000113	0.000029	<0.00005	<0.0002	0.0238	<0.0002	0.011	0.00002
C-8	05-Sep-16	3.32	0.00106	1.62	<0.000010	0.19	0.18	13.4	<0.00005	0.000092	0.000023	<0.00005	<0.0002	0.0244	<0.0002	0.011	<0.00002
C-8	12-Sep-16																
C-8	19-Sep-16	2.59	0.00091	1.41	0.000016	0.119	0.148	8.9	<0.00005	0.000095	0.00002	<0.00005	<0.0002	0.0213	<0.0002	0.0101	<0.00002
C-8	26-Sep-16																
C-8	03-Oct-16	2.75	0.00089	1.48	<0.000010	0.113	0.162	10.5	<0.00005	0.000079	0.000017	<0.00005	<0.0002	0.0224	<0.0002	0.0163	0.00004
C-8	10-Oct-16																
C-8	17-Oct-16	2.11	0.0007	1.11	0.000053	0.09	0.137	7.7	<0.00005	0.000066	0.000021	<0.00005	<0.0002	0.0207	<0.0002	0.0118	0.00004
C-8	24-Oct-16																
C-8	31-Oct-16	1.84	0.00063	1.02	<0.000010	0.064	0.123	7.4	<0.00005	0.000062	0.000013	<0.00005	<0.0002	0.0173	<0.0002	0.0136	0.00002
C-8	07-Nov-16																
C-8	14-Nov-16	1.7	0.00059	0.92	<0.000010	0.068	0.115	6.5	<0.00005	0.000058	0.000032	<0.00005	<0.0002	0.0144	<0.0002	0.0134	0.00003
C-8	21-Nov-16																
C-8	28-Nov-16	1.58	0.00057	0.9	<0.000010	0.07	0.106	6	0.00009	0.000051	<0.000010	<0.00005	0.0002	0.0141	<0.0002	0.013	<0.00002

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
C-9	08-Aug-16	0	1000	350	7.75	1405	4.5	54	609	42	0.28	0.87	<0.10	0.87	0.42			614	0.027	0.00129	0.00259
C-9	15-Aug-16	1	1000	960.1	7.78	1979	5.5	90	910	65	0.37	0.95	<0.10	0.95	0.054			938	0.018	0.00219	0.0079
C-9	22-Aug-16	2	1000	968.7	7.72	1336	5	73	600	29	0.4	0.19	<0.10	0.19	0.17			627	0.019	0.0022	0.0049
C-9	29-Aug-16	3	1000	965.6	7.64	969	8	66	390	12	<0.10	<0.10	<0.10	<0.10	0.42			438	0.018	0.002	0.00381
C-9	05-Sep-16	4	1000	949.8	7.74	867	6.5	68	340		0.23							402	0.015	0.0019	0.003
C-9	12-Sep-16	5	1000	968.7	7.71	718	5	55	278		0.23							300	0.014	0.00188	0.00322
C-9	19-Sep-16	6	1000	964.3	7.75	558	4.3	53	210		0.2							258	0.013	0.00189	0.00328
C-9	26-Sep-16	7	1000	954.9	7.61	533	3.5	54	200		0.17										
C-9	3-Oct-16	8	1000	959.3	7.71	485	2.5	51	190		0.15							227	0.014	0.00184	0.00357
C-9	10-Oct-16	9	1000	961.2	7.59	474	3.8	51	160		0.15							178	0.009	0.0018	0.00364
C-9	17-Oct-16	10	1000	958.6	7.77	450	3.3	51.8	161		0.14							209	0.012	0.00177	0.00357
C-9	24-Oct-16	11	1000	964.6	7.51	407	4.5	48	152									167	0.011	0.00156	0.00343
C-9	31-Oct-16	12	1000	971.8	7.69	431	3.8	53	156		0.13							178	0.01	0.00164	0.00347
C-9	7-Nov-16	13	1000	973.7	7.63	429	3.8	54.5	158									204	0.014	0.0016	0.00418
C-9	14-Nov-16	14	1000	979.7	7.69	426	3.8	54	139		0.12							178	0.01	0.00173	0.00391
C-9	21-Nov-16	15	1000	969.4	7.48	380	5	48.3	135									173	0.011	0.00145	0.00347
C-9	28-Nov-16	16	1000	957.9	7.58	350	9	47	124		0.1							140	0.011	0.00124	0.00314
C-9	5-Dec-16	17	1000	968	7.4	359	6.5	47	129									164	0.011	0.00135	0.00356
C-10	3-Oct-16	0	5750.5	1076	7.25	7350	109	130	3800	1100	0.73	1.2	<1.0	1.2	0.93	0.00277	<0.00050	4870	0.009	0.0143	0.00656
C-10	10-Oct-16	1	1000	991	7.33	4890	65.5	145	2700	410	0.76	<1.0	<1.0	<1.0	4.6	0.0021	0.00057	2570	0.003	0.0174	0.0334
C-10	17-Oct-16	2	1000	992.5	7.38	3510	62.3	132.5	2100	180	0.59	<1.0	<1.0	<1.0	1.8	0.00208	<0.00050	2480	0.002	0.0182	0.0418
C-10	24-Oct-16	3	1000	990.7	7.19	3060	71.5	136	1580	120	0.55	<1.0	<1.0	<1.0	1.4	0.00161	<0.00050	1910	0.002	0.0195	0.0332
C-10	31-Oct-16	4	1000	973.7	7.39	2840	62	144	1570		0.59				1.3	0.00162	0.00062	1870	0.002	0.0209	0.0328
C-10	7-Nov-16	5	1000	980.1	7.36	2670	37	150	1480		0.59				0.85	0.00137	<0.00050	1970	0.002	0.0213	0.0355
C-10	14-Nov-16	6	1000	986.4	7.35	1898	68	151	1480		0.58				0.81	0.00104	<0.00050	1630	0.001	0.0224	0.0305
C-10	21-Nov-16	7	1000	993.6	7.35	2680	67.5	154	1470		0.58				0.6	0.00055	0.00079	1960	<0.001	0.0211	0.0275
C-10	28-Nov-16	8	1000	985	7.41	2530	57	161	1510		0.6				0.53	0.00066	0.00052	1670	0.001	0.0193	0.0231
C-10	5-Dec-16	9	1000	987.4	7.37	2680	58	158	1450		0.56				0.17	0.00107	0.00102	1560	<0.001	0.0183	0.0276

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Phosphorus (P)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**	**0.01**
C-9	08-Aug-16	0.0661	<0.00001	<0.00001	0.018	0.000296	163	0.0002	0.0336	0.0104	0.031	0.0007	0.00837	50.1	0.55	0.00003	0.00658	0.0635	0.018
C-9	15-Aug-16	0.0402	<0.00001	<0.00001	0.017	0.000218	238	0.0002	0.0264	0.0067	0.071	0.00087	0.0102	83.3	0.664	0.00004	0.0155	0.071	<0.010
C-9	22-Aug-16	0.0315	<0.000010	<0.000010	0.016	0.000077	162	0.0002	0.00591	0.0038	0.011	0.00048	0.00962	53.9	0.139	0.00001	0.0119	0.018	0.02
C-9	29-Aug-16	0.0226	<0.000010	<0.000010	0.009	0.000054	114	<0.00010	0.00328	0.003	0.008	0.00028	0.00539	37.3	0.0583	<0.00001	0.00767	0.0118	<0.010
C-9	05-Sep-16	0.0198	<0.00001	<0.00001	0.011	0.000031	103	<0.00010	0.00186	0.0017	0.005	0.00029	0.00661	34.8	0.0251	<0.00001	0.00604	0.00895	<0.01
C-9	12-Sep-16	0.0205	<0.00001	<0.00001	0.009	0.000049	78.6	<0.0001	0.00149	0.00132	0.003	<0.00005	0.00518	25.3	0.0171	<0.00001	0.00504	0.00719	<0.01
C-9	19-Sep-16	0.0194	<0.000010	<0.000010	0.008	0.000029	70.4	<0.00010	0.00134	0.00102	0.002	0.0003	0.00506	20.1	0.0126	<0.00001	0.0044	0.0058	<0.010
C-9	26-Sep-16																		
C-9	3-Oct-16	0.0193	<0.000010	<0.000010	0.005	0.000035	59.7	<0.0001	0.00132	0.00065	<0.002	0.00021	0.00374	18.8	0.00893	<0.00001	0.00409	0.00545	<0.01
C-9	10-Oct-16	0.018	<0.000010	<0.000010	0.005	0.000027	46.6	<0.0001	0.00142	0.00066	<0.002	0.00006	0.00339	15	0.00573	<0.00001	0.00381	0.00494	<0.01
C-9	17-Oct-16	0.0193	<0.000010	<0.000010	0.005	0.000025	56.6	<0.00010	0.00137	0.00071	<0.002	0.00026	0.00367	16.5	0.00513	<0.00001	0.00433	0.00499	<0.010
C-9	24-Oct-16	0.0167	<0.000010	<0.000010	0.002	0.000027	47.3	<0.00010	0.00127	0.00046	<0.002	<0.00005	0.0028	11.8	0.0053	<0.00001	0.00378	0.00419	<0.010
C-9	31-Oct-16	0.0171	<0.000010	<0.000010	0.004	0.000033	49.5	<0.00010	0.00147	0.00067	<0.002	0.00022	0.00348	13.2	0.00475	<0.00001	0.00385	0.00468	<0.010
C-9	7-Nov-16	0.0185	<0.000010	<0.000010	0.008	0.000026	53.8	<0.00010	0.00143	0.00079	<0.002	0.0002	0.00344	16.9	0.00402	0.00001	0.0046	0.00468	<0.010
C-9	14-Nov-16	0.0177	<0.000010	<0.000010	0.004	0.000033	47	<0.00010	0.00155	0.00113	<0.002	0.00029	0.00303	14.8	0.00412	<0.00001	0.00427	0.00482	<0.010
C-9	21-Nov-16	0.0154	<0.000010	<0.000010	0.005	0.000026	46.9	<0.00010	0.00134	0.0006	0.002	0.00006	0.00284	13.6	0.00385	<0.00001	0.00371	0.00429	<0.010
C-9	28-Nov-16	0.0129	<0.000010	<0.000010	0.002	0.000031	41.2	<0.00010	0.00114	0.0004	<0.002	0.00021	0.0026	11.5	0.0026	0.00002	0.0029	0.00344	0.011
C-9	5-Dec-16	0.0152	<0.000010	<0.000010	0.008	0.000023	44.7	<0.00010	0.00118	0.00035	<0.002	<0.00005	0.00248	12.7	0.00335	<0.00001	0.00344	0.00362	<0.010
C-10	3-Oct-16	0.0224	0.000012	<0.000010	0.155	0.283	692	<0.00010	0.494	0.0486	0.002	0.427	0.213	763	47	0.00041	0.00303	0.817	3.82
C-10	10-Oct-16	0.0121	<0.000010	<0.000010	0.129	0.0775	454	<0.00010	0.216	0.113	0.003	0.193	0.151	350	16.7	0.00109	0.00346	0.435	1.32
C-10	17-Oct-16	0.0122	<0.000010	<0.000010	0.141	0.0642	674	<0.00010	0.175	0.0786	0.002	0.246	0.109	193	13.4	0.00012	0.00314	0.443	0.437
C-10	24-Oct-16	0.0124	<0.000010	<0.000010	0.1	0.055	631	<0.00010	0.116	0.0538	0.006	0.237	0.0646	82.2	9.66	0.00011	0.00235	0.394	0.189
C-10	31-Oct-16	0.0112	<0.000010	<0.000010	0.1	0.044	661	0.00013	0.0954	0.0452	0.003	0.211	0.0629	52.2	8.86	0.00005	0.00181	0.411	0.117
C-10	7-Nov-16	0.0131	<0.000010	<0.000010	0.098	0.0432	702	<0.00010	0.0889	0.0426	0.007	0.187	0.0543	52.8	9.8	0.00004	0.00184	0.464	0.071
C-10	14-Nov-16	0.0124	<0.000010	<0.000010	0.063	0.038	600	<0.00010	0.0674	0.0364	0.005	0.141	0.044	32.8	7.67	0.00005	0.00191	0.41	0.042
C-10	21-Nov-16	0.0117	<0.000010	<0.000010	0.075	0.0338	736	<0.00010	0.0619	0.0257	0.006	0.119	0.044	28.5	7.53	0.00005	0.00198	0.403	0.03
C-10	28-Nov-16	0.0114	0.000011	<0.000010	0.056	0.0276	624	<0.00010	0.048	0.0171	0.004	0.0775	0.0394	26.1	6.22	0.00005	0.00198	0.351	0.03
C-10	5-Dec-16	0.0109	<0.000010	<0.000010	0.05	0.0349	583	<0.00010	0.0648	0.0164	0.003	0.079	0.0341	24.3	6.86	0.00003	0.002	0.402	0.016

Blank cells indicate parameter was not analyzed.

Trickle Leach Column	Sampling Date	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.01	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
C-9	08-Aug-16	21.6	0.017	1.1	<0.00001	46.4	0.548	215	<0.00005	0.000156	0.00021	0.00013	0.0005	0.0219	<0.0002	0.018	0.00968
C-9	15-Aug-16	24.7	0.0328	1.81	<0.00001	74.7	0.72	289	<0.00005	0.000042	0.00047	0.00023	0.0004	0.102	<0.0002	0.015	0.0107
C-9	22-Aug-16	19.9	0.0178	1.65	0.00001	44.1	0.574	219	0.00006	0.000035	0.00008	<0.00005	0.0003	0.058	<0.0002	0.005	0.00369
C-9	29-Aug-16	15.2	0.0104	1.15	<0.000010	26.8	0.426	142	<0.00005	0.000036	0.00005	<0.00005	<0.0002	0.0375	<0.0002	0.004	0.00197
C-9	05-Sep-16	13.8	0.0068	1.27	<0.00001	21.4	0.345	137	<0.00005	0.000025	0.00003	<0.00005	<0.0002	0.0334	<0.0002	0.003	0.00132
C-9	12-Sep-16	11.1	0.00545	1.21	<0.000010	13.6	0.28	96.9	<0.00005	0.000025	0.000015	<0.00005	<0.0002	0.0273	<0.0002	0.0026	0.00084
C-9	19-Sep-16	9.42	0.00394	1.06	<0.000010	9.28	0.23	75.8	<0.00005	0.000024	0.000017	<0.00005	<0.0002	0.0255	<0.0002	0.0021	0.00066
C-9	26-Sep-16																
C-9	3-Oct-16	8.12	0.0027	1.06	<0.000010	5.76	0.211	67.6	<0.00005	0.000017	0.000017	<0.00005	<0.0002	0.0198	<0.0002	0.0027	0.00042
C-9	10-Oct-16	6.63	0.00222	0.83	<0.000010	3.94	0.182	50.3	<0.00005	0.000015	0.000011	<0.00005	<0.0002	0.0175	<0.0002	0.0023	0.00034
C-9	17-Oct-16	6.94	0.00215	0.89	<0.000010	3.85	0.2	58.3	<0.00005	0.000013	0.000012	<0.00005	<0.0002	0.0185	<0.0002	0.0022	0.0003
C-9	24-Oct-16	4.92	0.00166	0.66	<0.000010	2.25	0.169	39.6	<0.00005	0.000013	0.000011	<0.00005	<0.0002	0.0141	<0.0002	0.0023	0.00023
C-9	31-Oct-16	5.82	0.00188	0.79	<0.000010	2.5	0.175	48.9	<0.00005	0.000014	<0.000010	<0.00005	0.0002	0.0157	<0.0002	0.0029	0.00022
C-9	7-Nov-16	6.67	0.00204	0.89	<0.000010	2.54	0.192	57.7	<0.00005	0.000017	<0.000010	<0.00005	<0.0002	0.0134	<0.0002	0.0025	0.0002
C-9	14-Nov-16	5.66	0.00169	0.8	<0.000010	1.9	0.18	46.7	<0.00005	0.000034	0.00001	<0.00005	<0.0002	0.0142	<0.0002	0.0031	0.00018
C-9	21-Nov-16	5.12	0.0017	0.71	0.00005	1.65	0.159	44	<0.00005	0.000013	0.000012	<0.00005	<0.0002	0.0132	<0.0002	0.0045	0.00016
C-9	28-Nov-16	4.37	0.00145	0.62	<0.000010	1.19	0.129	36.2	0.0001	0.000011	<0.000010	<0.00005	<0.0002	0.00986	<0.0002	0.003	0.00011
C-9	5-Dec-16	4.81	0.00156	0.66	<0.000010	1.18	0.154	40.9	<0.00005	0.000041	0.000011	<0.00005	<0.0002	0.0116	<0.0002	0.0025	0.00013
C-10	3-Oct-16	162	9.1	5.36	0.000437	408	3.01	2590	<0.00005	0.124	<0.000010	0.00007	<0.0002	0.00614	<0.0002	38.2	0.00051
C-10	10-Oct-16	92.6	2.99	5.27	0.042	144	1.78	1160	<0.00005	0.0352	<0.000010	<0.00005	<0.0002	0.00874	<0.0002	15.6	0.00031
C-10	17-Oct-16	73.6	1.36	6.45	0.0268	53.3	1.99	963	<0.00005	0.0188	<0.000010	<0.00005	<0.0002	0.0108	<0.0002	14	0.0002
C-10	24-Oct-16	44.8	0.663	5.52	0.0324	16.8	1.8	627	<0.00005	0.0165	<0.000010	<0.00005	<0.0002	0.0117	<0.0002	11.8	0.00012
C-10	31-Oct-16	39.8	0.557	5.98	0.000866	11.9	1.55	680	<0.00005	0.0145	<0.000010	<0.00005	<0.0002	0.0156	<0.0002	12.6	0.00012
C-10	7-Nov-16	44	0.503	7.77	0.0125	10.8	1.71	766	<0.00005	0.0161	<0.000010	<0.00005	<0.0002	0.015	<0.0002	12.9	0.00012
C-10	14-Nov-16	31.2	0.358	6.04	0.0122	6.37	1.37	601	<0.00005	0.0146	<0.000010	<0.00005	<0.0002	0.0156	<0.0002	11.8	0.00009
C-10	21-Nov-16	32.5	0.383	6.49	0.0147	5.22	1.3	762	<0.00005	0.0153	<0.000010	<0.00005	<0.0002	0.016	<0.0002	11.3	0.00008
C-10	28-Nov-16	28.5	0.329	6.19	0.00454	3.75	1.07	622	0.00009	0.0153	<0.000010	<0.00005	<0.0002	0.0129	<0.0002	10.1	0.00007
C-10	5-Dec-16	25.3	0.373	5.62	0.00505	2.83	1.02	554	<0.00005	0.0182	<0.000010	<0.00005	<0.0002	0.0128	<0.0002	11.7	0.00008

Blank cells indicate parameter was not analyzed.

APPENDIX I.
AEG 2016 and 2017 Humidity Cell Data

Humidity Cell	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
HC-1	03-Mar-16	0	750	590.3	7.45	142	4	19	28.1	3.4	0.1	<0.10	<0.10	<0.10	0.087			36	0.069	0.00355	0.0003
HC-1	10-Mar-16	1	500	420	7.23	240	3.2	14.6	81.9	7.2	0.12	<0.10	<0.10	<0.10	0.0067			88	0.056	0.00444	0.00034
HC-1	17-Mar-16	2	500	485	7.21	260	5	19	90.8	0.86	0.2	<0.10	<0.10	<0.10	0.026			102	0.069	0.00329	0.00024
HC-1	24-Mar-16	3	500	483	7.16	186	4	15.5	70.9	<0.50	<0.10	<0.10	<0.10	<0.10	0.0082			76	0.064	0.00262	0.00017
HC-1	31-Mar-16	4	500	469	7.17	177	5.8	17.3	56.7		0.055							64	0.056	0.0041	0.00014
HC-1	07-Apr-16	5	500	468	7.13	132	3.5	15	39.3		0.032							57	0.057	0.00188	0.00011
HC-1	14-Apr-16	6	500	470	7.28	168	3.5	18.3	45.7		0.046							64	0.065	0.00214	0.00012
HC-1	21-Apr-16	7	500	473	7.24	158	4	19.2	44.4		0.044							58	0.074	0.0025	0.00012
HC-1	28-Apr-16	8	500	471	7.2	101	7	18.8	24.5		0.024							39	0.034	0.00139	0.00007
HC-1	05-May-16	9	500	470	7.12	144	8	14	45		0.035							58	0.046	0.00159	0.00008
HC-1	12-May-16	10	500	464	7.11	136	5.5	15.5	40.3		0.074							46	0.046	0.00164	0.00009
HC-1	19-May-16	11	500	462	7.34	141	5.5	21.5	38		0.037							50	0.043	0.00208	0.00008
HC-1	26-May-16	12	500	458	7.4	118	6.5	17.3	32.1		0.027							51	0.035	0.00199	0.0001
HC-1	02-Jun-16	13	500	461	7.11	107	6	13.8	29.4		0.02							42	0.033	0.00161	0.00008
HC-1	09-Jun-16	14	500	463	7.24	156	6	19.5	46.2		0.029							65	0.049	0.00202	0.00012
HC-1	16-Jun-16	15	500	459	7.12	123	10.5	19	34.3		0.019							46	0.031	0.00163	0.00008
HC-1	23-Jun-16	16	500	464	7.31	134	9.5	23.5	32.1									50	0.032	0.00161	0.00009
HC-1	30-Jun-16	17	500	462	7.27	135	14.8	21	33.7		0.019							56	0.039	0.0016	0.00009
HC-1	07-Jul-16	18	500	460	7.26	133	3.5	19	42.9									61	0.036	0.00148	0.00008
HC-1	14-Jul-16	19	500	467	7.25	117	3	21	30.6		0.017							50	0.031	0.00112	0.00011
HC-1	21-Jul-16	20	500	473	7.21	161	2.5	20	47.3									60	0.039	0.00129	0.00014
HC-1	28-Jul-16	21	500	471	7.11	173	3	20.3	54.8		0.021							72	0.045	0.00154	0.0001
HC-1	04-Aug-16	22	500	478	7.59	145	3	27	40.2		0.021							65	0.035	0.00139	0.00011
HC-1	11-Aug-16	23	500	478	7.55	136	4.5	26.5	42.5		0.019							59	0.041	0.00139	0.00007
HC-1	18-Aug-16	24	500	486	7.51	154	3.5	27	44									70	0.056	0.00135	0.00008
HC-1	25-Aug-16	25	500	488	7.3	183	3.5	30	52		0.022							80	0.05	0.00151	0.00012
HC-1	01-Sep-16	26	500	487																	
HC-1	08-Sep-16	27	500	486	7.42	161	8.3	30.5	42.3		0.024							71	0.021	0.00088	0.00006
HC-1	15-Sep-16	28	500	489																	
HC-1	22-Sep-16	29	500	491	7.22	154	3.8	27.5	38		0.024							66	0.036	0.00098	0.00007
HC-1	29-Sep-16	30	500	485																	
HC-1	06-Oct-16	31	500	487	7.47	166	2.8	33	42		0.016							72	0.042	0.00115	0.00007
HC-1	13-Oct-16	32	500	482																	
HC-1	20-Oct-16	33	500	486	7.27	158	4.5	32	40.6		0.02							75	0.035	0.001	0.0001
HC-1	27-Oct-16	34	500	489																	
HC-1	03-Nov-16	35	500	484	7.19	125	4.5	19	37		0.031							48	0.017	0.00052	0.00007
HC-1	10-Nov-16	36	500	486																	
HC-1	17-Nov-16	37	500	489	7.18	130	7	30	13.5		0.017							52	0.009	0.0005	<0.00005
HC-1	24-Nov-16	38	500	491																	
HC-1	01-Dec-16	39	500	491	6.86	127	8	24	32.3		0.016							70	0.028	0.00091	0.00012

Blank cells indicate parameter was not analyzed.

Humidity Cell	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**
HC-1	03-Mar-16	0.0123	<0.00001	<0.00001	0.005	0.000007	10.3	<0.0001	0.000914	0.0013	0.004	0.00008	0.00284	2.56	0.0502	0.0002	0.00046	0.00328
HC-1	10-Mar-16	0.021	<0.00001	<0.00001	0.007	0.000021	24.5	<0.0001	0.000235	0.0005	<0.002	0.00005	0.00321	6.6	0.0679	0.000007	0.00135	0.00057
HC-1	17-Mar-16	0.0155	<0.00001	<0.00001	0.01	0.000026	26.8	<0.0001	0.000289	0.0004	<0.002	<0.00005	0.00368	8.41	0.085	0.000005	0.00084	0.00033
HC-1	24-Mar-16	0.0114	<0.00001	<0.00001	0.007	0.000012	20.2	<0.0001	0.000165	0.0005	<0.002	0.00006	0.00236	6.11	0.0528	0.00008	0.00055	0.00014
HC-1	31-Mar-16	0.0094	<0.00001	<0.00001	0.004	0.000023	17.2	<0.0001	0.000131	0.0005	<0.002	0.00009	0.00169	5.01	0.0458	<0.000004	0.00049	0.00012
HC-1	07-Apr-16	0.0093	<0.00001	<0.00001	0.006	0.000023	15.1	<0.0001	0.000124	0.0006	0.002	0.00007	0.00152	4.69	0.0477	<0.000004	0.00032	0.00007
HC-1	14-Apr-16	0.0086	<0.00001	<0.00001	0.004	0.000019	17.3	<0.0001	0.000129	0.0005	<0.002	0.00008	0.00161	4.96	0.0457	<0.000004	0.0003	0.00005
HC-1	21-Apr-16	0.0095	<0.00001	<0.00001	0.004	0.000016	15.4	<0.0001	0.000105	0.0003	<0.002	0.00013	0.00136	4.69	0.0429	<0.000004	0.0003	0.00015
HC-1	28-Apr-16	0.0077	<0.00001	<0.00001	0.003	0.000019	10.2	<0.0001	0.000103	0.0003	<0.002	0.00009	0.00098	3.2	0.0449	<0.000004	0.00012	0.00005
HC-1	05-May-16	0.0097	<0.00001	<0.00001	0.002	0.00002	15.3	<0.0001	0.000099	0.0006	<0.002	0.00011	0.00133	4.74	0.0443	<0.000004	0.00036	0.00007
HC-1	12-May-16	0.008	<0.00001	<0.00001	0.003	0.000017	11.4	<0.0001	0.000085	0.0002	<0.002	0.00011	0.001	4.27	0.037	<0.000004	0.0002	0.00007
HC-1	19-May-16	0.0079	<0.00001	<0.00001	0.003	0.00002	13.2	<0.0001	0.000088	0.0004	<0.002	0.00011	0.00105	4.06	0.0345	<0.000004	0.0002	<0.00002
HC-1	26-May-16	0.0093	<0.00001	<0.00001	0.003	0.000028	14.1	<0.0001	0.000096	0.0006	<0.002	0.00016	0.00075	3.95	0.0409	<0.00001	0.00018	0.00008
HC-1	02-Jun-16	0.0096	<0.00001	<0.00001	0.003	0.00002	11.5	<0.0001	0.000069	0.0004	0.002	0.00012	0.00094	3.23	0.0368	<0.00001	0.00014	0.00029
HC-1	09-Jun-16	0.0106	<0.00001	<0.00001	0.003	0.000021	17	<0.0001	0.000075	0.0005	<0.002	0.0001	0.00119	5.37	0.0388	<0.000004	0.00021	0.00004
HC-1	16-Jun-16	0.0081	<0.00001	<0.00001	0.002	0.000017	11.8	<0.0001	0.000065	0.0005	<0.002	0.00013	0.00097	3.99	0.0298	<0.00001	0.00015	0.00004
HC-1	23-Jun-16	0.0103	<0.00001	<0.00001	0.004	0.000023	13.2	<0.0001	0.000087	0.0008	<0.002	0.00013	0.001	4.16	0.0429	<0.00001	0.00015	0.00006
HC-1	30-Jun-16	0.011	<0.00001	<0.00001	0.004	0.000023	15	<0.0001	0.000072	0.0006	<0.002	0.00013	0.00105	4.57	0.0401	<0.00001	0.00016	<0.00002
HC-1	07-Jul-16	0.0098	<0.00001	<0.00001	0.002	0.000016	16	<0.0001	0.000072	0.0006	<0.002	0.00011	0.00115	5	0.0358	<0.00001	0.00015	<0.00002
HC-1	14-Jul-16	0.0105	<0.00001	<0.00001	0.002	0.000023	13.4	<0.0001	0.000077	0.0007	0.002	0.00009	0.00083	4.13	0.0385	<0.00001	0.00014	0.00005
HC-1	21-Jul-16	0.0101	<0.00001	<0.00001	0.002	0.000018	15.9	<0.0001	0.000061	0.0017	<0.002	0.00006	0.00101	4.97	0.0343	<0.00001	0.00013	0.00008
HC-1	28-Jul-16	0.0124	<0.00001	<0.00001	0.002	0.000015	18.5	<0.0001	0.000104	0.0011	<0.002	0.00017	0.00135	6.41	0.0611	0.00001	0.00013	0.00007
HC-1	04-Aug-16	0.0126	<0.00001	<0.00001	0.003	0.000019	17.2	<0.0001	0.000088	0.001	<0.002	0.00008	0.00107	5.36	0.0478	<0.00001	0.00017	0.00006
HC-1	11-Aug-16	0.0115	<0.00001	<0.00001	0.003	0.000014	15.4	<0.0001	0.000112	0.0011	<0.002	0.00009	0.001	4.96	0.0439	<0.00001	0.00014	0.00013
HC-1	18-Aug-16	0.0119	<0.00001	<0.00001	0.003	0.000019	18.5	<0.0001	0.000088	0.0009	<0.002	0.00014	0.00086	5.73	0.0434	<0.00001	0.00019	0.0001
HC-1	25-Aug-16	0.0155	<0.000010	<0.000010	0.005	0.000023	21.4	<0.00010	0.000085	0.0015	<0.002	0.00007	0.0012	6.45	0.0703	<0.00001	0.00017	<0.00002
HC-1	01-Sep-16																	
HC-1	08-Sep-16	0.0128	<0.00001	<0.00001	0.003	0.000011	18.2	<0.0001	0.000096	0.0004	<0.002	0.00007	0.0009	6.1	0.0493	<0.00001	0.00011	0.00006
HC-1	15-Sep-16																	
HC-1	22-Sep-16	0.0125	0.000012	<0.000010	0.004	0.000019	17.5	<0.00010	0.000065	0.00035	<0.002	0.00008	0.0009	5.42	0.0338	<0.00001	0.00015	0.00005
HC-1	29-Sep-16																	
HC-1	06-Oct-16	0.0145	<0.000010	<0.000010	0.003	0.000014	18.4	<0.00010	0.000066	0.00039	<0.002	0.00008	0.00103	6.39	0.0368	<0.00001	0.00013	0.00004
HC-1	13-Oct-16																	
HC-1	20-Oct-16	0.0144	<0.000010	<0.000010	0.01	0.000088	19.8	<0.00010	0.000256	0.00062	0.002	0.00022	0.00096	6.19	0.0562	0.00001	0.00014	0.00051
HC-1	27-Oct-16																	
HC-1	03-Nov-16	0.0089	<0.000010	<0.000010	0.005	0.000041	13	<0.00010	0.000108	0.00038	<0.002	0.00038	0.00058	3.87	0.0303	<0.00001	0.00008	0.00029
HC-1	10-Nov-16																	
HC-1	17-Nov-16	0.0113	<0.000010	<0.000010	0.004	0.00002	13.2	<0.00010	0.000083	0.00058	<0.002	0.00011	0.00045	4.52	0.0372	<0.00001	0.00005	0.00012
HC-1	24-Nov-16																	
HC-1	01-Dec-16	0.0122	<0.000010	<0.000010	0.005	0.000022	18.3	<0.00010	0.000062	0.0003	<0.002	0.00028	0.001	5.98	0.0236	0.00002	0.00011	0.00018

Blank cells indicate parameter was not analyzed.

Humidity Cell	Sampling Date	Phosphorus (P)	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.01	**0.01**	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
HC-1	03-Mar-16	<0.010	6.57	0.0015	0.554	<0.00001	1.37	0.0332	10.6	<0.00005	0.00002	<0.00001	<0.00005	<0.0002	0.00309	<0.0002	<0.001	0.00005
HC-1	10-Mar-16	<0.010	8.78	0.0054	0.684	<0.00001	1.96	0.0728	29.4	<0.00005	0.000017	<0.00001	0.00006	<0.0002	0.00619	<0.0002	0.002	<0.00002
HC-1	17-Mar-16	<0.010	8.67	0.0046	0.905	<0.00001	1.23	0.0746	32.6	<0.00005	0.000017	<0.00001	<0.00005	<0.0002	0.0104	<0.0002	0.002	0.00002
HC-1	24-Mar-16	<0.010	4.76	0.0039	0.705	<0.00001	0.532	0.052	19.3	<0.00005	0.000013	<0.00001	<0.00005	<0.0002	0.00667	<0.0002	0.002	<0.00002
HC-1	31-Mar-16	<0.010	3.68	0.003	0.67	<0.00001	0.27	0.0451	16.1	<0.00005	0.000018	<0.00001	<0.00005	<0.0002	0.00621	<0.0002	0.002	<0.00002
HC-1	07-Apr-16	<0.010	2.68	0.0024	0.645	<0.00001	0.172	0.0418	14.2	<0.00005	0.00001	<0.00001	<0.00005	<0.0002	0.00417	<0.0002	0.002	0.00002
HC-1	14-Apr-16	<0.010	2.84	0.0024	0.702	<0.00001	0.158	0.0449	15.5	<0.00005	0.000011	<0.00001	<0.00005	<0.0002	0.00494	<0.0002	0.002	<0.00002
HC-1	21-Apr-16	<0.010	2.38	0.0024	0.74	<0.00001	0.116	0.0508	14.8	<0.00005	0.00001	<0.00001	<0.00005	<0.0002	0.00486	<0.0002	0.002	<0.00002
HC-1	28-Apr-16	<0.010	1.18	0.0014	0.508	<0.00001	0.053	0.0315	8.61	<0.00005	0.000007	<0.00001	<0.00005	<0.0002	0.00297	<0.0002	0.003	<0.00002
HC-1	05-May-16	<0.010	1.51	0.0027	0.525	<0.00001	0.093	0.0415	14.1	<0.00005	0.000009	<0.00001	0.00062	<0.0002	0.003	<0.0002	0.002	<0.00002
HC-1	12-May-16	<0.010	1.31	0.0022	0.504	<0.00001	0.058	0.0353	12.8	<0.00005	0.000008	<0.00001	0.00014	<0.0002	0.00268	<0.0002	0.002	<0.00002
HC-1	19-May-16	<0.010	1.27	0.0023	0.47	<0.00001	0.073	0.0364	10.3	<0.00005	0.000009	<0.00001	0.00031	<0.0002	0.00345	<0.0002	0.002	<0.00002
HC-1	26-May-16	0.01	1.26	0.0022	0.613	<0.00001	0.063	0.036	12.6	0.00006	0.000009	<0.00001	0.00023	<0.0002	0.00266	<0.0002	0.003	<0.00002
HC-1	02-Jun-16	<0.010	0.927	0.0015	0.428	<0.00001	0.056	0.0367	9.29	<0.00005	0.000008	<0.00001	0.0001	<0.0002	0.00199	<0.0002	0.002	<0.00002
HC-1	09-Jun-16	<0.010	1.32	0.0025	0.537	<0.00001	0.079	0.0433	14	<0.00005	0.00001	<0.00001	0.00006	<0.0002	0.00206	<0.0002	0.002	<0.00002
HC-1	16-Jun-16	<0.010	0.936	0.0015	0.288	<0.00001	0.048	0.0317	8.98	<0.00005	0.000008	<0.00001	<0.00005	<0.0002	0.00168	<0.0002	0.002	<0.00002
HC-1	23-Jun-16	<0.010	0.938	0.0017	0.439	<0.00001	0.068	0.0391	9.27	<0.00005	0.00001	<0.00001	<0.00005	<0.0002	0.00255	<0.0002	0.002	<0.00002
HC-1	30-Jun-16	<0.010	0.979	0.0021	0.505	<0.00001	0.058	0.0429	12.3	<0.00005	0.000012	<0.00001	0.00007	<0.0002	0.00224	<0.0002	0.002	<0.00002
HC-1	07-Jul-16	<0.010	1.01	0.0022	0.438	<0.00001	0.056	0.041	13.7	<0.00005	0.00001	<0.00001	<0.00005	<0.0002	0.00175	<0.0002	0.001	<0.00002
HC-1	14-Jul-16	<0.010	0.81	0.0017	0.374	<0.00001	0.05	0.0388	9.48	<0.00005	0.000009	<0.00001	0.00007	<0.0002	0.00191	<0.0002	0.002	<0.00002
HC-1	21-Jul-16	<0.010	1.11	0.002	0.449	<0.00001	0.075	0.0386	15.1	<0.00005	0.000009	<0.00001	0.00015	<0.0002	0.00129	<0.0002	0.001	<0.00002
HC-1	28-Jul-16	<0.010	1.46	0.0025	0.538	0.00002	0.078	0.0476	18.8	<0.00005	0.000012	<0.00001	0.0001	<0.0002	0.0013	<0.0002	0.002	<0.00002
HC-1	04-Aug-16	<0.010	1.2	0.0027	0.562	<0.00001	0.047	0.0474	13.7	<0.00005	0.000012	<0.00001	<0.00005	<0.0002	0.00279	<0.0002	0.001	<0.00002
HC-1	11-Aug-16	<0.010	1.14	0.0022	0.597	<0.00001	0.121	0.044	12.8	<0.00005	0.000011	<0.00001	0.00006	<0.0002	0.00167	<0.0002	0.002	0.00002
HC-1	18-Aug-16	<0.010	1.24	0.0025	0.548	<0.00001	0.094	0.0441	13.4	<0.00005	0.000014	<0.00001	0.00011	<0.0002	0.00184	<0.0002	0.002	<0.00002
HC-1	25-Aug-16	0.016	1.46	0.00258	0.7	0.00004	0.15	0.0564	21	<0.00005	0.000017	<0.000010	0.00024	<0.0002	0.00129	<0.0002	0.001	<0.00002
HC-1	01-Sep-16																	
HC-1	08-Sep-16	<0.010	1.1	0.0022	0.42	<0.00001	0.07	0.0476	14.9	<0.00005	0.000018	<0.00001	<0.00005	<0.0002	0.00229	<0.0002	0.002	<0.00002
HC-1	15-Sep-16																	
HC-1	22-Sep-16	<0.010	0.999	0.00219	0.43	<0.000010	0.05	0.0456	13.3	<0.00005	0.000013	<0.000010	<0.00005	<0.0002	0.00193	<0.0002	<0.0010	<0.00002
HC-1	29-Sep-16																	
HC-1	06-Oct-16	<0.010	1.14	0.00226	0.47	<0.000010	0.073	0.0512	14.4	<0.00005	0.000012	<0.000010	<0.00005	<0.0002	0.00173	<0.0002	0.001	<0.00002
HC-1	13-Oct-16																	
HC-1	20-Oct-16	<0.010	1.08	0.00272	0.46	0.000188	0.101	0.0525	14.4	<0.00005	0.000024	<0.000010	<0.00005	<0.0002	0.0017	<0.0002	0.0197	<0.00002
HC-1	27-Oct-16																	
HC-1	03-Nov-16	<0.010	0.688	0.00205	0.23	0.000019	0.029	0.0329	12.2	<0.00005	0.000029	<0.000010	<0.00005	<0.0002	0.000745	<0.0002	0.0107	<0.00002
HC-1	10-Nov-16																	
HC-1	17-Nov-16	<0.010	0.518	0.00119	0.25	0.000073	0.041	0.0384	8.7	<0.00005	0.000016	<0.000010	<0.00005	<0.0002	0.00142	<0.0002	0.0044	<0.00002
HC-1	24-Nov-16																	
HC-1	01-Dec-16	0.013	0.92	0.00177	0.39	0.00001	0.05	0.0405	14.1	0.00006	0.000057	<0.000010	<0.00005	<0.0002	0.00096	<0.0002	0.006	<0.00002

Blank cells indicate parameter was not analyzed.

Humidity Cell	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
HC-2	03-Mar-16	0	750	579.8	6.87	227	5	14	59.7	2.6	0.1	<0.10	<0.10	<0.10	0.22			59	0.02	0.00907	0.00038
HC-2	10-Mar-16	1	500	401	6.95	222	4.5	8.5	80.6	4.2	0.12	<0.10	<0.10	<0.10	<0.0050			83	0.015	0.00639	0.00029
HC-2	17-Mar-16	2	500	466	6.82	175	5	8.5	61	0.58	0.15	<0.10	<0.10	<0.10	0.025			67	0.01	0.00415	0.00019
HC-2	24-Mar-16	3	500	465	6.62	159	4	6.8	63.4	<0.50	<0.10	<0.10	<0.10	<0.10	0.045			65	0.009	0.00343	0.00015
HC-2	31-Mar-16	4	500	462	6.63	159	9.5	8.3	56.6		0.051							58	0.009	0.00402	0.00014
HC-2	07-Apr-16	5	500	463	6.75	133	4.5	7	57.4		0.044							57	0.01	0.00318	0.00013
HC-2	14-Apr-16	6	500	471	6.86	142	4.5	8.8	43.5		0.048							52	0.01	0.0031	0.00014
HC-2	21-Apr-16	7	500	469	6.72	96	2.8	7.5	29.3		0.037							34	0.006	0.00269	0.00012
HC-2	28-Apr-16	8	500	473	6.84	103	5	8	32.4		0.034							38	0.009	0.00271	0.00012
HC-2	05-May-16	9	500	471	6.8	99	14	7	30.6		0.033							37	0.008	0.00233	0.00013
HC-2	12-May-16	10	500	470	6.85	95	12.5	8.3	30		0.039							31	0.006	0.00227	0.00011
HC-2	19-May-16	11	500	474	6.83	90	15.5	9	29.7		0.036							30	0.005	0.00223	0.0001
HC-2	26-May-16	12	500	468	6.96	102	9.5	8	32.9		0.035							38	0.007	0.00279	0.00015
HC-2	02-Jun-16	13	500	466	6.72	62	9	7.5	17.9		0.023							23	0.007	0.00226	0.00012
HC-2	09-Jun-16	14	500	471	6.67	84	12	8	24.9		0.024							32	0.006	0.00225	0.0001
HC-2	16-Jun-16	15	500	468	6.78	84	17	9	24		0.023							31	0.006	0.00238	0.0001
HC-2	23-Jun-16	16	500	473	6.84	71	16.5	8.5	17.9									25	0.006	0.00192	0.00009
HC-2	30-Jun-16	17	500	469	6.8	78	19.8	8	22.7		0.017							31	0.006	0.00192	0.00011
HC-2	07-Jul-16	18	500	490	6.92	80	3	9.5	23.3									32	0.005	0.0019	0.00011
HC-2	14-Jul-16	19	500	491	6.83	76	2	8.5	21.4		0.018							31	0.006	0.00135	0.00009
HC-2	21-Jul-16	20	500	493	6.86	93	2.5	9	31.6									35	0.006	0.00151	0.00013
HC-2	28-Jul-16	21	500	489	6.64	90	4.6	8	28.4		0.017							37	0.005	0.00174	0.00052
HC-2	04-Aug-16	22	500	493	6.78	82	6	8.5	22									30	0.005	0.00192	0.00015
HC-2	11-Aug-16	23	500	490	6.83	79	12.5	8	29.2		0.016							31	0.004	0.00157	0.00012
HC-2	18-Aug-16	24	500	492	6.69	88	5	8.5	20									26	0.004	0.00141	0.00011
HC-2	25-Aug-16	25	500	486	6.73	100	4.5	12	30		0.018							41	0.005	0.00189	0.00018
HC-2	01-Sep-16	26	500	488																	
HC-2	08-Sep-16	27	500	491	6.86	86	5	10	24.1		0.02							35	0.004	0.0016	0.00011
HC-2	15-Sep-16	28	500	487																	
HC-2	22-Sep-16	29	500	489	6.74	68	2.5	9.0	16		0.019							27	0.003	0.0012	0.00009
HC-2	29-Sep-16	30	500	484																	
HC-2	06-Oct-16	31	500	488	6.76	76	2.0	8.5	23		0.013							35	0.004	0.00126	0.00009
HC-2	13-Oct-16	32	500	490																	
HC-2	20-Oct-16	33	500	486	6.34	82	4.0	7.5	27.2		0.018							34	0.003	0.00112	0.00008
HC-2	27-Oct-16	34	500	489																	
HC-2	03-Nov-16	35	500	486	6.75	60	5.0	8.0	16.2		0.021							22	0.003	0.00109	0.00008
HC-2	10-Nov-16	36	500	490																	
HC-2	17-Nov-16	37	500	486	6.42	53	5.0	9.0	16.4		0.13							21	0.002	0.00094	0.00005
HC-2	24-Nov-16	38	500	489																	
HC-2	01-Dec-16	39	500	489	6.43	80	6.5	9.0	23.3		0.015							40	0.006	0.00181	0.00014

Blank cells indicate parameter was not analyzed.

Humidity Cell	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**
HC-2	03-Mar-16	0.0107	<0.00001	<0.00001	0.005	0.00146	13.5	<0.0001	0.00263	0.0028	0.033	0.00287	0.00235	6.08	0.555	0.00008	0.00081	0.0114
HC-2	10-Mar-16	0.0067	<0.00001	<0.00001	0.005	0.000196	21.1	<0.0001	0.000166	0.0012	0.005	0.00066	0.00059	7.35	0.0728	0.00001	0.00136	0.00049
HC-2	17-Mar-16	0.0054	<0.00001	<0.00001	0.005	0.000224	15.8	<0.0001	0.000171	0.0007	0.003	0.00038	0.00058	6.8	0.095	<0.000004	0.00076	0.00037
HC-2	24-Mar-16	0.0043	<0.00001	<0.00001	0.003	0.000159	15.7	<0.0001	0.000125	0.0012	0.002	0.00035	0.00047	6.23	0.0662	0.00008	0.00078	0.00035
HC-2	31-Mar-16	0.0042	<0.00001	<0.00001	0.003	0.000173	14.1	<0.0001	0.000115	0.0012	<0.002	0.00026	0.00037	5.46	0.0652	<0.000004	0.00071	0.00022
HC-2	07-Apr-16	0.0039	<0.00001	<0.00001	0.005	0.000153	13.6	<0.0001	0.000109	0.0002	0.003	0.00042	0.00036	5.72	0.0539	<0.000004	0.00074	0.00017
HC-2	14-Apr-16	0.0036	<0.00001	<0.00001	0.004	0.000115	12.6	<0.0001	0.000085	0.0007	<0.002	0.00031	0.00031	4.93	0.0467	<0.000004	0.00072	0.00015
HC-2	21-Apr-16	0.0032	<0.00001	<0.00001	0.004	0.000133	8.03	<0.0001	0.000084	0.0008	<0.002	0.0003	0.00024	3.4	0.0461	<0.000004	0.00056	0.00014
HC-2	28-Apr-16	0.003	<0.00001	<0.00001	0.003	0.000116	8.74	<0.0001	0.000074	0.0008	<0.002	0.00026	0.00029	4.03	0.0425	<0.000004	0.00057	0.00015
HC-2	05-May-16	0.0031	<0.00001	<0.00001	0.002	0.000123	8.58	<0.0001	0.000072	0.0009	<0.002	0.00031	0.00034	3.84	0.038	<0.000004	0.00055	0.00014
HC-2	12-May-16	0.0026	<0.00001	<0.00001	0.003	0.000109	6.64	<0.0001	0.000064	0.0006	<0.002	0.00022	0.00026	3.59	0.0372	<0.000004	0.00052	0.00014
HC-2	19-May-16	0.0025	<0.00001	<0.00001	0.003	0.000099	7.05	<0.0001	0.00006	0.0006	<0.002	0.00022	0.00023	2.94	0.0333	<0.000004	0.00041	0.00005
HC-2	26-May-16	0.0032	<0.00001	<0.00001	0.004	0.000118	8.83	<0.0001	0.000086	0.0008	<0.002	0.00037	0.00023	3.86	0.036	<0.00001	0.00065	0.00016
HC-2	02-Jun-16	0.0026	<0.00001	<0.00001	0.003	0.000091	5.51	<0.0001	0.000065	0.0007	<0.002	0.00026	0.00033	2.21	0.0338	<0.00001	0.00042	0.00024
HC-2	09-Jun-16	0.003	<0.00001	<0.00001	0.003	0.000092	7.22	<0.0001	0.00006	0.0004	<0.002	0.00024	0.00026	3.45	0.03	<0.000004	0.00051	0.00009
HC-2	16-Jun-16	0.0028	<0.00001	<0.00001	0.002	0.00009	6.22	<0.0001	0.000059	0.0013	<0.002	0.00027	0.0003	3.69	0.029	<0.00001	0.00044	0.00011
HC-2	23-Jun-16	0.0025	<0.00001	<0.00001	0.002	0.0001	5.56	<0.0001	0.000069	0.0012	<0.002	0.00024	0.00027	2.82	0.0335	<0.00001	0.00036	0.00013
HC-2	30-Jun-16	0.0028	<0.00001	<0.00001	0.003	0.000107	7.02	<0.0001	0.000065	0.0008	<0.002	0.00023	0.00031	3.37	0.0348	<0.00001	0.00038	0.00009
HC-2	07-Jul-16	0.0027	<0.00001	<0.00001	0.003	0.000122	7.33	<0.0001	0.000059	0.0012	<0.002	0.00018	0.00033	3.4	0.0336	<0.00001	0.00032	0.0001
HC-2	14-Jul-16	0.0034	<0.00001	<0.00001	0.002	0.000119	7.17	<0.0001	0.000067	0.0006	<0.002	0.00027	0.00026	3.15	0.0399	<0.00001	0.00028	0.00012
HC-2	21-Jul-16	0.0036	<0.00001	<0.00001	0.003	0.000097	8.17	<0.0001	0.000063	0.0016	<0.002	0.00021	0.00027	3.6	0.0338	<0.00001	0.00028	0.00011
HC-2	28-Jul-16	0.0035	<0.00001	<0.00001	0.003	0.000089	7.46	<0.0001	0.000078	0.0011	<0.002	0.00027	0.00032	4.36	0.0352	<0.00001	0.00034	0.00013
HC-2	04-Aug-16	0.0031	<0.00001	<0.00001	0.003	0.00009	6.51	0.0002	0.000067	0.002	<0.002	0.00019	0.00029	3.45	0.0327	<0.00001	0.00038	0.00015
HC-2	11-Aug-16	0.0035	<0.00001	<0.00001	0.002	0.000109	6.7	<0.0001	0.00008	0.0011	<0.002	0.00025	0.00029	3.51	0.0354	<0.00001	0.0003	0.00016
HC-2	18-Aug-16	0.0026	<0.00001	<0.00001	0.003	0.0001	5.65	<0.0001	0.000086	0.0006	0.006	0.00023	0.00021	2.9	0.0393	<0.00001	0.00029	0.00016
HC-2	25-Aug-16	0.0045	<0.000010	<0.000010	0.003	0.000101	8.42	<0.00010	0.000067	0.001	<0.002	0.00019	0.0003	4.76	0.0394	<0.00001	0.00039	0.00005
HC-2	01-Sep-16																	
HC-2	08-Sep-16	0.0032	<0.000010	<0.00001	0.003	0.000062	6.98	<0.00010	0.000057	0.0006	<0.002	0.00017	0.0003	4.27	0.0292	<0.00001	0.00036	0.00009
HC-2	15-Sep-16																	
HC-2	22-Sep-16	0.0029	<0.000010	<0.000010	0.002	0.000085	5.95	<0.00010	0.00008	0.00044	<0.002	0.00019	0.00023	3.06	0.0331	<0.00001	0.00025	0.00013
HC-2	29-Sep-16																	
HC-2	06-Oct-16	0.0033	<0.000010	<0.000010	0.001	0.000187	6.99	<0.00010	0.000234	0.00068	<0.002	0.00029	0.00027	4.3	0.0464	<0.00001	0.00032	0.00031
HC-2	13-Oct-16																	
HC-2	20-Oct-16	0.0036	<0.000010	<0.000010	0.003	0.000098	7.12	<0.00010	0.000077	0.00045	0.003	0.00019	0.00024	3.89	0.0286	0.00001	0.0003	0.00015
HC-2	27-Oct-16																	
HC-2	03-Nov-16	0.0026	<0.000010	<0.000010	0.002	0.000056	4.46	<0.00010	0.000049	0.00053	<0.002	0.00028	0.00022	2.56	0.0186	<0.00001	0.00031	0.00012
HC-2	10-Nov-16																	
HC-2	17-Nov-16	0.0026	<0.000010	<0.000010	0.002	0.000071	4.39	<0.00010	0.000055	0.00019	<0.002	0.00015	0.00015	2.42	0.022	<0.00001	0.00019	0.00013
HC-2	24-Nov-16																	
HC-2	01-Dec-16	0.0041	<0.000010	<0.000010	0.002	0.000064	8.14	<0.00010	0.000044	0.0005	0.002	0.00022	0.0004	4.68	0.0163	0.00001	0.00042	0.00014

Blank cells indicate parameter was not analyzed.

Humidity Cell	Sampling Date	Phosphorus (P)	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.01	**0.01**	**0.0001**	**0.05**	**0.00001**	**0.01**	**0.0001**	**0.5**	**0.00005**	**0.000004**	**0.00001**	**0.00005**	**0.0002**	**0.000001**	**0.0002**	**0.001**	**0.00002**
HC-2	03-Mar-16	<0.010	6.64	0.0043	0.872	0.00001	4.05	0.0299	19.4	<0.00005	0.000605	0.00016	<0.00005	0.0003	0.00134	<0.0002	0.893	0.00306
HC-2	10-Mar-16	<0.010	4.35	0.0056	0.621	0.00001	2.55	0.0302	26	<0.00005	0.000225	0.00003	0.00009	<0.0002	0.00086	<0.0002	0.031	0.00047
HC-2	17-Mar-16	<0.010	2.89	0.0031	0.653	<0.00001	1.2	0.0232	21.5	<0.00005	0.000162	0.00001	<0.00005	<0.0002	0.000521	<0.0002	0.039	0.00018
HC-2	24-Mar-16	<0.010	1.87	0.0027	0.493	<0.00001	0.669	0.0192	15.4	<0.00005	0.000128	<0.00001	<0.00005	<0.0002	0.000493	<0.0002	0.028	0.00013
HC-2	31-Mar-16	<0.010	1.52	0.0019	0.516	<0.00001	0.39	0.0188	16.1	<0.00005	0.000115	<0.00001	<0.00005	<0.0002	0.000583	<0.0002	0.025	0.00005
HC-2	07-Apr-16	<0.010	1.38	0.0019	0.483	<0.00001	0.316	0.0178	16.4	<0.00005	0.000099	<0.00001	<0.00005	<0.0002	0.000476	<0.0002	0.026	0.00011
HC-2	14-Apr-16	<0.010	1.17	0.0015	0.468	<0.00001	0.246	0.0166	13.7	<0.00005	0.00009	<0.00001	<0.00005	<0.0002	0.000621	<0.0002	0.019	0.00008
HC-2	21-Apr-16	<0.010	0.751	0.0012	0.338	<0.00001	0.148	0.013	9.8	<0.00005	0.000078	<0.00001	<0.00005	<0.0002	0.000521	<0.0002	0.116	0.00007
HC-2	28-Apr-16	<0.010	0.778	0.0014	0.391	<0.00001	0.175	0.0132	11	<0.00005	0.000068	<0.00001	<0.00005	<0.0002	0.000761	<0.0002	0.021	0.00009
HC-2	05-May-16	<0.010	0.656	0.0015	0.327	<0.00001	0.18	0.0131	9.78	<0.00005	0.000067	<0.00001	0.00069	<0.0002	0.000533	<0.0002	0.023	0.0001
HC-2	12-May-16	<0.010	0.615	0.0012	0.356	<0.00001	0.165	0.0114	9.27	<0.00005	0.000063	<0.00001	0.00019	<0.0002	0.000554	<0.0002	0.02	0.00004
HC-2	19-May-16	<0.010	0.46	0.0011	0.261	<0.00001	0.144	0.0105	7.27	<0.00005	0.000056	<0.00001	0.00019	<0.0002	0.000707	<0.0002	0.019	0.00004
HC-2	26-May-16	0.013	0.741	0.0016	0.472	<0.00001	0.193	0.0139	13.1	0.00008	0.000059	<0.00001	0.00018	<0.0002	0.000795	<0.0002	0.033	0.00005
HC-2	02-Jun-16	<0.010	0.412	0.0008	0.305	<0.00001	0.105	0.0105	6.17	<0.00005	0.000047	<0.00001	0.00015	<0.0002	0.000425	<0.0002	0.028	0.00003
HC-2	09-Jun-16	<0.010	0.464	0.0013	0.279	<0.00001	0.172	0.0116	7.91	<0.00005	0.000051	<0.00001	<0.00005	<0.0002	0.00061	<0.0002	0.022	0.00006
HC-2	16-Jun-16	<0.010	0.472	0.0011	0.218	<0.00001	0.168	0.0105	7.45	<0.00005	0.000048	<0.00001	<0.00005	<0.0002	0.000562	<0.0002	0.022	0.0001
HC-2	23-Jun-16	<0.010	0.353	0.001	0.252	<0.00001	0.145	0.0097	5.64	<0.00005	0.000049	<0.00001	<0.00005	<0.0002	0.000486	<0.0002	0.024	0.00006
HC-2	30-Jun-16	<0.010	0.379	0.0012	0.314	<0.00001	0.161	0.0115	7.95	<0.00005	0.000054	<0.00001	0.00007	<0.0002	0.000488	<0.0002	0.025	0.00006
HC-2	07-Jul-16	<0.010	0.385	0.0012	0.304	<0.00001	0.172	0.0121	7.79	<0.00005	0.000048	<0.00001	<0.00005	<0.0002	0.000712	<0.0002	0.021	0.00004
HC-2	14-Jul-16	<0.010	0.344	0.0011	0.267	<0.00001	0.161	0.0135	7.08	<0.00005	0.000053	<0.00001	0.00006	<0.0002	0.000516	<0.0002	0.026	0.00012
HC-2	21-Jul-16	<0.010	0.437	0.0014	0.274	<0.00001	0.188	0.0135	10.3	<0.00005	0.000054	<0.00001	0.00113	<0.0002	0.000446	<0.0002	0.023	0.00008
HC-2	28-Jul-16	<0.010	0.552	0.0015	0.462	<0.00001	0.198	0.0125	11.6	<0.00005	0.000073	<0.00001	0.00011	<0.0002	0.000333	<0.0002	0.022	0.00004
HC-2	04-Aug-16	<0.010	0.41	0.0014	0.315	<0.00001	0.142	0.0122	7.09	<0.00005	0.000054	<0.00001	0.00011	<0.0002	0.000658	<0.0002	0.022	0.00002
HC-2	11-Aug-16	<0.010	0.392	0.0016	0.302	<0.00001	0.187	0.013	8.31	<0.00005	0.000047	<0.00001	0.00008	<0.0002	0.000433	<0.0002	0.031	0.00004
HC-2	18-Aug-16	<0.010	0.325	0.0011	0.238	<0.00001	0.155	0.01	5.39	<0.00005	0.000045	<0.00001	0.00018	<0.0002	0.000436	<0.0002	0.032	0.00005
HC-2	25-Aug-16	<0.010	0.49	0.00184	0.37	0.00002	0.25	0.0161	10.9	<0.00005	0.00006	<0.000010	0.00018	<0.0002	0.0007	<0.0002	0.026	<0.00002
HC-2	01-Sep-16																	
HC-2	08-Sep-16	<0.010	0.43	0.00138	0.25	<0.00001	0.19	0.0131	9.2	<0.00005	0.000039	<0.00001	0.00005	<0.0002	0.00074	<0.0002	0.023	<0.00002
HC-2	15-Sep-16																	
HC-2	22-Sep-16	<0.010	0.279	0.00099	0.21	0.000011	0.12	0.012	6.4	<0.00005	0.000033	<0.000010	<0.00005	<0.0002	0.000603	<0.0002	0.0297	0.00004
HC-2	29-Sep-16																	
HC-2	06-Oct-16	<0.010	0.376	0.00283	0.26	<0.000010	0.26	0.0143	9.3	<0.00005	0.000062	<0.000010	<0.00005	<0.0002	0.000606	<0.0002	0.0473	<0.00002
HC-2	13-Oct-16																	
HC-2	20-Oct-16	<0.010	0.282	0.00131	0.23	0.000116	0.134	0.0147	8.8	<0.00005	0.000034	<0.000010	<0.00005	<0.0002	0.00046	<0.0002	0.0311	<0.00002
HC-2	27-Oct-16																	
HC-2	03-Nov-16	<0.010	0.306	0.00084	0.19	0.000026	0.091	0.00925	5.5	<0.00005	0.000032	<0.000010	0.00008	<0.0002	0.000374	<0.0002	0.018	<0.00002
HC-2	10-Nov-16																	
HC-2	17-Nov-16	<0.010	0.183	0.00074	0.17	0.000051	0.073	0.0106	4.5	<0.00005	0.000021	<0.000010	<0.00005	<0.0002	0.000446	<0.0002	0.0278	<0.00002
HC-2	24-Nov-16																	
HC-2	01-Dec-16	0.015	0.4	0.00124	0.3	<0.000010	0.13	0.0161	9.5	0.0001	0.000042	<0.000010	0.00008	<0.0002	0.00071	<0.0002	0.019	0.00012

Blank cells indicate parameter was not analyzed.

Humidity Cell	Sampling Date	Cycle No. (Week)	Input Vol. (DI Water)	Output Vol. (Leachate)	pH	EC	Acidity	Total Alkalinity	Sulphate	Chloride	Fluoride	Nitrate	Nitrite	Nitrate + Nitrite	Total Ammonia	Total CN (SAD CN)	WAD CN	Hardness ($CaCO_3$)	Aluminum (Al)	Antimony (Sb)	Arsenic (As)
		Unit:	mL	mL	pH Units	µS/cm	mg $CaCO_3$/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			mg/L	mg/L	mg/L	mg/L
		RDL:	5	5	0.01	1	0.5	0.5	0.50	0.50	0.10	0.10	0.10	0.10	0.0050			0.1	0.001	0.00005	0.00005
HC-3	21-Jul-16	0	1000	602.4	7.26	1467	45	55	867	19	0.27	<0.10	<0.10	<0.10	0.57	0.00058	0.00061	753	<0.001	0.0028	0.00134
HC-3	28-Jul-16	1	500	494.8	7.09	1432	10	33.5	738	60	<0.10	<0.10	<0.10	<0.10	0.16	0.00	<0.00050	794	0.001	0.00316	0.00338
HC-3	04-Aug-16	2	500	496	7.15	1487	6	30	594	4.4	0.24	<0.10	<0.10	<0.10	0.023	0.00205	0.0011	651	0.002	0.00297	0.00174
HC-3	11-Aug-16	3	500	485	7.37	1250	5	34	611	3.2	0.29	<0.10	<0.10	<0.10	0.087	0.0024	0.00134	623	0.001	0.00276	0.00155
HC-3	18-Aug-16	4	500	490	7.25	1351	5.5	33.5	640	2.8	0.33	<0.10	<0.10	<0.10	0.026	0.00245	0.00154	681	0.001	0.00269	0.00153
HC-3	25-Aug-16	5	500	493	7.2	2080	11	51	1100		0.3					<0.00050	<0.00050	1410	0.001	0.00332	0.0015
HC-3	01-Sep-16	6	500	484	7.29	1852	7.5	43	1000		0.34					<0.00050	<0.00050	1140	0.001	0.00252	0.00125
HC-3	08-Sep-16	7	500	492	7.25	1645	13.5	49.5	912		0.24					<0.00050	<0.00050	1050	0.005	0.00281	0.00156
HC-3	15-Sep-16	8	500	486	7.27	1521	10.5	47.5	844		0.24							884	<0.001	0.00253	0.00165
HC-3	22-Sep-16	9	500	491	7.29	1178	3.5	28.3	570		0.18							671	<0.001	0.0022	0.00075
HC-3	29-Sep-16	10	500	490	7.53	1327	5	43.5	680		0.2							766	0.001	0.00264	0.00145
HC-3	6-Oct-16	11	500	489	7.46	1780	5	39	1000		0.27							1260	<0.001	0.00302	0.00111
HC-3	13-Oct-16	12	500	486	7.37	1219	7.8	36	600		0.18							645	0.001	0.00255	0.00093
HC-3	20-Oct-16	13	500	491	7.48	1414	5	49	824		0.2							923	<0.001	0.00261	0.00125
HC-3	27-Oct-16	14	500	493	7.39	1286	7.5	28.5	663		0.19							726	<0.001	0.00263	0.00073
HC-3	3-Nov-16	15	500	489	7.52	2070	9	53	1230		0.29							1290	0.002	0.00311	0.00065
HC-3	10-Nov-16	16	500	492	7.46	1971	11	55	1200									1460	<0.001	0.00313	0.00071
HC-3	17-Nov-16	17	500	487	7.37	2005	14	53	1205		0.195							1390	<0.001	0.00339	0.00079
HC-3	24-Nov-16	18	500	487	7.59	1934	13	70	1140									1350	0.003	0.00342	0.00086
HC-3	1-Dec-16	19	500	490	7.47	1905	17	56	1150		0.19							1620	0.001	0.00318	0.00089

Blank cells indicate parameter was not analyzed.

Humidity Cell	Sampling Date	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Iron (Fe)	Lead (Pb)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.0001	**0.00001**	**0.00001**	**0.001**	**0.000002**	**0.04**	**0.0001**	**0.000005**	**0.0001**	**0.002**	**0.00005**	**0.00005**	**0.005**	**0.00005**	**0.000004**	**0.00001**	**0.00002**
HC-3	21-Jul-16	0.0163	<0.00001	<0.00001	0.009	0.0995	154	<0.0001	0.134	0.0165	<0.002	0.127	0.0143	89.8	4.64	<0.00001	0.00077	0.283
HC-3	28-Jul-16	0.0161	<0.00001	<0.00001	0.011	0.0447	211	<0.0001	0.0407	0.0046	<0.002	0.0991	0.015	64.7	2.23	0.00001	0.00066	0.0728
HC-3	04-Aug-16	0.0154	<0.00001	<0.00001	0.009	0.0297	189	<0.0001	0.02	0.0039	0.002	0.0238	0.00917	43.4	1.57	<0.00001	0.00068	0.0344
HC-3	11-Aug-16	0.0159	<0.00001	<0.00001	0.006	0.0246	170	<0.0001	0.0193	0.0028	<0.002	0.0158	0.00857	48.4	1.58	<0.00001	0.00053	0.0307
HC-3	18-Aug-16	0.0125	<0.00001	<0.00001	0.006	0.0168	181	<0.0001	0.0144	0.0025	<0.002	0.0108	0.00576	55.5	1.05	<0.00001	0.00056	0.0226
HC-3	25-Aug-16	0.0153	<0.000010	<0.000010	0.008	0.043	344	<0.00010	0.0381	0.0051	0.002	0.0197	0.0109	134	4.03	0.00008	0.00047	0.0433
HC-3	01-Sep-16	0.0122	<0.000010	<0.000010	0.005	0.025	217	<0.00010	0.0264	0.0017	<0.002	0.00812	0.00745	146	2.63	<0.00001	0.00037	0.036
HC-3	08-Sep-16	0.0123	<0.00001	<0.00001	0.008	0.0273	243	<0.0001	0.0287	0.0022	0.003	0.0144	0.00769	108	2.49	<0.00001	0.00026	0.0461
HC-3	15-Sep-16	0.014	<0.00001	<0.00001	0.007	0.0193	212	<0.0001	0.0185	0.00113	<0.002	0.00771	0.00577	86.2	1.62	<0.00001	0.00028	0.0269
HC-3	22-Sep-16	0.0142	<0.000010	<0.000010	0.005	0.00987	180	<0.00010	0.00902	0.00069	<0.002	0.00267	0.00398	53.9	0.648	<0.00001	0.0003	0.0135
HC-3	29-Sep-16	0.0155	<0.000010	<0.000010	0.007	0.0158	176	<0.00010	0.015	0.00635	<0.002	0.005	0.00543	79.1	1.25	<0.00001	0.00032	0.0227
HC-3	6-Oct-16	0.0128	<0.000010	<0.000010	0.005	0.02	328	<0.00010	0.0209	0.00435	<0.002	0.00487	0.00532	108	2.38	0.00002	0.00059	0.038
HC-3	13-Oct-16	0.0161	<0.000010	<0.000010	0.015	0.0118	177	<0.00010	0.0103	0.00076	0.005	0.00327	0.00439	49.5	1.03	<0.00001	0.00034	0.0183
HC-3	20-Oct-16	0.0135	<0.000010	<0.000010	0.008	0.015	265	<0.00010	0.0133	0.00205	<0.002	0.00367	0.00504	63.8	1.12	<0.00001	0.00044	0.0206
HC-3	27-Oct-16	0.0137	<0.000010	<0.000010	0.008	0.0116	220	<0.00010	0.00837	0.0011	<0.002	0.00267	0.00339	43	0.767	<0.00001	0.00055	0.0151
HC-3	3-Nov-16	0.0107	<0.000010	<0.000010	0.006	0.0163	404	<0.00010	0.0149	0.00164	0.002	0.00293	0.0055	68.3	1.81	0.00001	0.00055	0.0333
HC-3	10-Nov-16	0.0117	<0.000010	<0.000010	0.009	0.0181	438	<0.00010	0.0197	0.00173	<0.002	0.00276	0.00507	89	2.37	0.00002	0.00061	0.043
HC-3	17-Nov-16	0.0132	<0.000010	<0.000010	0.008	0.0189	452	<0.00010	0.0165	0.00239	0.003	0.00334	0.00281	74.9	1.83	<0.00001	0.00026	0.0348
HC-3	24-Nov-16	0.0141	<0.000010	<0.000010	0.008	0.0186	447	<0.00010	0.0161	0.00245	<0.002	0.00366	0.00424	56.2	1.97	<0.00001	0.00054	0.0375
HC-3	1-Dec-16	0.0117	0.000011	<0.000010	0.006	0.0268	432	<0.00010	0.0356	0.0042	<0.002	0.00382	0.006	72.2	1.09	0.00013	0.0005	0.0717

Blank cells indicate parameter was not analyzed.

Humidity Cell	Sampling Date	Phosphorus (P)	Potassium (K)	Selenium (Se)	Silicon (Si)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tellurium (Te)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		0.01	0.01	0.0001	0.05	0.00001	0.01	0.0001	0.5	0.00005	0.000004	0.00001	0.00005	0.0002	0.000001	0.0002	0.001	0.00002
HC-3	21-Jul-16	0.262	11.5	0.367	0.619	0.00002	9.11	0.281	286	<0.00005	0.0572	<0.00001	<0.00005	<0.0002	0.000178	<0.0002	21.3	<0.00002
HC-3	28-Jul-16	0.195	11.1	0.365	0.446	0.00085	6.83	0.31	295	<0.00005	0.0402	<0.00001	0.00009	0.0002	0.000201	<0.0002	3.73	<0.00002
HC-3	04-Aug-16	0.067	7.98	0.24	0.453	<0.00001	3.27	0.289	221	<0.00005	0.0324	<0.00001	0.00008	<0.0002	0.000136	<0.0002	1.73	<0.00002
HC-3	11-Aug-16	0.036	7.07	0.228	0.386	<0.00001	2.58	0.337	201	<0.00005	0.0278	<0.00001	0.00006	<0.0002	0.000155	<0.0002	1.28	<0.00002
HC-3	18-Aug-16	0.028	6.07	0.264	0.265	<0.00001	2.18	0.309	197	<0.00005	0.0263	<0.00001	0.00012	<0.0002	0.000208	<0.0002	0.789	<0.00002
HC-3	25-Aug-16	0.07	7.57	0.515	0.44	0.00078	2.03	0.804	575	<0.00005	0.0396	<0.000010	<0.00005	<0.0002	0.00044	<0.0002	1.85	<0.00002
HC-3	01-Sep-16	0.05	7.91	0.527	0.26	<0.000010	1.91	0.75	369	<0.00005	0.0293	<0.000010	<0.00005	<0.0002	0.00032	<0.0002	1.16	<0.00002
HC-3	08-Sep-16	0.02	5.71	0.307	0.42	<0.00001	1.13	0.61	358	<0.00005	0.0257	<0.00001	<0.00005	<0.0002	0.0003	<0.0002	1.73	<0.00002
HC-3	15-Sep-16	0.019	4.35	0.301	0.33	<0.00001	0.733	0.533	289	<0.00005	0.0216	<0.00001	<0.00005	<0.0002	0.000356	<0.0002	0.906	<0.00002
HC-3	22-Sep-16	<0.010	2.85	0.179	0.22	<0.000010	0.36	0.349	219	<0.00005	0.0142	<0.000010	<0.00005	<0.0002	0.000193	<0.0002	0.42	<0.00002
HC-3	29-Sep-16	<0.010	4.15	0.231	0.36	<0.000010	0.54	0.48	262	<0.00005	0.0164	<0.000010	0.00007	<0.0002	0.000335	<0.0002	0.877	<0.00002
HC-3	6-Oct-16	<0.010	5.05	0.336	0.42	0.000445	0.586	0.625	413	<0.00005	0.022	<0.000010	0.00006	<0.0002	0.000611	<0.0002	0.893	<0.00002
HC-3	13-Oct-16	<0.010	2.84	0.154	0.27	0.000081	0.258	0.331	197	<0.00005	0.015	<0.000010	<0.00005	<0.0002	0.000301	<0.0002	0.569	<0.00002
HC-3	20-Oct-16	<0.010	3.52	0.201	0.36	0.00006	0.265	0.443	295	<0.00005	0.0158	<0.000010	0.00008	<0.0002	0.000539	<0.0002	0.76	<0.00002
HC-3	27-Oct-16	<0.010	2.6	0.157	0.24	0.000285	0.18	0.362	222	<0.00005	0.0144	<0.000010	<0.00005	<0.0002	0.000431	<0.0002	0.507	<0.00002
HC-3	3-Nov-16	<0.010	4.1	0.27	0.46	0.000181	0.232	0.55	412	<0.00005	0.0187	<0.000010	0.00085	<0.0002	0.00134	<0.0002	0.886	<0.00002
HC-3	10-Nov-16	<0.010	5.46	0.277	0.59	0.00059	0.25	0.623	519	<0.00005	0.0177	<0.000010	0.00043	<0.0002	0.00131	<0.0002	1.11	<0.00002
HC-3	17-Nov-16	<0.010	2.53	0.218	0.57	0.000028	0.227	0.583	440	<0.00005	0.0173	<0.000010	0.00038	<0.0002	0.001522	<0.0002	1.46	<0.00002
HC-3	24-Nov-16	<0.010	4.25	0.213	0.59	0.000012	0.204	0.509	431	<0.00005	0.0168	<0.000010	0.0002	<0.0002	0.00153	<0.0002	1.23	<0.00002
HC-3	1-Dec-16	0.028	4.83	0.247	0.7	0.00282	0.185	0.584	541	0.00014	0.0253	<0.000010	0.00017	<0.0002	0.00147	<0.0002	1.59	<0.00002

Blank cells indicate parameter was not analyzed.

APPENDIX J.
Field Barrel Data

Description	Sample Date	Sampled By	Sample Comments	Leach Volume in Field Bin	pH (field)	pH (lab)	Specific Conductance (field)	Specific Conductance (lab)
				L	pH units	pH units	µS/cm	µS/cm
FB-1 AK RHYc	31-May-16	J.Inkster	Light brown, sediments on bottom and suspended solids		7.87	7.85	170.1	173
FB-1 AK RHYc	26-Jul-16	J.Inkster	clear, almost full	18.5	7.89	7.84	162	154
FB-1 AK RHYc	24-Aug-16	A.Badger/J.Inkster	Some suspended solids, sediment on bottom	12.5	7.9	7.74	124.7	121
FB-1 AK RHYc	31-Aug-16	J.Inskster	Clear with some sediment on bottom	13.5	7.36	7.64	78.4	75.4
FB-1 AK RHYc	5-Oct-16	A.MacPhail	Grey sediment on bottom, water is clear; bins thawed indoors via heater resulting in elevated temps	13.9	7.51	7.61	142.8	153
FB-9 AK RHYv	31-May-16	J.Inkster	Tan, sediments and suspended solids	4		7.7		178
FB-9 AK RHYv	26-Jul-16	J.Inkster	sediment on bottom, cloudy/grey	19.5	7.82	7.7	188.2	181
FB-9 AK RHYv	24-Aug-16	A.Badger/J.Inkster	Mostly clear, some sediment on bottom. Insitu not recorded.	11.5		7.69		132
FB-9 AK RHYv	31-Aug-16	J.Inskster	Clear with some sediment on bottom	13.5	7.33	7.56	89.1	86.3
FB-9 AK RHYv	5-Oct-16	A.MacPhail	Some brown sediment on bottom, water is clear; bins thawed indoors via heater resulting in elevated te	13.7	7.13	7.51	201	220
FB-11 AK RHYv	31-May-16	J.Inkster	light brown, sediments on bottom and suspended solids	3	7.68	7.58	271.9	278
FB-11 AK RHYv	26-Jul-16	J.Inkster	almost full, clear water, sediment on bottom	15	7.68	7.74	271.9	327
FB-11 AK RHYv	24-Aug-16	A.Badger/J.Inkster	Some brown sediment, yellowish water	10.5	7.7	7.68	273.7	273
FB-11 AK RHYv	31-Aug-16	J.Inskster	Clear with sediment on bottom	13.5	7.36	7.64	164.6	160
FB-11 AK RHYv	5-Oct-16	A.MacPhail	Brown sediment on bottom; bins thawed indoors via heater resulting in elevated temps	12.2	7.52	7.43	341	387
FB-4 CA CL MAF	21-Apr-16	A.MacPhail	Bucket thawed out overnight, small black and grey particulates on bottom	3	7.95	7.78	140.8	172
FB-4 CA CL MAF	31-May-16	J.Inkster	light grey, sediments on bottom & suspended materials present	4.5	7.94	7.98	232.4	229
FB-4 CA CL MAF	26-Jul-16	J.Inkster	Sediment on bottom, light grey water, bucket is full	19.5	8.02	7.93	197	190
FB-4 CA CL MAF	24-Aug-16	A.Badger/J.Inkster	Clear, some sediment on bottom	11.5	7.88	7.93	150.9	147
FB-4 CA CL MAF	31-Aug-16	J.Inskster	Clear with some sediment on bottom	13.5	7.29	7.82	100.5	98.7
FB-4 CA CL MAF	5-Oct-16	A.MacPhail	Water is clear, some grey sediment on bottom; bins thawed indoors via heater resulting in elevated tem	13.6	7.46	7.78	152.2	169
FB-3 CARB MDS/RHY	31-May-16	J.Inkster	clear with sediments on bottom	3.5	7.63	7.77	412.1	423
FB-3 CARB MDS/RHY	26-Jul-16	J.Inkster	Clear water, almost full, greyish sediment	16.75	7.63	7.42	430.6	415
FB-3 CARB MDS/RHY	24-Aug-16	A.Badger/J.Inkster	Some brown sediment, greenish water. Leach volume not recorded.		7.7	7.38	284.5	277
FB-3 CARB MDS/RHY	31-Aug-16	J.Inskster	clear with sediment on bottom	13.5	7.25	7.41	152.4	149
FB-3 CARB MDS/RHY	5-Oct-16	A.MacPhail	Grey sediment on bottom, water is clear; bins thawed indoors via heater resulting in elevated temps	12.9	7.6	7.41	313.9	367
FB-6 PY AK RHYc	31-May-16	J.Inkster	Tan, sediments on bottom and suspended solids	4	7.9	7.65	217	224
FB-6 PY AK RHYc	26-Jul-16	J.Inkster	minor turbidity, almost full, greenish grey sediment	19	7.8	7.45	245.9	235
FB-6 PY AK RHYc	24-Aug-16	A.Badger/J.Inkster	Grey sediment, greenish water	11.5	7.87	7.34	177.8	175
FB-6 PY AK RHYc	31-Aug-16	J.Inskster	Clear with sediment on bottom	13.5	7.30	7.33	108.70	105
FB-6 PY AK RHYc	5-Oct-16	A.MacPhail	Grey sediment on bottom, water is clear; bins thawed indoors via heater resulting in elevated temps	13.3	7.56	7.08	229.4	258
FB-8 PY AK RHYc	21-Apr-16	A.MacPhail	Bucket thawed out overnight, small black particulates, water is clear.	0.95	8.3	7.74	192.5	162
FB-8 PY AK RHYc	31-May-16	J.Inkster	Tan, sediments on bottom and suspended	4.5	7.79	7.7	255.7	258
FB-8 PY AK RHYc	26-Jul-16	J.Inkster	light grey, cloudy, sediment on bottom	19.5	7.87	7.49	220.9	211
FB-8 PY AK RHYc	24-Aug-16	A.Badger/J.Inkster	Slightly cloudy, some sediment on bottom	10.5	7.9	7.46	160.8	158
FB-8 PY AK RHYc	31-Aug-16	J.Inskster	Clear with sediment on bottom	13.5	7.34	7.33	97.8	94.3
FB-8 PY AK RHYc	5-Oct-16	A.MacPhail	Water is clear, brown sediment on bottom; bins thawed indoors via heater resulting in elevated temps	13.2	7.66	7.32	207.3	230

Description	Sample Date	Temperature (field)	ORP (field)	Hardness (from dissolved)	Total Acidity	Acidity (pH 4.5)	Alkalinity total	Alkalinity bicarbonate HCO_3	Alkalinity hydroxide OH	Alkalinity carbonate CO_3	Alkalinity PP carbonate CO_3	Chloride	Fluoride	Sulphate dissolved	Calculated SO_4^- D BC-MOE	Nitrite (N)
		C	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
FB-1 AK RHYc	31-May-16	7.1	111.4	71.1	<0.50	<0.50	54	65.9	<0.50	<0.50	<0.50	3.2	0.07	26.3	218	0.0043
FB-1 AK RHYc	26-Jul-16	11.3	94.2	65.2	<0.50	<0.50	41.7	50.8	<0.50	<0.50	<0.50	2.4	0.053	29.5	218	0.0056
FB-1 AK RHYc	24-Aug-16	15.1	148.9	49.5	<0.50	<0.50	32.8	40	<0.50	<0.50	<0.50	0.62	0.043	22.7	218	<0.0020
FB-1 AK RHYc	31-Aug-16	4.3	147.8	30.5	<0.50	<0.50	23.9	29.2	<0.50	<0.50	<0.50	0.93	0.025	10	128	<0.0020
FB-1 AK RHYc	5-Oct-16	33	85.3	62.3	<0.50	<0.50	37	45.1	<0.50	<0.50	<0.50	2	0.031	30.4	218	0.0024
FB-9 AK RHYv	31-May-16			63.1	<0.50	<0.50	48.7	59.5	<0.50	<0.50	<0.50	6.9	0.063	19.7	218	0.006
FB-9 AK RHYv	26-Jul-16	11.2	93.6	78.5	<0.50	<0.50	39.8	48.6	<0.50	<0.50	<0.50	6.7	0.045	34.7	309	0.005
FB-9 AK RHYv	24-Aug-16			53.2	<0.50	<0.50	29.4	35.9	<0.50	<0.50	<0.50	4.1	0.04	23.4	218	0.003
FB-9 AK RHYv	31-Aug-16	4.2	150.5	35.3	<0.50	<0.50	23	28.1	<0.50	<0.50	<0.50	2.5	0.025	12.8	218	<0.0020
FB-9 AK RHYv	5-Oct-16	34.3	58.2	94.6	<0.50	<0.50	35.9	43.8	<0.50	<0.50	<0.50	11	0.036	51.1	309	0.0038
FB-11 AK RHYv	31-May-16	10.9	110.6	113	4.53	<0.50	64.5	78.7	<0.50	<0.50	<0.50	8.1	0.069	55	309	<0.0020
FB-11 AK RHYv	26-Jul-16	11.6	110.6	149	<0.50	<0.50	46.7	56.9	<0.50	<0.50	<0.50	13	0.053	90.3	309	0.0054
FB-11 AK RHYv	24-Aug-16	15.5	158	122	<0.50	<0.50	33.7	41.1	<0.50	<0.50	<0.50	8	0.048	77.5	309	<0.0020
FB-11 AK RHYv	31-Aug-16	5.1	114.3	63.2	<0.50	<0.50	26	31.7	<0.50	<0.50	<0.50	3.7	0.029	37.5	218	0.0029
FB-11 AK RHYv	5-Oct-16	10.8	95.8	171	0.54	<0.50	36.2	44.2	<0.50	<0.50	<0.50	12	0.039	127	309	0.0057
FB-4 CA CL MAF	21-Apr-16	12.5	121.3	63.2	<0.50	<0.50	48.7	59.4	<0.50	<0.50	<0.50	4.1	0.12	15.3	218	0.0085
FB-4 CA CL MAF	31-May-16	6.5	71.2	91.7	<0.50	<0.50	78.2	95.4	<0.50	<0.50	<0.50	7.9	0.21	20.4	309	0.0116
FB-4 CA CL MAF	26-Jul-16	10.1	85.6	77.2	<0.50	<0.50	63.6	77.6	<0.50	<0.50	<0.50	3.9	0.13	25.4	309	0.0079
FB-4 CA CL MAF	24-Aug-16	15	122.8	60	<0.50	<0.50	53	64.6	<0.50	<0.50	<0.50	1.9	0.088	15.8	218	0.0042
FB-4 CA CL MAF	31-Aug-16	4.4	154.2	40.8	<0.50	<0.50	39.8	48.6	<0.50	<0.50	<0.50	1.3	0.049	7.35	218	0.0024
FB-4 CA CL MAF	5-Oct-16	9.9	128.5	67.9	<0.50	<0.50	54.9	67	<0.50	<0.50	<0.50	2.6	0.086	22.2	218	0.0039
FB-3 CARB MDS/RHY	31-May-16	9.7	122.8	168	0.71	<0.50	54	65.9	<0.50	<0.50	<0.50	12	0.13	128	309	0.0086
FB-3 CARB MDS/RHY	26-Jul-16	10.9	122.8	177	<0.50	<0.50	24.1	29.4	<0.50	<0.50	<0.50	7.9	0.098	149	309	0.0082
FB-3 CARB MDS/RHY	24-Aug-16	15.9	162.2	119	0.53	<0.50	21.2	25.9	<0.50	<0.50	<0.50	3.4	0.07	100	309	0.041
FB-3 CARB MDS/RHY	31-Aug-16	4.5	150.2	56.5	<0.50	<0.50	15.2	18.6	<0.50	<0.50	<0.50	1.6	0.038	42	218	0.0295
FB-3 CARB MDS/RHY	5-Oct-16	30	88.5	163	<0.50	<0.50	28.4	34.7	<0.50	<0.50	<0.50	4	0.063	138	309	0.0223
FB-6 PY AK RHYc	31-May-16	9.1	121.4	84.2	<0.50	<0.50	31.8	38.8	<0.50	<0.50	<0.50	5.5	0.059	62.5	309	0.0065
FB-6 PY AK RHYc	26-Jul-16	10.8	92.3	97.5	<0.50	<0.50	17.4	21.3	<0.50	<0.50	<0.50	5.3	0.044	80.7	309	0.0056
FB-6 PY AK RHYc	24-Aug-16	14.4	153.9	67.7	<0.50	<0.50	13.3	16.2	<0.50	<0.50	<0.50	3.1	0.036	56.3	218	0.003
FB-6 PY AK RHYc	31-Aug-16	4.30	146.30	38.9	<0.50	<0.50	11.8	14.4	<0.50	<0.50	<0.50	2	0.024	29.5	218	<0.0020
FB-6 PY AK RHYc	5-Oct-16	14.4	94.9	106	<0.50	<0.50	17.8	21.8	<0.50	<0.50	<0.50	5.3	0.028	92.4	309	0.0043
FB-8 PY AK RHYc	21-Apr-16	13.6	179.7	65.1	<0.50	<0.50	37.7	46	<0.50	<0.50	<0.50	2.5	0.048	31.4	218	0.0091
FB-8 PY AK RHYc	31-May-16	6.2	90.6	95.6	<0.50	<0.50	34.8	42.5	<0.50	<0.50	<0.50	9.3	0.081	67.6	309	0.0065
FB-8 PY AK RHYc	26-Jul-16	11	88.3	89.2	<0.50	<0.50	23.8	29	<0.50	<0.50	<0.50	3.9	0.043	65.4	309	0.0056
FB-8 PY AK RHYc	24-Aug-16	15.2	119.5	63	<0.50	<0.50	17.5	21.4	<0.50	<0.50	<0.50	2.4	0.041	46	218	0.004
FB-8 PY AK RHYc	31-Aug-16	4.3	15.02	37.1	<0.50	<0.50	12.9	15.8	<0.50	<0.50	<0.50	2	0.023	23.4	218	0.002
FB-8 PY AK RHYc	5-Oct-16	16.9	93.2	95.5	<0.50	<0.50	22.6	27.6	<0.50	<0.50	<0.50	4.8	0.037	74.7	309	0.0028

Description	Sample Date	Nitrate (N)	Aluminum dissolved (Al)	Antimony dissolved (Sb)	Arsenic dissolved (As)	Barium dissolved (Ba)	Beryllium dissolved (Be)	Bismuth dissolved (Bi)	Boron dissolved (B)	Cadmium dissolved (Cd)	Calcium dissolved (Ca)	Chromium dissolved (Cr)	Cobalt dissolved (Co)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
FB-1 AK RHYc	31-May-16	0.0708	0.0189	0.00138	0.00121	0.0304	<0.000010	<0.0000050	<0.010	0.000532	21.4	0.00029	0.000728
FB-1 AK RHYc	26-Jul-16	0.0633	0.0248	0.00119	0.00141	0.0293	<0.000010	<0.0000050	<0.010	0.000189	18.7	<0.00010	0.000478
FB-1 AK RHYc	24-Aug-16	<0.0020	0.022	0.000671	0.00105	0.0228	<0.000010	<0.0000050	<0.010	0.000094	14.3	<0.00010	0.000375
FB-1 AK RHYc	31-Aug-16	0.0205	0.0159	0.000321	0.000665	0.0157	<0.000010	<0.0000050	<0.010	0.000082	8.75	<0.00010	0.00021
FB-1 AK RHYc	5-Oct-16	0.0607	0.0131	0.000666	0.000879	0.0293	<0.000010	<0.0000050	<0.010	0.000112	17.5	<0.00010	0.000629
FB-9 AK RHYv	31-May-16	0.0246	0.0231	0.000894	0.000246	0.039	<0.000010	<0.0000050	<0.010	0.000127	18.5	0.00026	0.000585
FB-9 AK RHYv	26-Jul-16	0.0143	0.0175	0.000806	0.000149	0.0313	<0.000010	<0.0000050	<0.010	0.000114	22	<0.00010	0.00029
FB-9 AK RHYv	24-Aug-16	0.0152	0.0161	0.000493	0.000092	0.0215	<0.000010	<0.0000050	<0.010	0.00006	14.5	<0.00010	0.00018
FB-9 AK RHYv	31-Aug-16	0.0149	0.0144	0.000269	0.000042	0.015	<0.000010	<0.0000050	<0.010	0.000045	9.68	<0.00010	0.000056
FB-9 AK RHYv	5-Oct-16	0.0453	0.0103	0.000785	0.000107	0.0313	<0.000010	<0.0000050	<0.010	0.0001	25.4	<0.00010	0.000352
FB-11 AK RHYv	31-May-16	0.0055	0.0229	0.0029	0.000771	0.0482	<0.000010	<0.0000050	<0.010	0.000166	34.9	0.0003	0.00308
FB-11 AK RHYv	26-Jul-16	0.0673	0.01	0.00266	0.000261	0.0392	<0.000010	<0.0000050	<0.010	0.000108	43.5	<0.00010	0.000536
FB-11 AK RHYv	24-Aug-16	0.0772	0.00816	0.0018	0.00016	0.0258	<0.000010	<0.0000050	<0.010	0.000092	35.5	<0.00010	0.000753
FB-11 AK RHYv	31-Aug-16	0.0186	0.0073	0.000986	0.000088	0.0145	<0.000010	<0.0000050	<0.010	0.000058	18	<0.00010	0.000709
FB-11 AK RHYv	5-Oct-16	0.0566	0.00406	0.00162	0.000163	0.0299	<0.000010	0.000005	<0.010	0.000105	46.9	<0.00010	0.000724
FB-4 CA CL MAF	21-Apr-16	0.0956	0.00605	0.0264	0.0277	0.0443	<0.000010	0.000006	<0.010	0.000018	12.5	0.00018	0.00027
FB-4 CA CL MAF	31-May-16	0.12	0.0207	0.0588	0.0544	0.0718	<0.000010	<0.0000050	<0.010	0.00008	22	0.0003	0.000449
FB-4 CA CL MAF	26-Jul-16	0.124	0.0266	0.0552	0.0546	0.0556	<0.000010	<0.0000050	<0.010	0.000047	19.5	0.00021	0.000061
FB-4 CA CL MAF	24-Aug-16	0.0737	0.0263	0.0394	0.0458	0.0457	<0.000010	<0.0000050	<0.010	0.000027	15.5	0.00018	0.000046
FB-4 CA CL MAF	31-Aug-16	0.0236	0.0282	0.0201	0.0308	0.039	<0.000010	<0.0000050	<0.010	0.000017	11	<0.00010	0.000049
FB-4 CA CL MAF	5-Oct-16	0.0778	0.0128	0.051	0.0573	0.0543	<0.000010	<0.0000050	<0.010	0.000058	17.3	0.0001	0.000095
FB-3 CARB MDS/RHY	31-May-16	0.0724	0.00521	0.0133	0.00119	0.0369	<0.000010	<0.0000050	<0.010	0.000045	44.1	0.00019	0.000955
FB-3 CARB MDS/RHY	26-Jul-16	0.152	0.0047	0.0115	0.00181	0.0329	<0.000010	<0.0000050	<0.010	0.00005	45.6	<0.00010	0.000417
FB-3 CARB MDS/RHY	24-Aug-16	0.0246	0.0116	0.00705	0.00109	0.022	<0.000010	<0.0000050	<0.010	0.000034	31.2	<0.00010	0.000564
FB-3 CARB MDS/RHY	31-Aug-16	0.0569	0.00572	0.0037	0.000795	0.0126	<0.000010	<0.0000050	<0.010	0.000022	14.5	<0.00010	0.000285
FB-3 CARB MDS/RHY	5-Oct-16	0.142	0.00599	0.00763	0.000783	0.0259	<0.000010	<0.0000050	<0.010	0.000038	41.6	<0.00010	0.000523
FB-6 PY AK RHYc	31-May-16	0.0529	0.0105	0.00824	0.000311	0.0236	<0.000010	0.000005	<0.010	0.000224	23.7	<0.00010	0.00104
FB-6 PY AK RHYc	26-Jul-16	0.059	0.0107	0.0051	0.000166	0.0242	<0.000010	<0.0000050	<0.010	0.000145	26.2	<0.00010	0.000755
FB-6 PY AK RHYc	24-Aug-16	0.0532	0.0062	0.00308	0.000121	0.0168	<0.000010	<0.0000050	<0.010	0.000122	17.9	<0.00010	0.000596
FB-6 PY AK RHYc	31-Aug-16	0.021	0.00528	0.00169	0.00007	0.0105	<0.000010	<0.0000050	<0.010	0.000082	10.2	<0.00010	0.000377
FB-6 PY AK RHYc	5-Oct-16	0.0675	0.00236	0.00298	0.000131	0.0229	<0.000010	<0.0000050	<0.010	0.000185	27.2	<0.00010	0.00094
FB-8 PY AK RHYc	21-Apr-16	0.0849	0.00665	0.00717	0.000396	0.00858	<0.000010	<0.0000050	<0.010	0.000015	11.4	0.0002	0.000389
FB-8 PY AK RHYc	31-May-16	0.0754	0.00938	0.0193	0.000633	0.0212	<0.000010	<0.0000050	<0.010	0.00015	26.3	0.0001	0.00186
FB-8 PY AK RHYc	26-Jul-16	0.0951	0.00813	0.0135	0.000451	0.0186	<0.000010	<0.0000050	<0.010	0.000214	24.5	<0.00010	0.00079
FB-8 PY AK RHYc	24-Aug-16	0.0594	0.00952	0.00875	0.000318	0.0134	<0.000010	<0.0000050	<0.010	0.00014	17	<0.00010	0.000492
FB-8 PY AK RHYc	31-Aug-16	0.0198	0.0076	0.00469	0.000175	0.00791	<0.000010	<0.0000050	<0.010	0.000114	10.2	<0.00010	0.000351
FB-8 PY AK RHYc	5-Oct-16	0.0875	0.00516	0.0123	0.000276	0.0176	<0.000010	<0.0000050	<0.010	0.0002	24.5	<0.00010	0.00088

Description	Sample Date	Copper dissolved (Cu)	Iron dissolved (Fe)	Lead dissolved (Pb)	Lithium dissolved (Li)	Magnesium dissolved (Mg)	Manganese dissolved (Mn)	Mercury dissolved (Hg)	Molybdenum dissolved (Mo)	Nickel dissolved (Ni)	Phosphorus dissolved (P)	Potassium dissolved (K)	Selenium dissolved (Se)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
FB-1 AK RHYc	31-May-16	0.00368	0.0012	0.000019	0.00428	4.28	0.071	0.0000033	0.00415	0.00109	0.0105	2.81	0.000965
FB-1 AK RHYc	26-Jul-16	0.00175	<0.0010	0.000006	0.00408	4.51	0.0459	0.0000029	0.00273	0.000689	<0.0020	2.65	0.00116
FB-1 AK RHYc	24-Aug-16	0.000972	<0.0010	<0.0000050	0.00294	3.34	0.0333	0.0000027	0.00165	0.000454	0.0025	1.84	0.000755
FB-1 AK RHYc	31-Aug-16	0.000381	<0.0010	<0.0000050	0.00133	2.1	0.0242	<0.0000020	0.000792	0.000278	<0.0020	1.12	0.000408
FB-1 AK RHYc	5-Oct-16	0.000754	<0.0010	0.000036	0.00227	4.52	0.0607	<0.0000020	0.00185	0.000606	0.0031	1.83	0.00139
FB-9 AK RHYv	31-May-16	0.00319	0.0255	0.000202	0.00714	4.12	0.0583	0.0000029	0.0032	0.0017	0.0065	11.2	0.00118
FB-9 AK RHYv	26-Jul-16	0.00103	0.0117	0.000095	0.00633	5.75	0.0309	0.0000022	0.00265	0.000983	<0.0020	4.41	0.00201
FB-9 AK RHYv	24-Aug-16	0.000614	0.0043	0.000044	0.00378	4.14	0.0239	0.0000026	0.00145	0.000546	<0.0020	2.49	0.00124
FB-9 AK RHYv	31-Aug-16	0.000282	0.001	0.000011	0.00219	2.71	0.0195	<0.0000020	0.000738	0.000348	<0.0020	1.67	0.000713
FB-9 AK RHYv	5-Oct-16	0.000888	<0.0010	0.000013	0.00476	7.53	0.0717	<0.0000020	0.00211	0.00106	<0.0020	3.09	0.00278
FB-11 AK RHYv	31-May-16	0.0072	0.0676	0.000605	0.00552	6.23	0.204	0.0000022	0.00461	0.00477	0.0085	10.5	0.0011
FB-11 AK RHYv	26-Jul-16	0.00126	0.0014	0.000017	0.00511	9.9	0.0704	<0.0000020	0.00236	0.00235	<0.0020	6.38	0.00185
FB-11 AK RHYv	24-Aug-16	0.000885	0.0031	0.000033	0.00327	8.17	0.0621	<0.0000020	0.00134	0.00174	0.0041	4.15	0.0011
FB-11 AK RHYv	31-Aug-16	0.000406	0.0031	0.000023	0.00159	4.45	0.0563	<0.0000020	0.000655	0.00107	<0.0020	2.33	0.000522
FB-11 AK RHYv	5-Oct-16	0.000583	<0.0010	0.00001	0.00345	13.1	0.115	<0.0000020	0.00129	0.00186	0.0097	4.52	0.00189
FB-4 CA CL MAF	21-Apr-16	0.00166	0.003	0.000063	0.00707	7.77	0.0121	<0.0000020	0.00826	0.00734	0.0024	3.71	0.00242
FB-4 CA CL MAF	31-May-16	0.0019	0.0018	0.000101	0.00951	8.89	0.0348	0.0000034	0.00843	0.00647	0.0084	4.53	0.00274
FB-4 CA CL MAF	26-Jul-16	0.000717	<0.0010	0.000053	0.00823	6.96	0.000662	0.0000036	0.00592	0.00303	<0.0020	3.69	0.00257
FB-4 CA CL MAF	24-Aug-16	0.000593	<0.0010	0.000043	0.00624	5.14	0.000981	0.0000025	0.00358	0.00186	<0.0020	2.75	0.00153
FB-4 CA CL MAF	31-Aug-16	0.000292	<0.0010	0.00003	0.00294	3.21	0.00616	<0.0000020	0.00152	0.00115	<0.0020	1.86	0.000721
FB-4 CA CL MAF	5-Oct-16	0.0016	<0.0010	0.000116	0.00524	5.99	0.00724	<0.0000020	0.00462	0.00306	0.0031	3.01	0.00215
FB-3 CARB MDS/RHY	31-May-16	0.00272	0.0072	0.000677	0.0106	14	0.0526	<0.0000020	0.0178	0.00393	0.222	7.99	0.0068
FB-3 CARB MDS/RHY	26-Jul-16	0.0011	0.0013	0.000132	0.0108	15.3	0.0716	0.000002	0.0137	0.0043	0.0574	5.99	0.0105
FB-3 CARB MDS/RHY	24-Aug-16	0.000898	0.0108	0.000615	0.00592	9.85	0.0745	<0.0000020	0.00651	0.00221	0.0063	3.96	0.00609
FB-3 CARB MDS/RHY	31-Aug-16	0.000471	0.0046	0.000279	0.00298	4.96	0.0413	<0.0000020	0.00279	0.00104	<0.0020	2.17	0.0029
FB-3 CARB MDS/RHY	5-Oct-16	0.00049	<0.0010	0.000078	0.00701	14.4	0.0897	<0.0000020	0.00663	0.00224	0.0056	3.57	0.00809
FB-6 PY AK RHYc	31-May-16	0.00255	0.0078	0.000328	0.00556	6.06	0.0867	0.0000028	0.00366	0.00397	0.0096	2.58	0.00234
FB-6 PY AK RHYc	26-Jul-16	0.00293	0.0083	0.000161	0.00511	7.78	0.116	0.0000026	0.00222	0.00253	<0.0020	2.36	0.00324
FB-6 PY AK RHYc	24-Aug-16	0.00192	0.007	0.000155	0.0034	5.56	0.0955	0.0000025	0.00124	0.00164	<0.0020	1.5	0.00222
FB-6 PY AK RHYc	31-Aug-16	0.00139	0.0044	0.000093	0.00185	3.26	0.0568	<0.0000020	0.000572	0.000887	<0.0020	0.916	0.00108
FB-6 PY AK RHYc	5-Oct-16	0.00223	0.0011	0.000083	0.0036	9.18	0.162	<0.0000020	0.00153	0.00207	<0.0020	1.79	0.00324
FB-8 PY AK RHYc	21-Apr-16	0.00455	0.0025	0.000123	0.00601	8.9	0.00799	<0.0000020	0.00475	0.00528	0.0075	2.14	0.000853
FB-8 PY AK RHYc	31-May-16	0.00586	0.0037	0.000384	0.0088	7.23	0.116	0.0000045	0.00523	0.00921	0.0057	2.95	0.0059
FB-8 PY AK RHYc	26-Jul-16	0.00508	0.0032	0.000282	0.00574	6.82	0.0825	0.0000042	0.00299	0.00455	<0.0020	2.16	0.00563
FB-8 PY AK RHYc	24-Aug-16	0.00247	0.0019	0.000174	0.00341	5.01	0.0649	<0.0000020	0.00178	0.0029	0.0023	1.36	0.0038
FB-8 PY AK RHYc	31-Aug-16	0.00176	<0.0010	0.00011	0.00159	2.84	0.0464	<0.0000020	0.000863	0.002	<0.0020	0.843	0.00189
FB-8 PY AK RHYc	5-Oct-16	0.00327	<0.0010	0.000087	0.00422	8.32	0.108	<0.0000020	0.00207	0.00503	0.0211	1.64	0.0058

Description	Sample Date	Silicon dissolved (Si)	Silver dissolved (Ag)	Sodium dissolved (Na)	Strontium dissolved (Sr)	Sulphur dissolved (S)	Thallium dissolved (Tl)	Tin dissolved (Sn)	Titanium dissolved (Ti)	Uranium dissolved (U)	Vanadium dissolved (V)	Zinc dissolved (Zn)	Zirconium dissolved (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
FB-1 AK RHYc	31-May-16	0.752	0.000024	2.99	0.0701	9.9	0.000011	<0.00020	<0.00050	0.0353	<0.00020	0.00294	0.00017
FB-1 AK RHYc	26-Jul-16	0.83	0.000008	2.57	0.0625	11.7	0.000006	<0.00020	<0.00050	0.0304	<0.00020	0.00023	<0.00010
FB-1 AK RHYc	24-Aug-16	0.559	<0.0000050	1.34	0.0505	7.7	0.000011	<0.00020	<0.00050	0.0217	<0.00020	0.00079	<0.00010
FB-1 AK RHYc	31-Aug-16	0.318	<0.0000050	0.588	0.0319	3.7	0.000011	<0.00020	<0.00050	0.00818	<0.00020	0.0006	<0.00010
FB-1 AK RHYc	5-Oct-16	0.509	<0.0000050	1.81	0.063	11.4	0.000003	<0.00020	<0.00050	0.0315	<0.00020	0.00118	<0.00010
FB-9 AK RHYv	31-May-16	0.747	0.000015	1.42	0.0774	7.5	0.000026	<0.00020	<0.00050	0.0119	<0.00020	0.00649	0.0008
FB-9 AK RHYv	26-Jul-16	0.824	0.000005	1.66	0.084	13.3	0.000006	<0.00020	<0.00050	0.031	<0.00020	0.00182	0.00015
FB-9 AK RHYv	24-Aug-16	0.525	0.000006	0.9	0.063	9.1	0.000013	<0.00020	<0.00050	0.0219	<0.00020	0.00143	<0.00010
FB-9 AK RHYv	31-Aug-16	0.316	0.000005	0.473	0.0437	5	0.000017	<0.00020	<0.00050	0.0105	<0.00020	0.0007	<0.00010
FB-9 AK RHYv	5-Oct-16	0.543	<0.0000050	1.92	0.106	20.1	0.000002	<0.00020	<0.00050	0.0497	<0.00020	0.00191	0.00011
FB-11 AK RHYv	31-May-16	1.16	0.000015	1.79	0.0884	19.2	0.000012	<0.00020	0.00091	0.0146	<0.00020	0.0169	0.00182
FB-11 AK RHYv	26-Jul-16	0.919	0.000005	2.49	0.0992	34.7	0.000011	<0.00020	<0.00050	0.0285	<0.00020	0.00208	0.00018
FB-11 AK RHYv	24-Aug-16	0.557	<0.0000050	1.48	0.0792	25.7	0.000009	<0.00020	<0.00050	0.0225	<0.00020	0.00318	<0.00010
FB-11 AK RHYv	31-Aug-16	0.341	<0.0000050	0.619	0.043	13	0.000008	<0.00020	<0.00050	0.00896	<0.00020	0.00163	<0.00010
FB-11 AK RHYv	5-Oct-16	0.515	<0.0000050	2.37	0.116	41.1	0.000007	<0.00020	<0.00050	0.0325	<0.00020	0.00365	0.00013
FB-4 CA CL MAF	21-Apr-16	0.72	<0.0000050	7.16	0.0614	6.8	0.000026	<0.00020	<0.00050	0.0054	0.00057	0.00112	0.00035
FB-4 CA CL MAF	31-May-16	1.42	0.000007	7.25	0.0893	7.8	0.000049	<0.00020	<0.00050	0.0151	0.0007	0.00137	0.00034
FB-4 CA CL MAF	26-Jul-16	1.51	<0.0000050	4.94	0.0757	8.2	0.000052	<0.00020	<0.00050	0.0159	0.00134	0.0003	0.00014
FB-4 CA CL MAF	24-Aug-16	0.991	<0.0000050	2.84	0.0641	5.3	0.000045	<0.00020	<0.00050	0.0123	0.00108	0.00067	<0.00010
FB-4 CA CL MAF	31-Aug-16	0.593	<0.0000050	1.41	0.0453	<3.0	0.000029	<0.00020	<0.00050	0.00652	0.00088	0.00058	<0.00010
FB-4 CA CL MAF	5-Oct-16	0.908	<0.0000050	3.93	0.0733	7.7	0.00004	<0.00020	<0.00050	0.0177	0.00086	0.00591	0.00016
FB-3 CARB MDS/RHY	31-May-16	2.1	0.000014	8.44	0.243	44.4	0.000189	<0.00020	<0.00050	0.044	<0.00020	0.0111	0.0014
FB-3 CARB MDS/RHY	26-Jul-16	2.61	0.000007	7.39	0.199	53.9	0.000255	<0.00020	<0.00050	0.0453	<0.00020	0.00778	0.0004
FB-3 CARB MDS/RHY	24-Aug-16	1.39	<0.0000050	3.63	0.124	33.1	0.000139	<0.00020	<0.00050	0.0302	<0.00020	0.00825	0.00033
FB-3 CARB MDS/RHY	31-Aug-16	0.86	<0.0000050	1.3	0.0648	14.1	0.000049	<0.00020	<0.00050	0.00919	<0.00020	0.0043	0.00025
FB-3 CARB MDS/RHY	5-Oct-16	1.48	<0.0000050	4.65	0.174	45.6	0.000081	<0.00020	<0.00050	0.0565	<0.00020	0.0052	0.00022
FB-6 PY AK RHYc	31-May-16	0.979	0.000005	4.86	0.0875	21.8	0.000037	<0.00020	<0.00050	0.0176	<0.00020	0.0116	0.00032
FB-6 PY AK RHYc	26-Jul-16	0.81	<0.0000050	4.11	0.0923	29	0.000034	<0.00020	<0.00050	0.0142	<0.00020	0.00921	<0.00010
FB-6 PY AK RHYc	24-Aug-16	0.726	<0.0000050	2.24	0.0662	19.9	0.000033	<0.00020	<0.00050	0.00647	<0.00020	0.0117	<0.00010
FB-6 PY AK RHYc	31-Aug-16	0.433	<0.0000050	1.05	0.0383	10.3	0.000023	<0.00020	<0.00050	0.00382	<0.00020	0.00646	<0.00010
FB-6 PY AK RHYc	5-Oct-16	0.74	<0.0000050	3.78	0.1	31.4	0.000032	<0.00020	<0.00050	0.017	<0.00020	0.0145	<0.00010
FB-8 PY AK RHYc	21-Apr-16	0.481	0.00002	3.59	0.0545	12.8	0.000009	<0.00020	<0.00050	0.00784	<0.00020	0.00225	0.00036
FB-8 PY AK RHYc	31-May-16	0.964	0.000047	6.65	0.11	25.9	0.000025	<0.00020	<0.00050	0.0273	<0.00020	0.027	0.00075
FB-8 PY AK RHYc	26-Jul-16	1.03	0.000022	3.81	0.0855	23.8	0.000028	<0.00020	<0.00050	0.0149	<0.00020	0.0265	0.00029
FB-8 PY AK RHYc	24-Aug-16	0.648	0.000011	1.98	0.063	16.1	0.000019	<0.00020	<0.00050	0.0111	<0.00020	0.0171	0.00012
FB-8 PY AK RHYc	31-Aug-16	0.388	<0.0000050	0.965	0.0362	8.1	0.000012	<0.00020	<0.00050	0.00577	<0.00020	0.0121	<0.00010
FB-8 PY AK RHYc	5-Oct-16	0.652	<0.0000050	3.65	0.0942	24.9	0.000028	<0.00020	<0.00050	0.0296	<0.00020	0.0224	<0.00010

Description	Sample Date	Sampled By	Sample Comments	Leach Volume in Field Bin	pH (field)	pH (lab)	Specific Conductance (field)	Specific Conductance (lab)
				L	pH units	pH units	µS/cm	µS/cm
FB-1 PY AK RHYv	31-May-16	J.Inkster	clear with sediment on bottom	3.5	7.84	7.79	215.7	220
FB-1 PY AK RHYv	26-Jul-16	J.Inkster	clear, grey percipitate	18.5	7.84	7.74	245.9	237
FB-1 PY AK RHYv	24-Aug-16	A.Badger/J.Inkster	Grey sediment, greenish water	12	7.75	7.68	186.8	182
FB-1 PY AK RHYv	31-Aug-16	J.Inskster	Clear with very little sediment	13.5	7.25	7.58	112.7	111
FB-1 PY AK RHYv	5-Oct-16	A.MacPhail	Water is clear, some grey sediment on bottom; bins thawed indoors via heater resulting in elevated tem	14.2	7.42	7.51	329.1	357
FB-2 PY AK RHYv	31-May-16	J.Inkster	Clear with sediment on bottom	5	7.88	7.74	195.5	196
FB-2 PY AK RHYv	26-Jul-16	J.Inkster	sediment on bottom, clear	20.5	7.83	7.64	198.5	195
FB-2 PY AK RHYv	24-Aug-16	A.Badger/J.Inkster	Clear with sediment on bottom	13.5	7.9	7.52	152	146
FB-2 PY AK RHYv	31-Aug-16	J.Inskster	Clear with sediment on bottom	13.5	7.3	7.5	86.7	85.7
FB-2 PY AK RHYv	5-Oct-16	A.MacPhail	bins thawed indoors via heater resulting in elevated temps	13.2	7.49	7.27	162.5	184
FB-10 PY CL RHY	21-Apr-16	A.MacPhail	Bucket thawed out overnight, small and large black and grey particulates on bottom of bucket	3.9	7.98	7.6	166.1	198
FB-10 PY CL RHY	31-May-16	J.Inkster	Light grey, some sediment and suspended solids	5	7.83	7.62	329.8	330
FB-10 PY CL RHY	26-Jul-16	J.Inkster	sediment on bottom of bucket, algae on water	19.5	7.85	7.49	290.6	280
FB-10 PY CL RHY	24-Aug-16	A.Badger/J.Inkster	Clear. Sediment on bottom	11.5	7.85	7.49	195.8	193
FB-10 PY CL RHY	31-Aug-16	J.Inskster	Clear with some sediment on bottom	13.5	7.31	7.4	120.2	117
FB-10 PY CL RHY	5-Oct-16	A.MacPhail	Grey sediment on bottom, water is clear; bins thawed indoors via heater resulting in elevated temps	13.8	7.65	7.36	241.6	267
FB-7 MU PY RHY	31-May-16	J.Inkster	clear with sediment on bottom	3.5	7.89	7.66	162	164
FB-7 MU PY RHY	26-Jul-16	J.Inkster	clear, almost full, minor particulate on bottom	18.25	7.69	7.54	403.2	390
FB-7 MU PY RHY	24-Aug-16	A.Badger/J.Inkster	Clear, sediment on bottom	12.5	7.77	7.54	231.9	232
FB-7 MU PY RHY	31-Aug-16	J.Inskster	Clear	13.5	7.24	7.47	132.9	130
FB-7 MU PY RHY	5-Oct-16	A.MacPhail	Water is clear; bins thawed indoors via heater resulting in elevated temps	14.1	7.58	7.48	224.5	248
FB-12 PY AK RHYv (previously ID'd as RHY)	31-May-16	J.Inkster	Grey, sediments on bottm and suspended solids present	4	7.79	7.81	248.1	244
FB-12 PY AK RHYv (previously ID'd as RHY)	26-Jul-16	J.Inkster	sediment on bottom, cloudy	19.5	7.77	7.54	283.2	273
FB-12 PY AK RHYv (previously ID'd as RHY)	24-Aug-16	A.Badger/J.Inkster	Some suspended solids, sediment on bottom	12.5	7.82	7.55	194.2	190
FB-12 PY AK RHYv (previously ID'd as RHY)	31-Aug-16	J.Inskster	Cloudy with sediment on bottom.	13.5	7.31	7.54	118.1	118
FB-12 PY AK RHYv (previously ID'd as RHY)	5-Oct-16	A.MacPhail	Water clear, grey sediment on bottom; bins thawed indoors via heater resulting in elevated temps	14.3	7.51	7.41	228.1	253

Description	Sample Date	Temperature (field)	ORP (field)	Hardness (from dissolved)	Total Acidity	Acidity (pH 4.5)	Alkalinity total	Alkalinity bicarbonate HCO_3	Alkalinity hydroxide OH	Alkalinity carbonate CO_3	Alkalinity PP carbonate CO_3	Chloride	Fluoride	Sulphate dissolved	Calculated SO_4^- D BC-MOE	Nitrite (N)
		C	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
FB-1 PY AK RHYv	31-May-16	8.8	114	84.3	<0.50	<0.50	43.1	52.6	<0.50	<0.50	<0.50	3.3	0.081	52	309	0.0033
FB-1 PY AK RHYv	26-Jul-16	11	96.5	100	<0.50	<0.50	33.6	41	<0.50	<0.50	<0.50	3.4	0.056	71.8	309	0.0052
FB-1 PY AK RHYv	24-Aug-16	15.6	168	73.7	<0.50	<0.50	28.9	35.2	<0.50	<0.50	<0.50	2.5	0.045	47.8	218	0.0037
FB-1 PY AK RHYv	31-Aug-16	4.3	149.7	43.2	<0.50	<0.50	22.9	27.9	<0.50	<0.50	<0.50	1.8	0.026	24.8	218	0.0022
FB-1 PY AK RHYv	5-Oct-16	7.3	133.2	101	<0.50	<0.50	33.9	41.4	<0.50	<0.50	<0.50	32	0.036	69.3	309	0.0042
FB-2 PY AK RHYv	31-May-16	6.2	115.3	81.8	<0.50	<0.50	42.9	52.3	<0.50	<0.50	<0.50	5.1	0.067	36.1	309	0.0024
FB-2 PY AK RHYv	26-Jul-16	11.1	102	84.3	<0.50	<0.50	36	43.9	<0.50	<0.50	<0.50	7.5	0.041	43.9	309	0.0035
FB-2 PY AK RHYv	24-Aug-16	14.1	149.3	59.8	<0.50	<0.50	21.9	26.8	<0.50	<0.50	<0.50	1.8	0.033	37.4	218	0.002
FB-2 PY AK RHYv	31-Aug-16	4.3	148.8	33.8	<0.50	<0.50	17.4	21.2	<0.50	<0.50	<0.50	1.4	0.022	17	218	<0.0020
FB-2 PY AK RHYv	5-Oct-16	14.1	132.2	79.3	<0.50	<0.50	24.2	29.5	<0.50	<0.50	<0.50	2.4	0.03	55.7	309	0.0035
FB-10 PY CL RHY	21-Apr-16	12.8	137.5	68.5	<0.50	<0.50	32.8	40	<0.50	<0.50	<0.50	7	0.081	35.2	218	0.0091
FB-10 PY CL RHY	31-May-16	6.1	85.3	118	0.51	<0.50	37.3	45.6	<0.50	<0.50	<0.50	16	0.13	90.4	309	0.0062
FB-10 PY CL RHY	26-Jul-16	11.2	94.9	111	<0.50	<0.50	24.3	29.7	<0.50	<0.50	<0.50	9.6	0.11	88.2	309	0.0047
FB-10 PY CL RHY	24-Aug-16	12.9	128.2	71.2	<0.50	<0.50	17.1	20.8	<0.50	<0.50	<0.50	3.7	0.069	58.9	218	0.003
FB-10 PY CL RHY	31-Aug-16	4.4	153.6	43.2	<0.50	<0.50	13.3	16.3	<0.50	<0.50	<0.50	2.4	0.036	31.7	218	0.002
FB-10 PY CL RHY	5-Oct-16	22.7	86.8	105	<0.50	<0.50	25.1	30.6	<0.50	<0.50	<0.50	6.3	0.085	91	309	0.0026
FB-7 MU PY RHY	31-May-16	7	111.7	62.1	<0.50	<0.50	33.9	41.4	<0.50	<0.50	<0.50	5	0.076	33.2	218	0.004
FB-7 MU PY RHY	26-Jul-16	11.1	107.4	167	<0.50	<0.50	25.6	31.2	<0.50	<0.50	<0.50	7.6	0.11	140	309	0.0115
FB-7 MU PY RHY	24-Aug-16	13.2	173	95.5	<0.50	<0.50	20.9	25.5	<0.50	<0.50	<0.50	2.4	0.08	79.2	309	0.0094
FB-7 MU PY RHY	31-Aug-16	4.2	151.7	48.5	<0.50	<0.50	13.8	16.8	<0.50	<0.50	<0.50	1.3	0.045	35.8	218	0.0063
FB-7 MU PY RHY	5-Oct-16	19.7	106.3	101	<0.50	<0.50	27.5	33.5	<0.50	<0.50	<0.50	3	0.073	83.5	309	0.0088
FB-12 PY AK RHYv (previously ID'd as RHY)	31-May-16	6.8	97.1	95.4	<0.50	<0.50	50.9	62	<0.50	<0.50	<0.50	9.4	0.088	52.3	309	0.0073
FB-12 PY AK RHYv (previously ID'd as RHY)	26-Jul-16	11	100.7	119	<0.50	<0.50	31.5	38.4	<0.50	<0.50	<0.50	4.6	0.063	89.4	309	0.0071
FB-12 PY AK RHYv (previously ID'd as RHY)	24-Aug-16	15.6	160.4	75.8	<0.50	<0.50	26	31.7	<0.50	<0.50	<0.50	2.9	0.046	54.1	218	0.005
FB-12 PY AK RHYv (previously ID'd as RHY)	31-Aug-16	4.2	152.1	45.3	<0.50	<0.50	21.5	26.3	<0.50	<0.50	<0.50	1.9	0.029	28.8	218	0.0054
FB-12 PY AK RHYv (previously ID'd as RHY)	5-Oct-16	6.2	131.3	111	<0.50	<0.50	33.2	40.5	<0.50	<0.50	<0.50	4.5	0.043	81.8	309	0.0076

Description	Sample Date	Nitrate (N)	Aluminum dissolved (Al)	Antimony dissolved (Sb)	Arsenic dissolved (As)	Barium dissolved (Ba)	Beryllium dissolved (Be)	Bismuth dissolved (Bi)	Boron dissolved (B)	Cadmium dissolved (Cd)	Calcium dissolved (Ca)	Chromium dissolved (Cr)	Cobalt dissolved (Co)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
FB-1 PY AK RHYv	31-May-16	0.0737	0.013	0.00292	0.000334	0.0268	<0.000010	<0.0000050	<0.010	0.000042	24.7	<0.00010	0.000332
FB-1 PY AK RHYv	26-Jul-16	0.0584	0.0239	0.00449	0.000209	0.0258	<0.000010	<0.0000050	<0.010	0.000052	28.6	<0.00010	0.000055
FB-1 PY AK RHYv	24-Aug-16	0.0559	0.0158	0.00289	0.00014	0.0185	<0.000010	<0.0000050	<0.010	0.000044	20.9	<0.00010	0.000224
FB-1 PY AK RHYv	31-Aug-16	0.0211	0.0134	0.00174	0.000068	0.0114	<0.000010	<0.0000050	<0.010	0.000033	12.2	<0.00010	0.000146
FB-1 PY AK RHYv	5-Oct-16	0.0687	0.00676	0.00435	0.000133	0.0245	<0.000010	<0.0000050	<0.010	0.000081	28	<0.00010	0.00016
FB-2 PY AK RHYv	31-May-16	0.0367	0.0154	0.00817	0.000375	0.0172	<0.000010	<0.0000050	<0.010	0.000051	24.7	<0.00010	0.0065
FB-2 PY AK RHYv	26-Jul-16	0.0535	0.0163	0.00375	0.000225	0.0191	0.000012	<0.0000050	<0.010	0.000039	24.9	<0.00010	0.00344
FB-2 PY AK RHYv	24-Aug-16	0.0379	0.0131	0.00222	0.000131	0.0213	<0.000010	<0.0000050	<0.010	0.000024	17.3	<0.00010	0.00197
FB-2 PY AK RHYv	31-Aug-16	0.0122	0.0137	0.00101	0.000075	0.00817	<0.000010	<0.0000050	<0.010	0.000011	10	<0.00010	0.000939
FB-2 PY AK RHYv	5-Oct-16	0.0502	0.00703	0.00182	0.000136	0.0185	<0.000010	<0.0000050	<0.010	0.00003	22.7	<0.00010	0.00279
FB-10 PY CL RHY	21-Apr-16	0.0746	0.0032	0.00522	0.000731	0.0211	<0.000010	0.000005	<0.010	0.000051	19.8	0.00027	0.000531
FB-10 PY CL RHY	31-May-16	0.0874	0.0124	0.00881	0.0011	0.0333	<0.000010	<0.0000050	<0.010	0.000087	35.4	0.00011	0.000981
FB-10 PY CL RHY	26-Jul-16	0.112	0.00816	0.00706	0.000977	0.0288	<0.000010	<0.0000050	<0.010	0.000099	31.5	<0.00010	0.000519
FB-10 PY CL RHY	24-Aug-16	0.0583	0.00808	0.00401	0.000511	0.0169	<0.000010	<0.0000050	<0.010	0.000077	19.8	<0.00010	0.000543
FB-10 PY CL RHY	31-Aug-16	0.0208	0.00654	0.00252	0.000344	0.0114	<0.000010	<0.0000050	<0.010	0.000056	12.1	<0.00010	0.000408
FB-10 PY CL RHY	5-Oct-16	0.0721	0.00414	0.00526	0.000525	0.0219	<0.000010	<0.0000050	<0.010	0.00009	28.4	<0.00010	0.000591
FB-7 MU PY RHY	31-May-16	0.0811	0.01	0.017	0.000936	0.023	<0.000010	<0.0000050	<0.010	0.000183	17	<0.00010	0.000288
FB-7 MU PY RHY	26-Jul-16	0.134	0.00672	0.0342	0.0012	0.0394	<0.000010	<0.0000050	<0.010	0.00026	45.9	<0.00010	0.000225
FB-7 MU PY RHY	24-Aug-16	0.0684	0.00732	0.0226	0.000645	0.0215	<0.000010	<0.0000050	<0.010	0.000155	26.8	<0.00010	0.000369
FB-7 MU PY RHY	31-Aug-16	0.024	0.0057	0.0132	0.000576	0.0133	<0.000010	<0.0000050	<0.010	0.000094	13.3	<0.00010	0.000233
FB-7 MU PY RHY	5-Oct-16	0.0722	0.00364	0.023	0.00048	0.0234	<0.000010	<0.0000050	<0.010	0.000188	27.7	<0.00010	0.000522
FB-12 PY AK RHYv (previously ID'd as RHY)	31-May-16	0.0582	0.0167	0.101	0.00217	0.0309	<0.000010	<0.0000050	<0.010	0.0003	24.4	0.00014	0.00196
FB-12 PY AK RHYv (previously ID'd as RHY)	26-Jul-16	0.0675	0.00778	0.0636	0.000797	0.0343	<0.000010	<0.0000050	<0.010	0.000465	29.7	<0.00010	0.00075
FB-12 PY AK RHYv (previously ID'd as RHY)	24-Aug-16	0.0534	0.0121	0.0383	0.000607	0.0222	<0.000010	<0.0000050	<0.010	0.000272	18.7	<0.00010	0.000964
FB-12 PY AK RHYv (previously ID'd as RHY)	31-Aug-16	0.0213	0.00915	0.0183	0.00038	0.0156	<0.000010	<0.0000050	<0.010	0.000183	11.2	<0.00010	0.000607
FB-12 PY AK RHYv (previously ID'd as RHY)	5-Oct-16	0.069	0.00649	0.047	0.000556	0.0294	<0.000010	<0.0000050	<0.010	0.000334	26.9	0.00118	0.00147

Description	Sample Date	Copper dissolved (Cu)	Iron dissolved (Fe)	Lead dissolved (Pb)	Lithium dissolved (Li)	Magnesium dissolved (Mg)	Manganese dissolved (Mn)	Mercury dissolved (Hg)	Molybdenum dissolved (Mo)	Nickel dissolved (Ni)	Phosphorus dissolved (P)	Potassium dissolved (K)	Selenium dissolved (Se)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
FB-1 PY AK RHYv	31-May-16	0.00114	0.003	0.000052	0.00695	5.52	0.0278	0.0000027	0.00356	0.00132	0.0085	3.8	0.0013
FB-1 PY AK RHYv	26-Jul-16	0.000968	0.0031	0.000029	0.00691	7.08	0.00689	0.0000027	0.00217	0.00102	<0.0020	3.33	0.00207
FB-1 PY AK RHYv	24-Aug-16	0.000433	0.0066	0.000042	0.00474	5.24	0.0287	0.0000021	0.00122	0.000801	0.0041	2.29	0.00146
FB-1 PY AK RHYv	31-Aug-16	0.000247	0.0039	0.000025	0.00201	3.08	0.0213	<0.0000020	0.000586	0.000458	0.0021	1.43	0.000715
FB-1 PY AK RHYv	5-Oct-16	0.000728	<0.0010	0.000019	0.00473	7.55	0.0365	<0.0000020	0.00142	0.000948	0.0035	2.58	0.00202
FB-2 PY AK RHYv	31-May-16	0.0434	0.0027	0.000048	0.00609	4.92	0.131	0.0000039	0.00533	0.00476	0.0112	3.28	0.000915
FB-2 PY AK RHYv	26-Jul-16	0.0152	0.0028	0.000028	0.00575	5.37	0.114	0.000004	0.00239	0.00178	<0.0020	2.65	0.00118
FB-2 PY AK RHYv	24-Aug-16	0.00747	0.0017	0.000038	0.00341	4.01	0.0831	0.0000023	0.00137	0.000969	0.0023	1.78	0.000772
FB-2 PY AK RHYv	31-Aug-16	0.00359	<0.0010	0.000014	0.00165	2.13	0.0478	<0.0000020	0.000619	0.000436	<0.0020	1.06	0.000361
FB-2 PY AK RHYv	5-Oct-16	0.00749	<0.0010	0.000022	0.00339	5.52	0.126	<0.0000020	0.00131	0.00136	0.0024	1.97	0.000983
FB-10 PY CL RHY	21-Apr-16	0.00162	0.0034	0.000141	0.00398	4.62	0.0394	<0.0000020	0.00727	0.00172	0.0069	3.36	0.00884
FB-10 PY CL RHY	31-May-16	0.00284	0.0128	0.000444	0.00575	7.31	0.117	0.0000046	0.00923	0.00226	0.0092	4.31	0.0274
FB-10 PY CL RHY	26-Jul-16	0.00114	0.0045	0.000261	0.00563	7.84	0.109	0.0000021	0.00658	0.00127	<0.0020	3.46	0.0287
FB-10 PY CL RHY	24-Aug-16	0.000812	0.0094	0.000335	0.00368	5.25	0.116	0.0000022	0.00375	0.000772	0.0046	2.14	0.0185
FB-10 PY CL RHY	31-Aug-16	0.000394	0.0063	0.000212	0.00199	3.14	0.081	<0.0000020	0.00191	0.000505	<0.0020	1.37	0.0106
FB-10 PY CL RHY	5-Oct-16	0.000744	0.0012	0.00014	0.00369	8.24	0.198	<0.0000020	0.00423	0.000992	0.0058	2.7	0.0259
FB-7 MU PY RHY	31-May-16	0.00164	0.0016	0.000143	0.00352	4.76	0.0317	0.0000022	0.00685	0.00302	0.0026	2.61	0.00416
FB-7 MU PY RHY	26-Jul-16	0.00134	0.0019	0.00019	0.00763	12.7	0.0396	0.0000031	0.00901	0.00615	<0.0020	5.09	0.014
FB-7 MU PY RHY	24-Aug-16	0.000796	0.0019	0.000123	0.00397	6.93	0.0357	0.0000104	0.00419	0.00452	0.0054	2.93	0.00747
FB-7 MU PY RHY	31-Aug-16	0.000361	<0.0010	0.000091	0.00225	3.69	0.025	<0.0000020	0.00193	0.00266	<0.0020	1.7	0.0043
FB-7 MU PY RHY	5-Oct-16	0.000596	<0.0010	0.000084	0.00319	7.8	0.0505	0.000002	0.00386	0.00518	0.0054	2.83	0.00925
FB-12 PY AK RHYv (previously ID'd as RHY)	31-May-16	0.00228	0.0038	0.000162	0.00841	8.37	0.0566	0.0000027	0.00684	0.0317	0.0107	4.13	0.00864
FB-12 PY AK RHYv (previously ID'd as RHY)	26-Jul-16	0.00112	0.0024	0.000182	0.00876	10.9	0.0707	0.0000034	0.00461	0.0178	<0.0020	3.73	0.0207
FB-12 PY AK RHYv (previously ID'd as RHY)	24-Aug-16	0.00142	0.0076	0.000177	0.00571	7.03	0.0799	0.0000027	0.00245	0.00987	0.003	2.54	0.0137
FB-12 PY AK RHYv (previously ID'd as RHY)	31-Aug-16	0.000679	0.0048	0.000079	0.00262	4.19	0.0552	<0.0000020	0.00112	0.00525	<0.0020	1.67	0.00669
FB-12 PY AK RHYv (previously ID'd as RHY)	5-Oct-16	0.00208	0.012	0.000253	0.0068	10.6	0.112	<0.0000020	0.0028	0.0152	<0.0020	3.33	0.0149

Description	Sample Date	Silicon dissolved (Si)	Silver dissolved (Ag)	Sodium dissolved (Na)	Strontium dissolved (Sr)	Sulphur dissolved (S)	Thallium dissolved (Tl)	Tin dissolved (Sn)	Titanium dissolved (Ti)	Uranium dissolved (U)	Vanadium dissolved (V)	Zinc dissolved (Zn)	Zirconium dissolved (Zr)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
FB-1 PY AK RHYv	31-May-16	0.893	0.000005	4.15	0.0941	17.8	0.000013	<0.00020	<0.00050	0.025	<0.00020	0.004	0.0003
FB-1 PY AK RHYv	26-Jul-16	1.02	0.000007	4.08	0.104	25.7	0.000007	<0.00020	<0.00050	0.0276	<0.00020	0.00019	0.00014
FB-1 PY AK RHYv	24-Aug-16	0.677	<0.0000050	2.35	0.0777	17.6	0.000011	<0.00020	<0.00050	0.0173	<0.00020	0.00185	<0.00010
FB-1 PY AK RHYv	31-Aug-16	0.401	<0.0000050	1.05	0.0473	8.7	0.000012	<0.00020	<0.00050	0.00929	<0.00020	0.00088	<0.00010
FB-1 PY AK RHYv	5-Oct-16	0.636	<0.0000050	26.4	0.108	24.3	0.000016	<0.00020	<0.00050	0.0297	<0.00020	0.00395	<0.00010
FB-2 PY AK RHYv	31-May-16	1.15	0.000071	2.13	0.0677	14.6	0.000015	<0.00020	<0.00050	0.0202	<0.00020	0.0551	0.00024
FB-2 PY AK RHYv	26-Jul-16	1.17	0.00609	1.86	0.0703	18.5	0.000018	<0.00020	<0.00050	0.0232	<0.00020	0.0354	0.00012
FB-2 PY AK RHYv	24-Aug-16	0.728	0.000603	1.16	0.0554	13	0.000016	<0.00020	<0.00050	0.0156	<0.00020	0.0272	<0.00010
FB-2 PY AK RHYv	31-Aug-16	0.396	0.000055	0.461	0.0342	5.7	0.000011	<0.00020	<0.00050	0.00711	<0.00020	0.0141	<0.00010
FB-2 PY AK RHYv	5-Oct-16	0.632	0.000243	1.48	0.0726	17.5	0.000008	<0.00020	<0.00050	0.0256	<0.00020	0.0497	<0.00010
FB-10 PY CL RHY	21-Apr-16	0.371	0.000005	7.65	0.0625	16.6	0.000078	<0.00020	<0.00050	0.0225	<0.00020	0.0107	0.00052
FB-10 PY CL RHY	31-May-16	0.915	0.00001	11.2	0.1	34.6	0.000095	<0.00020	<0.00050	0.0639	<0.00020	0.0264	0.00107
FB-10 PY CL RHY	26-Jul-16	1.19	0.000007	7.51	0.083	32.6	0.000126	<0.00020	<0.00050	0.0438	<0.00020	0.018	0.00016
FB-10 PY CL RHY	24-Aug-16	0.741	0.000008	3.56	0.0547	21	0.000085	<0.00020	<0.00050	0.028	<0.00020	0.0196	<0.00010
FB-10 PY CL RHY	31-Aug-16	0.483	<0.0000050	1.72	0.0337	11.1	0.000041	<0.00020	<0.00050	0.0138	<0.00020	0.0171	<0.00010
FB-10 PY CL RHY	5-Oct-16	0.804	<0.0000050	5.83	0.078	29	0.000064	<0.00020	<0.00050	0.0546	<0.00020	0.02	<0.00010
FB-7 MU PY RHY	31-May-16	1.13	<0.0000050	2.67	0.0778	11.7	0.000052	<0.00020	<0.00050	0.0368	<0.00020	0.00756	0.0004
FB-7 MU PY RHY	26-Jul-16	1.9	<0.0000050	7.56	0.176	50.3	0.000152	<0.00020	<0.00050	0.0678	<0.00020	0.0065	0.0002
FB-7 MU PY RHY	24-Aug-16	1.32	<0.0000050	2.96	0.102	25.5	0.000093	<0.00020	<0.00050	0.0377	<0.00020	0.00778	0.00011
FB-7 MU PY RHY	31-Aug-16	0.909	<0.0000050	1.22	0.0548	12	0.000042	<0.00020	<0.00050	0.0137	<0.00020	0.00622	<0.00010
FB-7 MU PY RHY	5-Oct-16	1.42	<0.0000050	2.83	0.113	26.9	0.00006	<0.00020	<0.00050	0.0557	<0.00020	0.0145	<0.00010
FB-12 PY AK RHYv (previously ID'd as RHY)	31-May-16	1.39	0.000022	5.34	0.113	22.4	0.000149	<0.00020	<0.00050	0.0263	<0.00020	0.0124	0.00081
FB-12 PY AK RHYv (previously ID'd as RHY)	26-Jul-16	1.45	0.000008	4.59	0.126	35.4	0.000157	<0.00020	<0.00050	0.0199	<0.00020	0.0315	0.00023
FB-12 PY AK RHYv (previously ID'd as RHY)	24-Aug-16	0.915	0.000036	2.2	0.0856	20.1	0.00013	<0.00020	<0.00050	0.0128	<0.00020	0.0285	0.0003
FB-12 PY AK RHYv (previously ID'd as RHY)	31-Aug-16	0.542	0.000013	0.993	0.0503	10.2	0.000058	<0.00020	<0.00050	0.00522	<0.00020	0.0196	0.00019
FB-12 PY AK RHYv (previously ID'd as RHY)	5-Oct-16	0.876	0.000005	3.23	0.112	27.9	0.000131	<0.00020	<0.00050	0.0244	<0.00020	0.0383	0.00034

APPENDIX K.
Global ARD Laboratory Certificates of Analysis for Static Data

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresses:	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

RESULTS		
Reported To:	**1**	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
cc:		N/A
Date Reported:		Version-1: Dec. 22, 2015 (Tuesday); V-2 (Sid. Corr. NP re-runs based on CaCO3 Equiv.): March 24, 2016 (Thursday); V-3 (Mod. Sobek NP): April 28, 2016 (Thursday).

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kdbergh@gmail.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
cc:	BMC Accounts (accounts@bmcminerals.com)
Global Invoice No:	Version-1: ARD1522-1215C; V-2 (Sid. Corr. NP re-runs based on CaCO3 Equiv.): ARD1522-0316B; Mod. Sobek NP: ARD1522-0416A.
Date Submitted:	Version-1: Dec. 22, 2015 (Tuesday); 2: Mar. 24, 2016 (Thursday); Mod. Sobek NP: to be invoice.

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

REPORTING	
Global Project No:	1522
Report Version:	Version-1: Final; V-2: 15 x Siderite NP re-runs based on CaCO3 Equiv.; V-3: Mod. Sobek NP.
Pages (Including Cover):	5
Report Title:	COA BMC-KZK (COC-1 x203 New 2015 Core Samples) - rec'd 23-Nov15
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

NOTES
All samples are stored at no charge for 90 days except on-going HCT head client samples.
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	BMC Sample ID	From	To	Hole ID and Interval	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)
1	B00264216	48	48.4	K15-200	Drill Core	3.10	Dry
2	B00264220	172.1	172.5	K15-200	Drill Core	2.68	Dry
3	B00264218	79.5	79.9	K15-200	Drill Core	2.93	Dry
4	B00264217	64.5	64.9	K15-200	Drill Core	2.62	Dry
5	B00264219	103.9	104.3	K15-200	Drill Core	2.58	Dry
6	B00264221	129	129.3	K15-200	Drill Core	2.38	Dry
7	B00264242	58.05	58.74	k15-204	Drill Core	3.22	Dry
8	B00264243	99.27	100.2	k15-204	Drill Core	2.78	Dry
9	B00264244	164.23	165	K15-206	Drill Core	3.38	Damp
10	B00264245	182.9	183.66	K15-206	Drill Core	2.14	Dry
11	B00264457	182.9	188.9	K15-206	Drill Core	2.88	Dry
12	B00264213	29.4	30.1	K15-207	Drill Core	3.04	Wet
13	B00264214	8.2	8.6	K15-207	Drill Core	2.08	Wet
14	B00264215	9	25	K15-207	Drill Core	2.68	Wet
15	B00264250	185.4	185.9	K15-216	Drill Core	3.64	Dry
16	B00264246	32.6	33	K15-216	Drill Core	3.04	Damp
17	B00264247	67	67.5	K15-216	Drill Core	3.80	Dry
18	B00264248	143.6	144.45	K15-216	Drill Core	2.90	Dry
19	B00264249	157.9	158.5	K15-216	Rock	2.74	Dry
20	B00264252	19.5	20	K15-226	Drill Core	2.96	Dry
21	B00264251	10.64	11	K15-226	Drill Core	3.32	Damp
22	B00264256	177.2	178.19	K15-226	Drill Core	3.08	Dry
23	B00264253	47.13	47.49	K15-226	Drill Core	2.82	Dry
24	B00264254	86.8	87.2	K15-226	Drill Core	3.20	Damp
25	B00264255	124.6	125.02	K15-226	Drill Core	3.02	Dry
26	B00264257	23	23.77	K15-227	Drill Core	2.94	Dry
27	B00264259	50.8	52.29	K15-227	Drill Core	3.10	Wet
28	B00264258	29.5	31.32	K15-227	Drill Core	2.98	Damp
29	B00264260	66.44	67.08	K15-232	Drill Core	2.96	Damp
30	B00264261	113	113.7	K15-232	Drill Core	2.92	Dry
31	B00264264	40.85	41.62	K15-233	Drill Core	3.30	Dry
32	B00264263	36.77	37.46	K15-233	Drill Core	2.96	Dry
33	B00264267	127.06	127.71	K15-233	Drill Core	2.98	Dry
34	B00264265	61.9	62.55	K15-233	Drill Core	3.04	Dry
35	B00264266	126.4	127.08	K15-233	Drill Core	2.96	Dry
36	B00264268	160.04	161	K15-233	Drill Core	2.96	Dry
37	B00264269	165	166.05	K15-233	Drill Core	3.08	Dry
38	B00264262	141.84	142.56	K15-235R	Drill Core	2.96	Dry
39	B00264270	22.7	23.4	K15-235R	Drill Core	3.18	Dry
40	B00264271	55.75	56.57	K15-235R	Drill Core	3.10	Dry
41	B00264275	90.64	91.62	K15-235R	Drill Core	3.08	Dry
42	B00264276	103.46	104.2	K15-235R	Drill Core	3.28	Dry
43	B00264272	64.16	64.91	K15-235R	Drill Core	2.96	Dry
44	B00264273	70	70.8	K15-235R	Drill Core	3.10	Dry

Sample Receipt Info:	
Date Samples Received:	Nov. 23, 2015 (Monday)
No. of Samples Received:	17
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Andrew Gault (agault@alexcoresource.com) By Email/COC.
Date:	Nov. 18, 2015 (Wednesday) Mod. Sobek NP: April 13, 2016 (Wednesday).

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	BMC Sample ID	From	To	Hole ID and Interval	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)
45	B00264274	76.79	77.63	K15-235R	Drill Core	3.02	Damp
46	B00264277	117.7	118.55	K15-235R	Drill Core	3.46	Dry
47	B00264278	122.56	123.33	K15-236	Drill Core	2.80	Wet
48	B00264280	36.43	36.85	K15-238	Drill Core	3.21	Dry
49	B00264279	11.77	12.14	K15-238	Drill Core	2.90	Dry
50	B00264282	77.09	77.5	K15-238	Drill Core	3.36	Dry
51	B00264281	70.62	71	K15-238	Drill Core	3.12	Dry
52	B00264283	117.44	117.52	K15-238	Dry	3.18	Wet
53	B00264284	153.52	153.78	K15-238	Drill Core	2.98	Dry
54	B00264286	89.9	90.58	K15-239	Drill Core	3.04	Dry
55	B00264285	68.91	70	K15-239	Drill Core	2.98	Dry
56	B00264287	9.74	10.3	K15-240	Drill Core	2.94	Dry
57	B00264288	10.3	11	K15-240	Drill Core	3.02	Dry
58	B00264289	17.63	18.36	K15-240	Drill Core	3.04	Dry
59	B00264290	18.36	19	K15-240	Drill Core	2.96	Dry
60	B00264291	19	19.7	K15-240	Drill Core	3.02	Dry
61	B00264292	26.25	27	K15-240	Drill Core	3.22	Dry
62	B00264293	27	27.75	K15-240	Drill Core	3.30	Dry
63	B00264294	37.36	38.09	K15-240	Drill Core	3.20	Dry
64	B00264295	39.65	40.35	K15-240	Drill Core	3.08	Dry
65	B00264296	23.6	24.3	K15-242	Drill Core	3.04	Dry
66	B00264297	31	32	K15-242	Drill Core	2.70	Dry
67	B00264301	117.25	119.9	K15-242	Drill Core	2.94	Wet
68	B00264302	120.25	122	K15-242	Drill Core	3.28	Wet
69	B00264298	78.69	79.49	K15-242	Drill Core	3.01	Wet
70	B00264299	86.73	87.69	K15-242	Drill Core	3.02	Wet
71	B00264300	90	91.78	K15-242	Drill Core	3.08	Wet
72	B00264304	77.7	78.12	K15-243	Drill Core	3.30	Dry
73	B00264305	83	83.42	K15-243	Drill Core	3.02	Damp
74	B00264306	86	86.37	K15-243	Drill Core	2.92	Damp
75	B00264303	40.21	40.53	K15-243	Drill Core	3.04	Dry
76	B00264309	192	192.4	K15-243	Drill Core	2.98	Dry
77	B00264310	198	198.39	K15-243	Drill Core	2.74	Dry
78	B00264307	111.89	112.29	K15-243	Drill Core	2.98	Dry
79	B00264308	139.73	140.13	K15-243	Drill Core	3.26	Dry
80	B00264311	21	21.75	K15-244	Drill Core	3.08	Dry
81	B00264315	87	87.73	K15-244	Drill Core	3.32	Damp
82	B00264313	52.66	53.6	K15-244	Drill Core	3.14	Dry
83	B00264312	38	38.77	K15-244	Drill Core	3.24	Dry
84	B00264314	69.1	71.35	K15-244	Drill Core	3.24	Dry
85	B00264316	6.72	7.12	K15-246	Drill Core	3.14	Dry
86	B00264317	12.6	12.95	K15-246	Drill Core	3.18	Dry
87	B00264318	24.6	24.95	K15-246	Drill Core	2.90	Dry
88	B00264319	62.5	63.05	K15-246	Drill Core	3.44	Dry

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	BMC Sample ID	From	To	Hole ID and Interval	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)
89	B00264320	66	66.35	K15-246	Drill Core	2.92	Dry
90	B00264323	96.79	97.5	K15-250	Drill Core	2.94	Damp
91	B00264322	101	101.75	K15-250	Drill Core	3.24	Dry
92	B00264321	48.94	49.7	K15-250	Drill Core	3.22	Dry
93	B00264324	55.5	67.51	K15-250	Drill Core	3.21	Dry
94	B00264325	22.6	23.1	K15-256	Drill Core	3.40	Damp
95	B00264326	22.6	32	K15-256	Drill Core	3.10	Dry
96	B00264458	132.1	158.53	K15-257	Drill Core	2.98	Dry
97	B00264327	19.1	20.8	K15-259	Drill Core	3.22	Dry
98	B00264328	24.6	25.3	K15-259	Drill Core	3.38	Dry
99	B00264329	26	29	K15-259	Drill Core	3.36	Dry
100	B00264330	29.5	30.2	K15-259	Drill Core	2.92	Damp
101	B00264331	33	34.7	K15-259	Drill Core	2.92	Damp
102	B00264332	46	48.75	K15-259	Drill Core	3.22	Wet
103	B00264335	8.7	9.05	K15-260	Drill Core	2.74	Dry
104	B00264334	87.02	87.4	K15-260	Drill Core	2.96	Damp
105	B00264333	95.6	95.98	K15-260	Drill Core	3.02	Dry
106	B00264336	216.65	217.35	K15-263	Drill Core	2.98	Damp
107	B00264337	193.85	194.9	K15-263	Drill Core	3.14	Damp
108	B00264338	169.2	169.9	K15-263	Drill Core	3.08	Wet
109	B00264339	36.7	37.08	K15-264	Drill Core	3.12	Damp
110	B00264345	167.3	168.2	K15-264	Drill Core	3.60	Wet
111	B00264340	40	40.46	K15-264	Drill Core	2.96	Damp
112	B00264341	84.75	85.15	K15-264	Drill Core	3.22	Dry
113	B00264342	94.38	94.7	K15-264	Drill Core	3.12	Dry
114	B00264343	100.6	101	K15-264	Drill Core	2.94	Dry
115	B00264344	110	110.37	K15-264	Drill Core	2.80	Dry
116	B00264346	199.4	200.9	K15-265	Drill Core	2.80	Damp
117	B00264347	63.5	64.2	K15-267	Drill Core	2.96	Damp
118	B00264350	84.3	84.71	K15-270	Drill Core	3.04	Damp
119	B00264351	103.6	104	K15-270	Drill Core	3.02	Wet
120	B00264349	48.3	48.6	K15-270	Drill Core	3.18	Damp
121	B00264348	37.4	37.8	K15-270	Drill Core	2.98	Dry
122	B00264357	111.8	112.4	K15-272	Drill Core	2.94	Wet
123	B00264358	119	119.72	K15-272	Drill Core	3.22	Wet
124	B00264354	54.5	56	K15-272	Drill Core	2.98	Damp
125	B00264355	57.3	59	K15-272	Drill Core	3.32	Dry
126	B00264356	60	62	K15-272	Drill Core	3.36	Damp
127	B00264352	16.1	16.8	K15-272	Drill Core	2.58	Damp
128	B00264353	20.5	21.15	K15-272	Drill Core	2.56	Damp
129	B00264360	41.73	42.13	k15-278	Drill Core	3.20	Dry
130	B00264361	45.5	45.83	k15-278	Drill Core	2.76	Dry
131	B00264362	50	50.4	k15-278	Drill Core	3.20	Dry
132	B00264363	55	55.39	k15-278	Drill Core	3.12	Dry

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	BMC Sample ID	From	To	Hole ID and Interval	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)
133	B00264359	23.87	24.27	k15-278	Drill Core	2.94	Dry
134	B00264364	96.47	96.83	k15-278	Drill Core	3.14	Dry
135	B00264365	112.08	112.46	k15-278	Drill Core	3.06	Dry
136	B00264367	48.7	49.27	K15-279	Drill Core	2.64	Dry
137	B00264366	60	60.7	K15-279	Drill Core	3.10	Dry
138	B00264376	53.6	54	k15-281	Drill Core	3.04	Dry
139	B00264375	60.02	60.38	k15-281	Drill Core	2.86	Dry
140	B00264374	67.07	67.44	k15-281	Drill Core	2.92	Damp
141	B00264373	80.71	81.08	k15-281	Drill Core	2.90	Damp
142	B00264372	92.92	93.29	k15-281	Drill Core	2.98	Dry
143	B00264371	95	95.38	k15-281	Drill Core	3.06	Dry
144	B00264370	99	99.38	k15-281	Drill Core	3.18	Dry
145	B00264369	101	101.4	k15-281	Drill Core	3.12	Dry
146	B00264368	108.5	108.91	k15-281	Drill Core	3.04	Dry
147	B00264456	27.32	27.66	K15-283	Drill Core	2.70	Dry
148	B00264455	32	32.36	K15-283	Drill Core	2.78	Dry
149	B00264454	121.44	121.81	K15-283	Drill Core	2.94	Dry
150	B00264453	125	125.35	K15-283	Drill Core	2.86	Dry
151	B00264452	142	142.43	K15-283	Drill Core	3.54	Dry
152	B00264444	212.5	212.95	k15-284	Drill Core	3.40	Dry
153	B00264451	34.01	34.41	k15-284	Drill Core	3.44	Dry
154	B00264445	201.73	202.07	k15-284	Drill Core	2.90	Dry
155	B00264443	218	218.37	K15-284	Drill Core	2.92	Dry
156	B00264450	60.82	61.21	K15-284	Drill Core	3.10	Dry
157	B00264448	74.46	74.82	K15-284	Drill Core	2.88	Dry
158	B00264449	66.02	66.42	K15-284	Drill Core	3.10	Dry
159	B00264447	128.97	129.35	K15-284	Drill Core	3.12	Dry
160	B00264446	132.95	133.36	K15-284	Drill Core	3.20	Dry
161	B00264459	132.95	149.9	K15-284	Drill Core	2.76	Dry
162	B00264442	71.75	72.44	K15-286	Drill Core	3.20	Dry
163	B00264440	63	63.67	K15-286	Drill Core	3.04	Dry
164	B00264441	67	67.69	K15-286	Drill Core	2.96	Dry
165	B00264439	40.59	42.38	K15-287	Drill Core	2.98	Dry
166	B00264431	12	12.7	K15-290	Drill Core	2.90	Dry
167	B00264432	12.7	13.43	K15-290	Drill Core	3.10	Dry
168	B00264433	21	22	K15-290	Drill Core	2.92	Dry
169	B00264434	24	25.1	K15-290	Drill Core	3.04	Dry
170	B00264437	105	105.7	K15-290	Drill Core	3.20	Dry
171	B00264438	113.06	113.7	K15-290	Drill Core	2.88	Dry
172	B00264435	30.85	31.8	K15-290	Drill Core	3.80	Dry
173	B00264436	42	42.92	K15-290	Drill Core	2.96	Dry
174	B00264417	206	206.63	K15-291	Drill Core	2.76	Dry
175	B00264430	46	46.65	K15-291	Drill Core	2.96	Dry
176	B00264429	63.95	64.61	K15-291	Drill Core	2.96	Dry

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

GLOBAL PROJECT NO: 1522

CLIENT: BMC MINERALS (No.1) LTD.

CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03

REPORT VERSION: 3

S. No.	BMC Sample ID	From	To	Hole ID and Interval	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)
177	B00264428	71.15	71.81	K15-291	Drill Core	2.94	Dry
178	B00264427	78.88	79.56	K15-291	Drill Core	3.10	Dry
179	B00264424	95	95.7	K15-291	Drill Core	3.12	Dry
180	B00264423	98	98.7	K15-291	Drill Core	3.22	Dry
181	B00264422	115	115.65	K15-291	Drill Core	2.98	Dry
182	B00264421	160.38	161.05	K15-291	Drill Core	2.94	Dry
183	B00264420	162	162.63	K15-291	Drill Core	2.76	Dry
184	B00264419	165.5	166.17	K15-291	Drill Core	2.92	Dry
185	B00264418	169	169.64	K15-291	Drill Core	2.92	Dry
186	B00264426	83.66	84.31	K15-291	Drill Core	2.94	Dry
187	B00264425	83	83.66	K15-291	Drill Core	3.02	Dry
188	B00264413	80.65	81.26	K15-295	Drill Core	2.72	Dry
189	B00264411	33.55	34.19	K15-295	Drill Core	2.78	Dry
190	B00264412	40	40.67	K15-295	Drill Core	3.02	Dry
191	B00264415	157.63	158.35	K15-295	Drill Core	3.32	Dry
192	B00264416	164.5	165.3	K15-295	Drill Core	3.04	Dry
193	B00264414	149.53	150.53	K15-295	Drill Core	3.18	Dry
194	B00264410	201	201.45	K15-297	Drill Core	3.56	Dry
195	B00264409	77.62	78.32	K15-299	Drill Core	3.10	Dry
196	B00264406	22.7	23.46	K15-299	Drill Core	2.96	Dry
197	B00264407	29	29.65	K15-299	Drill Core	2.88	Dry
198	B00264408	57.6	58.3	K15-299	Drill Core	3.20	Dry
199	B00264401	21.61	22.19	K15-301	Drill Core	3.12	Dry
200	B00264402	42	42.64	K15-301	Drill Core	2.78	Dry
201	B00264403	66.7	67.53	K15-301	Drill Core	3.28	Damp
202	B00264404	62.52	63.24	K15-301	Drill Core	3.08	Dry
203	B00264405	107	108.15	K15-301	Drill Core	3.10	Dry

Total wt. of sample rec'd (kg): **616.86**

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522

CLIENT: BMC MINERALS (No.1) LTD.

CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03

REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents[*1]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur[*2]	AP[*3]	Siderite Corrected NP	NNP[*4]	NPR[*5]	Mod. ABA NP
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne				kg CaCO3/tonne
	Reported Detection Limit:	*0.01*		*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*			*0.5*
1	B00264216	9.0	Strong	0.83	69.2	0.55	<0.01	0.55	17.2	90.9	73.7	5.3	71.9
2	B00264220	9.2	Strong	1.55	129.2	0.02	0.02	0.00	0.0	240.8	240.8	N/A	142.2
3	B00264218	8.7	Moderate	0.28	23.3	2.23	<0.01	2.23	69.7	34.4	-35.3	0.5	32.6
4	B00264217	9.1	Strong	0.61	50.8	0.09	<0.01	0.09	2.8	50.4	47.6	17.9	52.9
5	B00264219	9.1	Moderate	1.20	100.0	4.41	0.02	4.39	137.2	121.6	-15.6	0.9	122.8
6	B00264221	9.3	None	0.05	4.2	0.86	<0.01	0.86	26.9	6.7	-20.2	0.2	5.7
7	B00264242	9.1	None	0.08	6.7	1.16	<0.01	1.16	36.3	6.0	-30.3	0.2	4.7
8	B00264243	9.3	Moderate	1.13	94.2	0.25	<0.01	0.25	7.8	88.5	80.7	11.3	89.2
9	B00264244	9.2	None	0.06	5.0	0.80	<0.01	0.80	25.0	9.8	-15.2	0.4	8.8
10	B00264245	8.9	Moderate	1.40	116.7	2.81	0.02	2.79	87.2	192.9	105.7	2.2	140.5
11	B00264457	9.5	Moderate	1.25	104.2	0.01	<0.01	0.01	0.3	100.7	100.4	322.2	96.1
12	B00264213	8.9	Strong	1.61	134.2	0.66	<0.01	0.66	20.6	170.8	150.2	8.3	144.3
13	B00264214	9.1	Slight	<0.02	<1.7	1.02	<0.01	1.02	31.9	0.5	-31.4	0.0	2.1
14	B00264215	9.1	Strong	0.59	49.2	0.74	<0.01	0.74	23.1	79.9	56.8	3.5	62.4
15	B00264250	9.3	Strong	3.26	271.7	0.05	<0.01	0.05	1.6	303.4	301.8	194.2	272.8
16	B00264246	9.1	Moderate	0.74	61.7	0.60	0.02	0.58	18.1	92.1	74.0	5.1	68.0
17	B00264247	9.2	Moderate	0.63	52.5	0.18	0.02	0.16	5.0	72.5	67.5	14.5	52.5
18	B00264248	7.8	None	<0.02	<1.7	4.72	0.02	4.70	146.9	1.3	-145.6	0.0	0.2
19	B00264249	7.9	Slight	0.20	16.7	3.44	0.03	3.41	106.6	30.3	-76.3	0.3	28.2
20	B00264252	9.1	Moderate	0.61	50.8	1.01	0.02	0.99	30.9	87.2	56.3	2.8	68.1
21	B00264251	9.1	Slight	0.21	17.5	0.93	<0.01	0.93	29.1	27.7	-1.4	1.0	22.6
22	B00264256	9.0	Strong	2.10	175.0	0.02	<0.01	0.02	0.6	276.4	275.8	442.2	181.0
23	B00264253	8.8	Moderate	0.69	57.5	0.46	0.02	0.44	13.8	76.2	62.5	5.5	58.5
24	B00264254	9.3	Moderate	0.52	43.3	0.51	0.02	0.49	15.3	65.7	50.4	4.3	52.1
25	B00264255	9.1	Moderate	0.44	36.7	0.13	<0.01	0.13	4.1	59.0	54.9	14.5	39.5
26	B00264257	9.3	Strong	1.23	102.5	1.55	<0.01	1.55	48.4	137.6	89.2	2.8	113.7
27	B00264259	9.1	Strong	2.30	191.7	<0.01	<0.01	<0.01	<0.3	296.1	296.1	N/A	195.9
28	B00264258	9.2	Strong	0.70	58.3	0.32	<0.01	0.32	10.0	84.8	74.8	8.5	64.1
29	B00264260	9.2	Strong	0.93	77.5	0.43	0.02	0.41	12.8	106.9	94.1	8.3	77.2
30	B00264261	9.1	Moderate	0.21	17.5	3.58	0.02	3.56	111.3	50.4	-60.9	0.5	33.5
31	B00264264	8.6	Strong	0.84	70.0	1.11	0.03	1.08	33.8	145.9	112.2	4.3	83.7
32	B00264263	9.1	Moderate	0.39	32.5	0.54	0.02	0.52	16.3	54.4	38.2	3.3	37.7
33	B00264267	9.1	Moderate	0.81	67.5	1.34	0.02	1.32	41.3	75.6	34.4	1.8	67.2
34	B00264265	9.1	Moderate	1.01	84.2	0.60	0.02	0.58	18.1	90.3	72.2	5.0	76.1
35	B00264266	9.0	Moderate	0.40	33.3	3.97	<0.01	3.97	124.1	51.9	-72.2	0.4	44.2
36	B00264268	9.0	None	<0.02	<1.7	1.35	<0.01	1.35	42.2	4.3	-37.9	0.1	4.5
37	B00264269	9.4	Strong	1.42	118.3	0.05	<0.01	0.05	1.6	164.6	163.0	105.3	108.1
38	B00264262	9.5	Strong	1.25	104.2	0.04	0.02	0.02	0.6	285.0	284.4	456.0	121.0
39	B00264270	9.3	Strong	0.71	59.2	0.38	0.02	0.36	11.3	119.2	108.0	10.6	61.9
40	B00264271	9.3	Moderate	1.00	83.3	1.02	0.02	1.00	31.3	97.7	66.5	3.1	85.6
41	B00264275	9.4	Slight	0.02	1.7	0.34	0.02	0.32	10.0	23.8	13.8	2.4	10.0
42	B00264276	9.4	Slight	0.04	3.3	1.24	0.02	1.22	38.1	27.5	-10.6	0.7	12.7

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents[*1]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur[*2]	AP[*3]	Siderite Corrected NP	NNP[*4]	NPR[*5]	Mod. ABA NP
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne				kg CaCO3/tonne
	Reported Detection Limit:	*0.01*		*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*			*0.5*
43	B00264272	9.7	Moderate	0.71	59.2	0.25	<0.01	0.25	7.8	75.6	67.8	9.7	62.3
44	B00264273	9.8	Moderate	0.55	45.8	0.28	<0.01	0.28	8.8	74.3	65.6	8.5	53.7
45	B00264274	9.5	None	<0.02	<1.7	0.62	0.02	0.60	18.8	4.5	-14.3	0.2	3.8
46	B00264277	9.4	Strong	0.98	81.7	0.15	<0.01	0.15	4.7	204.9	200.2	43.7	91.9
47	B00264278	9.2	Strong	3.54	295.0	0.30	<0.01	0.30	9.4	360.0	350.6	38.4	294.8
48	B00264280	9.5	Moderate	0.38	31.7	0.04	<0.01	0.04	1.3	46.7	45.5	37.4	36.8
49	B00264279	9.4	Strong	0.64	53.3	0.49	0.02	0.47	14.7	93.4	78.7	6.4	75.0
50	B00264282	9.4	Strong	1.16	96.7	0.09	<0.01	0.09	2.8	127.8	125.0	45.4	83.3
51	B00264281	9.3	Strong	0.99	82.5	0.22	0.02	0.20	6.3	127.8	121.6	20.4	80.3
52	B00264283	9.1	Moderate	0.20	16.7	0.85	<0.01	0.85	26.6	42.4	15.8	1.6	29.6
53	B00264284	8.8	Moderate	0.68	56.7	0.72	<0.01	0.72	22.5	77.4	54.9	3.4	66.3
54	B00264286	9.6	Slight	0.19	15.8	1.48	<0.01	1.48	46.3	25.6	-20.7	0.6	24.6
55	B00264285	9.4	Slight	0.16	13.3	1.05	<0.01	1.05	32.8	24.6	-8.2	0.7	21.6
56	B00264287	9.4	None	<0.02	<1.7	0.27	<0.01	0.27	8.4	0.8	-7.6	0.1	1.7
57	B00264288	8.6	None	<0.02	<1.7	1.87	<0.01	1.87	58.4	1.8	-56.6	0.0	1.5
58	B00264289	9.1	Moderate	0.27	22.5	3.56	<0.01	3.56	111.3	57.4	-53.9	0.5	38.6
59	B00264290	9.3	Moderate	0.44	36.7	0.79	<0.01	0.79	24.7	55.6	30.9	2.3	43.9
60	B00264291	9.0	Moderate	0.41	34.2	2.09	<0.01	2.09	65.3	56.5	-8.8	0.9	49.1
61	B00264292	9.5	Slight	0.12	10.0	0.71	<0.01	0.71	22.2	22.5	0.3	1.0	18.1
62	B00264293	9.4	Slight	0.24	20.0	0.72	<0.01	0.72	22.5	32.7	10.2	1.5	28.1
63	B00264294	9.6	Slight	0.10	8.3	1.00	<0.01	1.00	31.3	16.6	-14.7	0.5	10.4
64	B00264295	9.7	Moderate	0.33	27.5	1.33	<0.01	1.33	41.6	47.9	6.3	1.2	37.4
65	B00264296	9.7	Moderate	0.44	36.7	<0.01	<0.01	<0.01	<0.3	42.3	42.3	N/A	35.9
66	B00264297	9.5	Strong	0.29	24.2	0.51	<0.01	0.51	15.9	70.9	55.0	4.4	39.0
67	B00264301	9.5	Slight	0.11	9.2	0.95	<0.01	0.95	29.7	18.5	-11.2	0.6	14.4
68	B00264302	9.5	Strong	0.20	16.7	0.58	<0.01	0.58	18.1	39.2	21.1	2.2	26.9
69	B00264298	8.5	Moderate	0.15	12.5	1.61	0.03	1.58	49.4	28.6	-20.8	0.6	16.9
70	B00264299	9.2	None	<0.02	<1.7	0.90	<0.01	0.90	28.1	6.1	-22.0	0.2	4.0
71	B00264300	9.3	Strong	0.91	75.8	0.16	0.02	0.14	4.4	100.7	96.3	23.0	75.7
72	B00264304	9.5	Strong	0.58	48.3	0.02	<0.01	0.02	0.6	45.4	44.8	72.6	44.7
73	B00264305	9.6	Moderate	0.19	15.8	0.07	<0.01	0.07	2.2	40.4	38.2	18.5	21.2
74	B00264306	9.4	Strong	0.99	82.5	0.12	0.02	0.10	3.1	103.2	100.1	33.0	74.3
75	B00264303	9.5	Strong	0.73	60.8	0.07	0.02	0.05	1.6	118.2	116.6	75.6	63.4
76	B00264309	8.8	Strong	1.91	159.2	<0.01	0.01	<0.01	<0.3	247.5	247.5	N/A	164.6
77	B00264310	9.9	Strong	3.12	260.0	0.01	0.01	0.00	0.0	342.0	342.0	N/A	262.6
78	B00264307	9.6	Strong	0.45	37.5	0.37	<0.01	0.37	11.6	76.5	64.9	6.6	42.3
79	B00264308	9.5	Strong	2.12	176.7	0.34	<0.01	0.34	10.6	67.8	57.2	6.4	154.5
80	B00264311	9.6	Strong	0.62	51.7	0.88	<0.01	0.88	27.5	84.9	57.4	3.1	59.8
81	B00264315	9.3	Strong	2.84	236.7	0.05	0.02	0.03	0.9	325.9	325.0	347.6	235.9
82	B00264313	9.6	None	0.02	1.7	0.53	<0.01	0.53	16.6	4.5	-12.1	0.3	7.4
83	B00264312	9.6	Moderate	0.99	82.5	1.01	<0.01	1.01	31.6	91.4	59.8	2.9	82.0
84	B00264314	9.7	Strong	0.75	62.5	0.27	<0.01	0.27	8.4	98.6	90.2	11.7	73.8

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Siderite Corrected NP	NNP*4	NPR*5	Mod. ABA NP
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne				kg CaCO3/tonne
	Reported Detection Limit:	*0.01*		*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*			*0.5*
85	B00264316	9.4	Moderate	0.49	40.8	0.01	<0.01	0.01	0.3	173.5	173.2	555.2	42.6
86	B00264317	9.2	Strong	2.21	184.2	0.21	0.03	0.18	5.6	194.0	188.4	34.5	159.0
87	B00264318	9.4	Strong	1.14	95.0	0.26	0.02	0.24	7.5	126.9	119.4	16.9	94.7
88	B00264319	9.2	Strong	0.94	78.3	2.43	0.02	2.41	75.3	128.7	53.4	1.7	100.5
89	B00264320	8.8	Strong	1.34	111.7	1.75	0.02	1.73	54.1	156.7	102.6	2.9	116.6
90	B00264323	9.6	Strong	0.54	45.0	0.01	<0.01	0.01	0.3	88.3	88.0	282.6	54.2
91	B00264322	9.3	Moderate	0.64	53.3	0.02	<0.01	0.02	0.6	55.3	54.7	88.5	44.7
92	B00264321	9.7	Moderate	0.20	16.7	<0.01	<0.01	<0.01	<0.3	36.1	36.1	N/A	20.1
93	B00264324	9.3	Strong	1.26	105.0	0.28	<0.01	0.28	8.8	142.1	133.4	16.2	98.7
94	B00264325	8.8	Strong	5.10	425.0	0.24	0.02	0.22	6.9	447.1	440.2	65.0	392.0
95	B00264326	9.0	None	<0.02	<1.7	0.01	0.01	0.00	0.0	24.2	24.2	N/A	15.8
96	B00264458	9.7	Moderate	0.52	43.3	0.10	<0.01	0.10	3.1	57.8	54.7	18.5	46.4
97	B00264327	9.1	Moderate	1.39	115.8	0.75	0.02	0.73	22.8	121.0	98.2	5.3	110.1
98	B00264328	9.5	Moderate	0.25	20.8	1.01	0.02	0.99	30.9	52.5	21.6	1.7	33.1
99	B00264329	9.3	Moderate	0.43	35.8	2.25	0.02	2.23	69.7	69.7	0.0	1.0	52.8
100	B00264330	9.1	None	<0.02	<1.7	0.78	<0.01	0.78	24.4	5.6	-18.8	0.2	2.5
101	B00264331	9.5	Moderate	0.41	34.2	0.78	<0.01	0.78	24.4	53.5	29.1	2.2	37.4
102	B00264332	8.4	Moderate	0.79	65.8	2.39	0.02	2.37	74.1	95.8	21.7	1.3	73.1
103	B00264335	9.5	Moderate	0.58	48.3	0.02	<0.01	0.02	0.6	63.4	62.8	101.4	46.8
104	B00264334	9.2	Strong	0.39	32.5	0.67	<0.01	0.67	20.9	79.6	58.7	3.8	42.5
105	B00264333	9.2	Moderate	0.32	26.7	3.08	<0.01	3.08	96.3	61.6	-34.7	0.6	45.7
106	B00264336	9.5	Moderate	0.46	38.3	1.19	<0.01	1.19	37.2	67.8	30.6	1.8	44.6
107	B00264337	9.2	Moderate	0.54	45.0	1.12	<0.01	1.12	35.0	65.3	30.3	1.9	51.1
108	B00264338	9.3	Moderate	0.72	60.0	0.59	<0.01	0.59	18.4	61.6	43.2	3.3	52.6
109	B00264339	9.2	Strong	4.90	408.3	<0.01	0.01	<0.01	<0.3	336.4	336.4	N/A	242.8
110	B00264345	9.4	Strong	1.83	152.5	0.06	0.02	0.04	1.3	216.4	215.2	173.1	141.3
111	B00264340	9.5	Strong	0.69	57.5	0.17	0.02	0.15	4.7	80.8	76.1	17.2	62.3
112	B00264341	9.4	Moderate	0.63	52.5	0.74	<0.01	0.74	23.1	67.8	44.7	2.9	55.9
113	B00264342	9.7	Moderate	0.73	60.8	0.28	<0.01	0.28	8.8	64.1	55.4	7.3	57.1
114	B00264343	9.1	Moderate	0.87	72.5	0.85	0.02	0.83	25.9	90.8	64.9	3.5	74.0
115	B00264344	9.5	Moderate	1.05	87.5	0.22	<0.01	0.22	6.9	93.3	86.4	13.6	84.4
116	B00264346	8.9	Strong	0.60	50.0	2.11	<0.01	2.11	65.9	92.0	26.1	1.4	62.6
117	B00264347	9.2	Strong	0.37	30.8	0.05	0.02	0.03	0.9	47.3	46.4	50.5	34.9
118	B00264350	9.1	Strong	0.43	35.8	0.56	0.02	0.54	16.9	69.0	52.1	4.1	44.8
119	B00264351	9.3	Moderate	0.36	30.0	0.51	<0.01	0.51	15.9	42.3	26.4	2.7	33.5
120	B00264349	9.1	Strong	0.91	75.8	0.46	0.03	0.43	13.4	134.3	120.9	10.0	89.5
121	B00264348	9.1	Strong	0.59	49.2	0.26	0.02	0.24	7.5	74.8	67.3	10.0	54.4
122	B00264357	9.8	Strong	3.01	250.8	0.15	0.02	0.13	4.1	354.1	350.0	87.2	246.1
123	B00264358	9.7	Strong	0.84	70.0	0.16	<0.01	0.16	5.0	99.8	94.8	20.0	75.3
124	B00264354	9.0	Moderate	0.12	10.0	4.93	<0.01	4.93	154.1	27.7	-126.4	0.2	18.9
125	B00264355	9.0	None	0.02	1.7	2.13	<0.01	2.13	66.6	7.5	-59.1	0.1	5.2
126	B00264356	9.8	Moderate	0.56	46.7	1.75	<0.01	1.75	54.7	61.1	6.4	1.1	51.4

Global
ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents[*1]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur[*2]	AP[*3]	Siderite Corrected NP	NNP[*4]	NPR[*5]	Mod. ABA NP
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne				kg CaCO3/tonne
	Reported Detection Limit:	*0.01*		*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*			*0.5*
127	B00264352	8.9	None	0.02	1.7	1.43	<0.01	1.43	44.7	3.8	-40.9	0.1	2.3
128	B00264353	9.5	Slight	0.08	6.7	0.82	<0.01	0.82	25.6	11.7	-13.9	0.5	9.3
129	B00264360	9.7	Slight	0.53	44.2	2.59	0.03	2.56	80.0	65.6	-14.4	0.8	50.7
130	B00264361	9.7	Moderate	0.35	29.2	0.13	0.04	0.09	2.8	36.2	33.4	12.9	29.9
131	B00264362	9.7	Strong	0.65	54.2	0.40	0.03	0.37	11.6	97.3	85.7	8.4	64.8
132	B00264363	9.5	Strong	0.81	67.5	0.47	0.02	0.45	14.1	137.2	123.1	9.8	85.0
133	B00264359	9.7	Moderate	0.41	34.2	0.73	<0.01	0.73	22.8	58.6	35.8	2.6	44.6
134	B00264364	9.1	Strong	1.54	128.3	0.14	<0.01	0.14	4.4	172.1	167.7	39.3	123.8
135	B00264365	9.3	Moderate	0.80	66.7	0.85	<0.01	0.85	26.6	76.7	50.1	2.9	69.9
136	B00264367	9.7	Moderate	0.44	36.7	0.61	<0.01	0.61	19.1	56.1	37.0	2.9	44.7
137	B00264366	10.0	Moderate	0.60	50.0	0.26	<0.01	0.26	8.1	63.0	54.9	7.8	53.3
138	B00264376	9.3	Moderate	0.80	66.7	1.11	0.02	1.09	34.1	93.5	59.4	2.7	82.9
139	B00264375	9.6	Strong	0.82	68.3	0.27	<0.01	0.27	8.4	124.7	116.3	14.8	71.9
140	B00264374	9.7	Strong	0.96	80.0	0.02	<0.01	0.02	0.6	108.5	107.9	173.6	74.4
141	B00264373	9.6	Moderate	0.59	49.2	2.41	0.02	2.39	74.7	81.0	6.3	1.1	72.6
142	B00264372	9.7	Strong	0.59	49.2	1.11	0.02	1.09	34.1	92.3	58.2	2.7	64.4
143	B00264371	9.5	Strong	1.19	99.2	0.48	0.02	0.46	14.4	125.9	111.5	8.8	96.9
144	B00264370	9.7	Strong	0.68	56.7	1.35	0.02	1.33	41.6	97.3	55.7	2.3	74.4
145	B00264369	9.7	Moderate	0.59	49.2	1.19	<0.01	1.19	37.2	71.1	33.9	1.9	65.4
146	B00264368	9.8	Moderate	0.18	15.0	0.39	<0.01	0.39	12.2	31.2	19.0	2.6	23.6
147	B00264456	8.8	Moderate	0.33	27.5	1.13	<0.01	1.13	35.3	46.8	11.5	1.3	31.9
148	B00264455	8.7	Moderate	0.62	51.7	1.21	0.02	1.19	37.2	60.5	23.3	1.6	49.2
149	B00264454	8.4	Slight	0.07	5.8	0.06	<0.01	0.06	1.9	27.4	25.5	14.6	1.1
150	B00264453	9.3	None	0.04	3.3	0.17	<0.01	0.17	5.3	13.1	7.8	2.5	7.2
151	B00264452	8.6	Moderate	1.89	157.5	0.04	0.02	0.02	0.6	138.7	138.1	221.9	127.3
152	B00264444	10.0	Slight	0.09	7.5	0.64	<0.01	0.64	20.0	14.0	-6.0	0.7	10.6
153	B00264451	9.1	Moderate	0.24	20.0	0.91	<0.01	0.91	28.4	47.9	19.5	1.7	30.2
154	B00264445	9.4	Strong	1.23	102.5	<0.01	0.01	<0.01	<0.3	225.7	225.7	N/A	106.8
155	B00264443	9.4	Strong	2.28	190.0	0.05	<0.01	0.05	1.6	214.6	213.0	137.3	187.8
156	B00264450	9.3	Moderate	0.51	42.5	0.70	0.02	0.68	21.3	67.2	46.0	3.2	49.7
157	B00264448	9.6	Strong	0.95	79.2	0.97	0.02	0.95	29.7	138.7	109.0	4.7	90.4
158	B00264449	9.7	Moderate	1.06	88.3	0.30	<0.01	0.30	9.4	92.0	82.6	9.8	78.4
159	B00264447	9.0	Strong	1.16	96.7	0.46	<0.01	0.46	14.4	164.2	149.8	11.4	99.0
160	B00264446	9.6	Moderate	0.15	12.5	0.59	<0.01	0.59	18.4	36.7	18.3	2.0	17.6
161	B00264459	9.2	Moderate	0.30	25.0	2.20	<0.01	2.20	68.8	44.2	-24.6	0.6	35.9
162	B00264442	9.4	Strong	1.36	113.3	1.33	<0.01	1.33	41.6	149.3	107.7	3.6	104.9
163	B00264440	9.1	Slight	0.13	10.8	2.09	<0.01	2.09	65.3	16.6	-48.7	0.3	17.2
164	B00264441	9.6	Moderate	0.39	32.5	0.35	<0.01	0.35	10.9	60.9	50.0	5.6	38.7
165	B00264439	8.3	None	0.06	5.0	1.41	0.02	1.39	43.4	14.7	-28.7	0.3	10.0
166	B00264431	9.5	Strong	0.30	25.0	0.24	<0.01	0.24	7.5	70.3	62.8	9.4	32.1
167	B00264432	9.6	Strong	0.85	70.8	0.08	<0.01	0.08	2.5	139.3	136.8	55.7	81.7
168	B00264433	9.7	Moderate	0.51	42.5	0.10	<0.01	0.10	3.1	55.0	51.9	17.6	43.2

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Siderite Corrected NP	NNP*4	NPR*5	Mod. ABA NP
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne				kg CaCO3/tonne
	Reported Detection Limit:	*0.01*		*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*			*0.5*
169	B00264434	9.7	Moderate	0.57	47.5	0.07	<0.01	0.07	2.2	57.2	55.0	26.1	45.5
170	B00264437	9.1	Strong	2.01	167.5	0.04	<0.01	0.04	1.3	265.5	264.3	212.4	171.9
171	B00264438	8.7	Strong	1.78	148.3	0.01	0.01	0.00	0.0	291.7	291.7	N/A	154.2
172	B00264435	9.8	Moderate	0.96	80.0	0.58	<0.01	0.58	18.1	86.8	68.7	4.8	77.4
173	B00264436	9.3	Slight	0.10	8.3	0.18	<0.01	0.18	5.6	26.1	20.5	4.6	14.8
174	B00264417	9.5	None	0.05	4.2	1.34	0.02	1.32	41.3	9.6	-31.7	0.2	5.5
175	B00264430	9.2	Strong	1.94	161.7	1.99	0.03	1.96	61.3	221.4	160.2	3.6	185.2
176	B00264429	9.2	Moderate	0.40	33.3	3.05	<0.01	3.05	95.3	54.7	-40.6	0.6	43.6
177	B00264428	9.6	Moderate	0.73	60.8	0.82	<0.01	0.82	25.6	81.2	55.6	3.2	68.2
178	B00264427	9.0	Moderate	0.63	52.5	2.10	0.02	2.08	65.0	75.2	10.2	1.2	62.6
179	B00264424	9.7	Moderate	0.40	33.3	0.49	<0.01	0.49	15.3	74.6	59.3	4.9	42.3
180	B00264423	9.7	Moderate	0.40	33.3	0.51	<0.01	0.51	15.9	58.5	42.6	3.7	41.2
181	B00264422	9.8	Moderate	0.30	25.0	0.56	<0.01	0.56	17.5	44.8	27.3	2.6	33.0
182	B00264421	9.5	Moderate	1.33	110.8	0.01	<0.01	0.01	0.3	98.3	98.0	314.6	85.0
183	B00264420	9.7	Moderate	1.15	95.8	0.06	<0.01	0.06	1.9	99.8	97.9	53.2	77.5
184	B00264419	9.8	Moderate	0.85	70.8	0.01	0.01	0.00	0.0	83.3	83.3	N/A	55.3
185	B00264418	9.6	Moderate	0.49	40.8	0.33	<0.01	0.33	10.3	56.6	46.3	5.5	34.9
186	B00264426	9.9	Moderate	0.75	62.5	0.56	<0.01	0.56	17.5	75.9	58.4	4.3	60.0
187	B00264425	9.7	Moderate	1.00	83.3	1.11	<0.01	1.11	34.7	90.8	56.1	2.6	80.7
188	B00264413	9.8	Moderate	0.72	60.0	0.20	<0.01	0.20	6.3	66.9	60.7	10.7	55.2
189	B00264411	9.7	Moderate	0.70	58.3	0.28	<0.01	0.28	8.8	66.5	57.8	7.6	50.2
190	B00264412	9.4	Slight	0.11	9.2	1.74	<0.01	1.74	54.4	22.9	-31.5	0.4	16.7
191	B00264415	9.2	None	0.04	3.3	0.86	0.02	0.84	26.3	9.3	-17.0	0.4	4.2
192	B00264416	9.3	None	<0.02	<1.7	0.15	<0.01	0.15	4.7	9.0	4.3	1.9	3.0
193	B00264414	9.7	Moderate	1.01	84.2	0.02	<0.01	0.02	0.6	95.1	94.5	152.2	76.0
194	B00264410	9.7	Strong	0.63	52.5	0.14	<0.01	0.14	4.4	77.1	72.7	17.6	55.4
195	B00264409	9.4	Moderate	0.89	74.2	0.23	<0.01	0.23	7.2	88.6	81.4	12.3	71.6
196	B00264406	10.0	Strong	0.72	60.0	0.35	<0.01	0.35	10.9	108.2	97.3	9.9	68.9
197	B00264407	9.7	Moderate	0.34	28.3	0.45	<0.01	0.45	14.1	58.5	44.4	4.2	36.5
198	B00264408	9.7	Strong	0.72	60.0	1.08	0.02	1.06	33.1	108.2	75.1	3.3	79.9
199	B00264401	8.8	None	<0.02	<1.7	1.93	<0.01	1.93	60.3	6.8	-53.5	0.1	4.2
200	B00264402	9.1	Moderate	0.32	26.7	1.46	0.02	1.44	45.0	55.3	10.3	1.2	39.6
201	B00264403	9.4	None	<0.02	<1.7	0.22	<0.01	0.22	6.9	4.2	-2.7	0.6	2.0
202	B00264404	9.2	None	0.04	3.3	1.38	<0.01	1.38	43.1	9.2	-33.9	0.2	7.5
203	B00264405	9.8	Moderate	1.62	135.0	0.17	<0.01	0.17	5.3	140.5	135.2	26.4	123.9

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents[*1]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur[*2]	AP[*3]	Siderite Corrected NP	NNP[*4]	NPR[*5]	Mod. ABA NP
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%		kg CaCO3/tonne			kg CaCO3/tonne
	Reported Detection Limit:	***0.01***		***0.02***	***1.7***	**0.01**	**0.01**	**0.01**	**0.3**	***0.5***			***0.5***
	QUALITY ASSURANCE / QUALITY CONTROL												
Replicates (1-30):													
1	B00264216					0.55							
1 R	B00264216 (Rep)					0.54							
10	B00264245	8.9	Moderate				0.02			192.9			140.5
10 R	B00264245 (Rep)	8.9	Moderate				0.02			196.6			140.4
20	B00264252	9.1	Moderate				0.02			87.2			68.1
20 R	B00264252 (Rep)	9.1	Moderate				0.02			86.0			68.0
26	B00264257			1.23	102.5								
26 R	B00264257 (Rep)			1.21	100.8								
30	B00264261	9.1	Moderate				0.02			50.4			33.5
30 R	B00264261 (Rep)	9.1	Moderate				0.02			54.1			33.6
Replicates (31-60):													
31	B00264264			0.84	70.0	1.11							
31 R	B00264264 (Rep)			0.81	67.5	1.11							
40	B00264271	9.3	Moderate				0.02			97.7			85.6
40 R	B00264271 (Rep)	9.3	Moderate				0.02			96.4			85.3
50	B00264282	9.4	Strong				<0.01			127.8			83.3
50 R	B00264282 (Rep)	9.4	Strong				<0.01			132.1			82.8
60	B00264291	9.0	Moderate				<0.01			56.5			49.1
60 R	B00264291 (Rep)	8.9	Moderate				<0.01			56.5			48.0
Replicates (61-90):													
61	B00264292			0.12	10.0	0.71							
61 R	B00264292 (Rep)			0.11	9.2	0.75							
70	B00264299	9.2	None				<0.01			6.1			4.0
70 R	B00264299 (Rep)	9.3	None				<0.01			5.9			4.1
79	B00264308			2.12	176.7								
79 R	B00264308 (Rep)			2.08	173.3								
80	B00264311	9.6	Strong				<0.01			84.9			59.8
80 R	B00264311 (Rep)	9.6	Strong				<0.01			82.1			60.1
90	B00264323	9.6	Strong				<0.01			88.3			54.2
90 R	B00264323 (Rep)	9.6	Strong				<0.01			82.7			55.2
Replicates (91-120):													
100	B00264330	9.1	None				<0.01			5.6			2.5
100 R	B00264330 (Rep)	9.2	None				<0.01			5.7			2.1
110	B00264345	9.4	Strong				0.02			216.4			141.3
110 R	B00264345 (Rep)	9.4	Strong				0.02			209.0			141.9
111	B00264340			0.69	57.5	0.17							
111 R	B00264340 (Rep)			0.74	61.7	0.18							
120	B00264349	9.1	Strong				0.03			134.3			89.5
120 R	B00264349 (Rep)	9.2	Strong				0.03			136.8			89.2

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents[*1]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur[*2]	AP[*3]	Siderite Corrected NP	NNP[*4]	NPR[*5]	Mod. ABA NP
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne				kg CaCO3/tonne
	Reported Detection Limit:	*0.01*		*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*			*0.5*
Replicates (121-150):													
121	B00264348			0.59	49.2	0.26							
121 R	B00264348 (Rep)			0.57	47.5	0.26							
130	B00264361	9.7	Moderate				0.04			36.2			29.9
130 R	B00264361 (Rep)	9.7	Moderate				0.03			39.3			29.7
140	B00264374	9.7	Strong				<0.01			108.5			74.4
140 R	B00264374 (Rep)	9.7	Strong				<0.01			109.1			74.3
150	B00264453	9.3	None				<0.01			13.1			7.2
150 R	B00264453 (Rep)	9.3	None				<0.01			12.8			6.9
Replicates (151-180):													
151	B00264452			1.89	157.5	0.04							
151 R	B00264452 (Rep)			1.78	148.3	0.05							
155	B00264443												187.8
155 R	B00264443 (Rep)												177.4
160	B00264446	9.6	Moderate				<0.01			36.7			17.6
160 R	B00264446 (Rep)	9.5	Moderate				<0.01			34.8			17.5
170	B00264437	9.1	Strong				<0.01			265.5			171.9
170 R	B00264437 (Rep)	9.2	Strong				<0.01			264.9			171.9
180	B00264423	9.7	Moderate				<0.01			58.5			41.2
180 R	B00264423 (Rep)	9.7	Moderate				<0.01			54.1			41.0
Replicates (181-203):													
181	B00264422			0.30	25.0	0.56							
181 R	B00264422 (Rep)			0.29	24.2	0.57							
190	B00264412	9.4	Slight				<0.01			22.9			16.7
190 R	B00264412 (Rep)	9.3	Slight				<0.01			22.6			16.9
200	B00264402	9.1	Moderate				0.02			55.3			39.6
200 R	B00264402 (Rep)	9.1	Moderate				0.02			54.7			39.7
Certified Reference Material (CRM) Analysis:										**as STD Sobek NP** (no CRM available for Sid. Corr. NP)			
Certified Reference Material		KZK-1		SY-4		1) CDN-CM-30 2) OREAS 504 3) GS310-7	1) RTS-3a 2) RTS-1			1) KZK-1 (Slight) 2) KZK-1 (Moderate)			1) KZK-1 (Slight) 2) KZK-1 (Moderate)
CRM True Value		**8.80**		**0.96**		**1) 2.44 2) 1.30 3) 10.92**	**1.10**			**1) 59.0 2) 64.8**			**1) 58.9 2) 61.6**
Reference Material Results		8.82 / 8.83 / 8.84 / 8.83 / 8.84 / 8.84 / 8.83		0.92 / 0.91 / 0.93 / 0/93 / 0.91 / 0.92 / 0.92		**1)** 2.40 / 2.48 / 2.44 / 2.43 / 2.46 **2)** 1.37 **3)** 10.83	1) 1.00 / 1.01 / 1.01 / 1.00 / 1.03 2) 1.36 / 1.29			1) 59.1 / 59.8 / 58.2 / 58.2 / 57.9 / 60.2 / 60.1 2) 61.9 / 61.3 / 68.2 / 68.2 / 67.0 / 61.9 / 61.3			1) 56.9, 56.7, 56.8, 57.4, 57.0 2) 58.0, 61.1
Tolerance (+/-)		***0.09***		***0.03***		***1) 0.13 2) N/A 3) 0.119***	***0.20***			***1) 2.8 2) 5.8***			***1) 1.1 2) 3.4***
Method Blank Analysis:													
Method Blank Results				<0.02 / <0.02 / <0.02 / <0.02 / <0.02/ <0.02 / <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						
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*ARD-013 (HCl Leach)*	*Calc.*	*Calc.*	*ARD-008*	*Calc.*	*Calc.*	*ARD-005*

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Siderite Corrected NP	NNP*4	NPR*5	Mod. ABA NP
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%		kg CaCO3/tonne			kg CaCO3/tonne
	Reported Detection Limit:	*0.01*		*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*			*0.5*

NOTES:
Date of Analysis: (1-30): Nov. 28, 2015; (31-60): Nov. 30, 2015; (61-90): Dec. 1, 2015; (91-120): Dec. 8, 2015; (121-150): Dec. 7, 2015; (151-180): Dec. 9, 2015; (181-203): Dec. 10, 2015.
Date of Analysis (Modified Sobek NP): April 18 to 26, 2016; Sample # 109 (B00264339): April 27/28, 2016.
pH of DI water (pH Units): (1-60): 5.51; (61-90): 5.68; (91-120): 5.71; (121-150): 5.69; (151-180): 5.71; (181-203): 5.69.
pH of DI water (pH Units) - Modified Sobek NP: 5.58, 5.72, 5.58.
EC of DI water (µS/cm): (1-60): 1.02; (61-90): 0.58; (91-120): 0.51; (121-150): 0.63; (151-180): 0.51; (181-203): 0.58.
EC of DI water (pH Units) - Modified Sobek NP: 0.31, 0.61, 0.26.
For STD SY-4, the TIC results are evaluated against the COA CO2 (3.5%) value calculated as carbon - i.e. 0.96%. The COA 95% Confidence Interval then calculates to 0.03%.

METHODS:
Total sulphur by LECO, total inorganic carbon by HCl leach followed by Leco analysis. Job #(s): 1-30: MA0079-NOV15; 31-60: MA0087-NOV15; 61-90: MA0092-NOV15; 91-120: MA0093-NOV15; 121-150: MA0014-DEC15; 151-180: MA0023-DEC15; and 181-203: MA0024-DEC15.

ABBREVIATIONS:
R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)
D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request.
NP = Neutralization Potential
Calc. = Calculation
COA = Certificate Of Analysis

CALCULATIONS:
*1 $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)
*2 Sulphide-Sulphur: Total-sulphur - sulphate-sulphur
*3 AP (Acid Potential): Sulphide-sulphur x 31.25
*4 NNP (Net Neutralization Potential): NP - AP
*5 NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:
Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)
ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).
Note : As requested by client - only a small portion of the sample required for static testing was hand picked as representatively as possible and used.
Peroxide Siderite Correction for Sobek NP: Skousen, J., Renton, J., Brown, H., Evans, P., Leavitt, B., Brady, K., Cohen, L. and Ziemkiewicz, P. (1997), Neutralization Potential of Overburden Samples containing Siderite, Journal of Environmental Quality, v26, n3, p673-681.
Modified ABA (Sobek) NP: MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.
Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).
Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522

CLIENT: BMC MINERALS (No.1) LTD.

CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03

REPORT VERSION: 2

S. No.	Sample ID	Analyte	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)
		Method	IMS-130												
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
		Sample Type													
1	B00264216	Rock Pulp	0.12	0.45	0.9	<0.005	<10	118	0.19	0.07	1.94	0.08	42.49	3.4	52
2	B00264220	Rock Pulp	0.28	3.72	23.7	<0.005	<10	416	0.24	<0.01	4.49	0.09	10.40	40.5	203
3	B00264218	Rock Pulp	0.24	0.54	9.2	0.005	<10	54	0.24	3.04	1.09	2.18	35.88	7.0	97
4	B00264217	Rock Pulp	0.02	0.60	0.2	<0.005	<10	196	0.35	0.02	1.55	0.20	70.44	1.2	93
5	B00264219	Rock Pulp	1.58	0.50	20.4	<0.005	<10	57	0.26	2.01	2.81	0.33	18.31	8.4	30
6	B00264221	Rock Pulp	0.44	0.44	17.0	<0.005	<10	95	0.24	0.17	0.15	0.66	22.05	3.7	71
7	B00264242	Rock Pulp	0.47	1.38	19.7	0.005	12	142	0.62	0.69	1.51	0.43	59.45	4.2	120
8	B00264243	Rock Pulp	0.60	0.37	154.5	<0.005	<10	56	0.15	1.63	2.09	0.36	26.47	2.5	73
9	B00264244	Rock Pulp	2.81	0.43	0.5	0.024	<10	78	0.22	0.26	0.22	1.16	23.90	2.6	71
10	B00264245	Rock Pulp	25.18	2.15	42.0	0.014	<10	26	0.22	18.17	2.91	261.00	29.52	7.7	64
11	B00264457	Rock Pulp	0.03	0.04	47.5	<0.005	<10	<10	0.23	0.03	0.14	0.24	55.06	1.0	5
12	B00264213	Rock Pulp	0.26	0.40	95.2	0.007	<10	53	0.19	0.39	5.24	0.37	19.28	3.0	75
13	B00264214	Rock Pulp	0.22	0.41	28.7	<0.005	<10	41	0.06	0.43	0.05	0.62	11.79	0.8	102
14	B00264215	Rock Pulp	0.26	0.38	10.2	<0.005	<10	49	0.17	0.36	2.32	0.21	24.74	2.2	79
15	B00264250	Rock Pulp	0.04	0.61	163.0	<0.005	<10	202	0.26	0.02	8.57	0.15	22.68	52.3	33
16	B00264246	Rock Pulp	0.96	0.45	1.4	<0.005	<10	252	0.20	1.45	1.82	2.38	49.89	4.0	70
17	B00264247	Rock Pulp	0.06	0.84	0.7	<0.005	<10	382	0.32	0.07	1.35	0.34	62.54	1.5	67
18	B00264248	Rock Pulp	1.32	0.38	155.8	0.019	<10	48	0.19	2.03	0.02	0.20	22.37	1.8	111
19	B00264249	Rock Pulp	13.54	0.38	146.1	0.141	<10	30	0.25	9.21	0.69	13.88	21.83	33.8	110
20	B00264252	Rock Pulp	0.30	0.48	5.1	0.012	<10	232	0.25	0.60	1.83	0.26	41.67	7.8	97
21	B00264251	Rock Pulp	0.19	0.52	0.7	<0.005	<10	217	0.26	0.07	0.80	0.22	49.66	9.0	65
22	B00264256	Rock Pulp	0.15	3.48	49.0	0.005	<10	156	0.16	<0.01	5.63	0.27	16.84	37.7	157
23	B00264253	Rock Pulp	0.42	0.53	0.4	<0.005	<10	231	0.18	0.64	1.63	0.50	42.01	6.6	90
24	B00264254	Rock Pulp	0.04	0.60	0.3	<0.005	<10	195	0.28	0.26	1.49	0.05	45.91	4.0	68
25	B00264255	Rock Pulp	0.03	0.55	1.2	<0.005	<10	135	0.30	0.02	1.37	0.09	69.17	1.7	84
26	B00264257	Rock Pulp	1.27	0.37	8.9	<0.005	<10	90	0.13	0.59	4.08	0.18	15.43	3.2	85
27	B00264259	Rock Pulp	0.06	3.29	28.3	<0.005	<10	127	0.15	0.06	6.32	0.18	16.46	33.3	154
28	B00264258	Rock Pulp	0.52	0.38	88.3	<0.005	<10	108	0.17	0.50	2.45	0.10	26.51	2.5	75
29	B00264260	Rock Pulp	0.25	0.41	1.5	<0.005	<10	208	0.18	0.60	2.04	0.36	44.97	3.9	59
30	B00264261	Rock Pulp	0.52	0.37	89.4	0.018	<10	73	0.17	8.56	0.84	33.20	12.60	4.7	95
31	B00264264	Rock Pulp	0.45	0.66	0.3	<0.005	<10	130	0.38	0.86	2.74	0.49	78.06	22.0	68
32	B00264263	Rock Pulp	0.27	0.50	<0.1	<0.005	<10	207	0.33	0.65	1.20	0.17	162.51	5.8	67
33	B00264267	Rock Pulp	0.09	0.45	6.6	<0.005	<10	133	0.26	0.59	2.05	0.57	39.58	7.9	77
34	B00264265	Rock Pulp	0.15	0.55	2.5	<0.005	<10	232	0.21	0.29	2.29	0.41	135.59	6.7	92
35	B00264266	Rock Pulp	0.17	0.49	23.9	<0.005	<10	24	0.28	0.87	1.40	0.28	42.11	12.5	57
36	B00264268	Rock Pulp	0.63	0.50	57.9	0.005	<10	117	0.24	1.61	0.12	0.55	26.80	6.7	129
37	B00264269	Rock Pulp	0.64	0.77	32.4	<0.005	<10	181	0.17	1.24	2.54	2.42	39.00	1.3	85
38	B00264262	Rock Pulp	0.13	4.33	61.7	<0.005	<10	400	0.39	0.09	3.96	0.11	4.56	51.4	253
39	B00264270	Rock Pulp	0.03	0.76	1.5	<0.005	<10	445	0.34	0.08	1.97	0.36	67.21	4.6	89
40	B00264271	Rock Pulp	0.13	0.51	1.1	<0.005	<10	175	0.24	0.84	2.39	0.33	37.20	8.0	60
41	B00264275	Rock Pulp	1.84	1.36	14.8	0.007	<10	237	0.38	0.57	0.16	7.51	41.17	2.3	85
42	B00264276	Rock Pulp	8.46	1.25	19.4	0.024	<10	198	0.37	1.67	0.32	92.80	48.15	8.2	86
43	B00264272	Rock Pulp	0.40	0.49	4.0	<0.005	<10	178	0.26	0.35	1.57	1.13	37.25	3.3	76
44	B00264273	Rock Pulp	0.14	0.60	0.8	<0.005	<10	173	0.26	0.25	1.36	0.47	36.72	1.5	84
45	B00264274	Rock Pulp	0.89	0.66	34.7	0.012	<10	196	0.67	1.20	0.12	5.60	44.21	3.7	73
46	B00264277	Rock Pulp	0.85	3.30	16.6	0.020	<10	1011	0.43	0.02	3.48	0.08	7.67	46.7	215
47	B00264278	Rock Pulp	0.33	1.31	59.4	0.016	<10	415	0.21	<0.01	9.84	0.12	12.76	37.9	84
48	B00264280	Rock Pulp	0.18	0.50	7.6	<0.005	<10	358	0.22	0.45	1.24	0.10	72.12	2.3	103
49	B00264279	Rock Pulp	0.06	0.94	0.8	<0.005	<10	359	0.42	0.05	2.61	0.25	154.69	6.0	66
50	B00264282	Rock Pulp	0.11	0.48	0.3	<0.005	<10	246	0.24	0.28	2.35	0.83	64.33	2.8	68
51	B00264281	Rock Pulp	0.02	0.77	6.3	<0.005	<10	293	0.34	0.06	2.23	0.26	64.77	2.3	76
52	B00264283	Rock Pulp	0.08	0.68	2.0	<0.005	<10	188	0.31	0.24	0.95	0.07	86.64	7.6	82
53	B00264284	Rock Pulp	0.13	0.70	0.7	<0.005	<10	146	0.23	0.16	1.82	0.24	59.08	6.0	97
54	B00264286	Rock Pulp	0.76	0.51	77.5	0.008	<10	95	0.19	0.61	0.71	0.97	30.78	3.3	52
55	B00264285	Rock Pulp	0.11	0.61	15.7	0.006	<10	139	0.27	0.36	0.63	0.06	36.00	3.5	90
56	B00264287	Rock Pulp	0.57	0.60	11.3	0.008	<10	168	0.22	0.37	0.01	0.06	53.97	1.5	90
57	B00264288	Rock Pulp	3.85	0.62	25.0	0.023	<10	91	0.27	1.98	0.01	1.33	38.58	3.0	86
58	B00264289	Rock Pulp	7.21	0.54	26.0	0.059	<10	65	0.25	3.83	1.04	48.43	24.53	4.1	74
59	B00264290	Rock Pulp	0.63	0.54	9.2	0.006	<10	158	0.19	0.78	1.27	2.92	32.71	1.9	79
60	B00264291	Rock Pulp	2.70	0.42	230.8	0.033	<10	106	0.15	3.64	1.50	10.74	23.11	2.3	99

S. No.	Sample ID	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
	Unit	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
	MDL	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
1	B00264216	0.21	7.1	2.07	1.39	0.07	0.25	<0.01	0.008	0.34	20.8	1.5	0.55	555
2	B00264220	4.58	72.5	5.54	8.95	0.13	0.03	<0.01	0.028	1.42	4.3	39.4	3.31	831
3	B00264218	0.25	121.2	2.82	1.38	0.08	0.31	0.01	0.018	0.36	17.2	1.8	0.24	206
4	B00264217	0.34	6.0	1.39	2.17	0.09	0.21	<0.01	0.013	0.46	34.3	4.6	0.46	342
5	B00264219	0.43	13.5	5.21	1.54	0.10	0.42	0.02	0.020	0.30	10.4	2.2	1.26	565
6	B00264221	0.34	42.6	1.16	1.88	0.07	0.85	<0.01	0.009	0.26	13.3	4.8	0.11	121
7	B00264242	1.39	29.3	4.09	5.19	0.14	0.56	0.50	0.019	0.96	28.6	8.5	0.62	817
8	B00264243	0.18	15.6	1.59	1.09	0.05	0.33	<0.01	<0.005	0.27	15.7	2.0	0.84	891
9	B00264244	0.20	1558.5	1.23	1.24	0.09	0.32	<0.01	0.024	0.30	11.6	1.9	0.12	114
10	B00264245	0.10	133.6	4.55	7.26	0.69	0.72	4.20	2.372	0.12	17.1	18.6	3.41	1567
11	B00264457	0.28	3.8	0.07	1.77	0.07	0.90	<0.01	0.007	0.02	26.8	2.8	0.08	57
12	B00264213	0.55	4.6	1.05	0.90	<0.05	0.30	0.02	0.008	0.25	11.0	4.3	0.08	496
13	B00264214	<0.05	11.1	1.20	0.39	<0.05	0.25	0.04	<0.005	0.30	6.0	0.7	0.03	93
14	B00264215	0.45	8.4	1.09	0.93	<0.05	0.54	0.03	0.006	0.27	12.1	2.6	0.07	544
15	B00264250	0.62	9.0	0.77	1.24	0.05	0.03	<0.01	0.010	0.49	12.8	3.9	0.21	1220
16	B00264246	0.31	46.8	2.23	1.58	0.08	0.17	0.01	0.012	0.32	24.5	3.0	0.60	844
17	B00264247	1.08	29.7	2.77	2.66	0.11	0.23	<0.01	0.010	0.64	30.6	5.5	0.56	729
18	B00264248	0.27	66.4	4.18	1.40	0.11	0.51	0.07	0.007	0.26	12.8	1.3	0.04	22
19	B00264249	4.00	3293.9	4.24	1.66	0.19	0.99	0.83	0.301	0.20	12.5	2.2	0.32	232
20	B00264252	0.62	19.9	2.46	1.44	0.08	0.19	<0.01	0.007	0.39	20.1	3.0	0.57	1002
21	B00264251	0.55	81.2	2.03	1.80	0.09	0.25	0.05	<0.005	0.42	24.4	6.4	0.18	431
22	B00264256	0.72	60.3	4.94	7.67	0.10	0.05	<0.01	0.019	0.22	7.4	24.7	3.67	855
23	B00264253	1.18	57.3	2.60	1.22	0.08	0.30	<0.01	0.008	0.37	20.8	2.0	0.48	649
24	B00264254	0.21	13.8	2.15	1.84	0.09	0.25	<0.01	0.009	0.48	22.3	1.9	0.41	393
25	B00264255	0.56	3.7	1.03	1.65	0.10	0.27	<0.01	0.013	0.31	33.5	2.1	0.32	219
26	B00264257	0.15	7.4	1.56	0.90	<0.05	0.24	0.03	<0.005	0.29	9.1	1.3	0.08	847
27	B00264259	0.30	41.9	5.04	6.84	0.08	<0.02	0.02	0.020	0.22	9.3	21.4	3.20	798
28	B00264258	0.33	7.3	0.53	0.91	0.05	0.25	0.04	<0.005	0.30	13.2	1.7	0.05	249
29	B00264260	0.20	42.5	2.00	1.16	0.07	0.14	<0.01	<0.005	0.30	22.1	1.0	0.66	516
30	B00264261	0.15	176.6	3.41	1.36	0.09	0.29	0.68	0.258	0.25	6.0	1.4	0.37	400
31	B00264264	2.02	115.1	4.36	2.06	0.10	0.12	<0.01	0.017	0.47	36.6	4.4	0.69	957
32	B00264263	0.68	40.6	2.05	2.17	0.14	0.10	<0.01	0.006	0.39	74.0	6.4	0.45	631
33	B00264267	0.14	34.8	2.80	1.56	0.06	0.14	<0.01	0.012	0.38	18.0	1.8	0.54	466
34	B00264265	0.45	77.1	2.53	1.70	0.13	0.21	<0.01	0.008	0.38	61.7	2.8	0.64	974
35	B00264266	0.20	13.2	4.37	1.71	0.08	0.24	<0.01	0.009	0.38	18.9	1.5	0.36	300
36	B00264268	0.25	34.2	1.51	1.56	0.07	0.50	0.02	0.007	0.31	12.9	1.6	0.07	51
37	B00264269	0.25	14.7	1.77	2.01	0.06	0.54	0.02	0.021	0.28	18.7	3.5	1.46	1635
38	B00264262	6.06	46.4	5.40	13.70	0.18	0.04	<0.01	0.018	1.47	1.9	40.1	4.46	775
39	B00264270	1.13	44.1	2.18	2.48	0.08	0.24	<0.01	0.006	0.55	30.9	5.0	0.56	508
40	B00264271	0.36	73.1	2.64	1.53	0.06	0.22	<0.01	0.005	0.32	17.1	2.3	0.85	513
41	B00264275	1.50	157.8	2.18	3.70	0.11	0.95	0.07	0.038	0.69	19.3	9.8	0.76	1355
42	B00264276	1.40	160.6	2.06	4.06	0.23	2.01	2.18	0.695	0.62	23.1	13.3	0.66	862
43	B00264272	0.39	6.8	0.98	1.50	<0.05	0.81	0.02	0.018	0.34	16.7	1.5	0.71	332
44	B00264273	0.26	7.1	0.98	1.67	<0.05	0.73	<0.01	0.012	0.40	17.2	1.6	0.60	339
45	B00264274	<0.05	35.2	1.19	1.68	0.16	0.60	0.15	0.053	0.41	1.3	6.0	0.07	49
46	B00264277	16.71	110.2	6.46	9.07	0.19	0.07	<0.01	0.020	2.79	3.1	37.2	1.71	795
47	B00264278	4.83	49.5	2.16	3.45	0.05	0.22	<0.01	0.016	1.01	5.4	12.3	0.68	1132
48	B00264280	0.51	5.7	0.95	1.45	0.08	0.16	<0.01	<0.005	0.41	33.4	2.2	0.27	457
49	B00264279	3.92	66.3	2.68	4.56	0.13	0.13	<0.01	0.010	0.67	71.1	9.9	0.65	833
50	B00264282	0.26	29.8	2.04	1.69	0.06	0.20	<0.01	0.012	0.41	29.6	2.1	0.71	649
51	B00264281	0.26	26.8	2.33	2.43	0.07	0.34	<0.01	0.006	0.59	30.0	2.3	0.73	715
52	B00264283	0.42	29.1	1.93	2.12	0.08	0.13	<0.01	0.009	0.44	39.5	2.3	0.29	190
53	B00264284	0.40	11.5	2.29	1.71	0.07	0.13	<0.01	0.009	0.31	26.8	3.4	0.70	292
54	B00264286	0.33	25.8	1.87	1.51	0.06	0.91	0.11	0.022	0.31	17.0	1.8	0.27	160
55	B00264285	0.29	5.2	1.32	1.76	0.06	0.48	<0.01	0.006	0.39	17.0	2.3	0.26	227
56	B00264287	0.19	11.1	0.39	1.62	0.07	0.78	0.06	0.006	0.38	25.0	1.4	0.03	11
57	B00264288	0.21	184.8	1.84	1.53	0.11	0.92	0.13	0.016	0.40	18.0	1.5	0.03	9
58	B00264289	0.20	99.4	3.63	1.50	0.13	0.65	2.74	0.119	0.39	13.1	1.9	0.39	470
59	B00264290	0.16	58.0	1.47	1.51	<0.05	0.55	0.23	0.019	0.38	15.3	1.5	0.41	508
60	B00264291	0.12	121.3	2.47	1.08	0.06	0.54	0.76	0.090	0.30	12.7	2.9	0.41	561

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Method	IMS-130																								
		Analyte	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
		Sample Type																										
61	B00264292	Rock Pulp	0.39	0.54	7.8	0.007	<10	212	0.22	0.33	0.57	0.55	27.07	2.1	93	0.22	32.0	1.00	1.68	0.06	0.38	0.05	0.009	0.39	13.3	2.0	0.15	205
62	B00264293	Rock Pulp	0.60	0.51	8.5	0.009	<10	213	0.20	0.90	0.90	0.58	28.68	2.2	94	0.26	59.5	1.30	1.65	0.05	0.46	0.07	<0.005	0.37	15.0	3.6	0.23	315
63	B00264294	Rock Pulp	0.26	0.46	43.5	0.008	<10	114	0.15	0.23	0.37	1.34	19.77	1.3	66	0.17	27.0	1.20	1.13	<0.05	0.48	0.08	0.012	0.31	11.1	1.8	0.13	177
64	B00264295	Rock Pulp	0.24	0.70	5.1	<0.005	<10	184	0.26	0.36	0.94	<0.01	27.84	2.2	75	0.25	47.6	1.61	1.70	0.05	0.63	0.01	<0.005	0.45	13.5	2.7	0.44	510
65	B00264296	Rock Pulp	<0.01	0.54	<0.1	<0.005	<10	144	0.29	0.02	0.99	<0.01	45.70	0.8	84	0.17	1.8	0.79	1.67	0.05	0.39	<0.01	<0.005	0.44	22.6	2.1	0.33	356
66	B00264297	Rock Pulp	0.03	0.86	0.3	<0.005	<10	199	0.33	0.04	1.42	<0.01	79.06	3.8	69	1.66	9.4	1.87	2.59	0.09	0.29	<0.01	0.009	0.67	37.7	5.1	0.41	491
67	B00264301	Rock Pulp	0.52	0.43	11.0	0.006	<10	176	0.22	0.72	0.41	0.26	52.27	3.1	65	0.40	18.0	1.19	1.42	0.08	0.24	0.06	0.008	0.32	25.5	3.4	0.16	120
68	B00264302	Rock Pulp	1.62	0.38	3.5	<0.005	<10	231	0.16	1.40	1.07	13.45	53.78	3.9	133	0.28	153.1	0.80	1.33	0.07	0.27	0.06	0.054	0.28	26.2	1.7	0.04	193
69	B00264298	Rock Pulp	6.50	0.41	9.5	<0.005	<10	99	0.17	8.19	0.52	21.44	19.28	2.7	148	0.72	120.4	2.31	1.29	0.13	0.31	0.32	0.141	0.23	11.4	1.4	0.20	213
70	B00264299	Rock Pulp	0.41	0.50	15.1	<0.005	<10	264	0.19	0.22	0.09	<0.01	26.43	1.7	96	0.28	14.2	1.13	1.45	0.07	0.31	<0.01	<0.005	0.29	13.4	1.9	0.06	60
71	B00264300	Rock Pulp	1.15	0.78	205.9	0.011	<10	275	0.12	1.97	2.22	1.08	52.38	4.2	85	0.71	127.8	1.67	2.59	0.06	0.63	0.06	0.025	0.24	25.5	4.7	0.84	624
72	B00264304	Rock Pulp	0.13	0.46	1.3	<0.005	<10	279	0.23	0.10	1.29	0.06	75.86	1.1	101	0.16	109.2	1.01	1.54	0.08	0.23	<0.01	0.006	0.33	36.7	0.9	0.38	427
73	B00264305	Rock Pulp	0.49	0.48	0.6	0.008	<10	270	0.18	0.06	0.65	0.20	50.25	1.5	77	0.24	324.5	1.04	1.44	0.07	0.30	<0.01	0.013	0.31	25.3	2.2	0.23	361
74	B00264306	Rock Pulp	0.02	0.37	1.0	<0.005	<10	184	0.16	0.04	2.04	0.08	38.53	1.5	68	0.35	18.0	2.12	1.03	0.05	0.14	<0.01	<0.005	0.26	18.9	1.0	0.64	843
75	B00264303	Rock Pulp	<0.01	1.09	1.5	0.006	<10	222	0.40	0.06	1.70	0.07	75.02	3.2	94	2.65	19.3	3.58	3.74	0.10	0.19	<0.01	0.014	0.84	36.1	11.2	0.79	896
76	B00264309	Rock Pulp	<0.01	3.98	33.2	<0.005	<10	44	0.18	<0.01	5.28	<0.01	14.17	48.7	252	1.06	8.1	5.64	14.21	0.14	<0.02	<0.01	0.041	0.09	6.0	33.4	3.99	911
77	B00264310	Rock Pulp	0.21	2.71	7.8	<0.005	<10	323	0.13	0.16	8.36	0.15	10.64	25.0	121	2.42	38.5	3.96	4.20	<0.05	<0.02	<0.01	0.012	0.97	4.7	18.0	1.98	944
78	B00264307	Rock Pulp	0.02	0.48	1.0	<0.005	<10	211	0.21	0.07	1.42	0.22	52.17	3.0	103	0.33	8.7	1.68	1.66	0.06	0.27	<0.01	0.011	0.45	24.7	2.5	0.29	479
79	B00264308	Rock Pulp	<0.01	0.44	4.8	<0.005	<10	65	0.10	0.01	3.74	<0.01	17.19	1.4	51	0.15	0.6	2.47	0.61	<0.05	0.10	<0.01	0.005	0.33	9.2	0.8	1.50	752
80	B00264311	Rock Pulp	0.01	0.49	2.0	<0.005	<10	77	0.23	0.13	1.66	<0.01	30.53	4.9	53	0.20	4.8	2.39	1.53	<0.05	0.15	<0.01	0.008	0.36	14.8	1.4	0.54	464
81	B00264315	Rock Pulp	0.01	3.25	57.8	<0.005	<10	145	0.17	0.02	7.55	0.08	13.80	43.2	145	0.60	25.4	5.51	7.28	0.06	<0.02	<0.01	0.016	0.30	6.3	20.8	2.60	1174
82	B00264313	Rock Pulp	0.96	0.47	629.4	0.021	<10	123	0.17	0.36	0.17	1.07	24.03	1.5	70	0.18	28.4	0.67	1.43	0.06	0.53	0.11	0.029	0.31	12.1	2.5	0.10	95
83	B00264312	Rock Pulp	0.16	0.46	18.5	<0.005	<10	132	0.18	0.30	2.16	0.71	16.26	3.1	50	0.17	24.4	1.82	1.30	<0.05	0.39	0.05	0.016	0.32	8.8	1.3	0.79	562
84	B00264314	Rock Pulp	0.67	0.42	12.9	0.011	<10	355	0.20	0.83	2.86	0.02	24.72	2.8	61	0.15	7.9	0.44	1.07	<0.05	0.23	0.02	<0.005	0.32	12.0	2.2	0.05	605
85	B00264316	Rock Pulp	<0.01	0.48	1.4	<0.005	<10	159	0.21	0.03	1.48	<0.01	116.40	1.6	62	0.41	2.6	1.40	1.72	0.12	0.22	<0.01	0.007	0.41	55.4	2.0	0.25	485
86	B00264317	Rock Pulp	<0.01	0.74	0.5	<0.005	<10	438	0.29	0.03	4.61	<0.01	53.32	16.0	55	2.41	15.8	4.96	2.55	0.09	0.07	<0.01	0.015	0.56	24.8	4.9	1.09	1251
87	B00264318	Rock Pulp	0.03	0.54	1.1	<0.005	<10	157	0.27	0.10	2.73	<0.01	130.84	11.0	81	0.27	12.1	2.36	1.87	0.13	0.09	<0.01	0.008	0.45	63.5	2.3	0.73	902
88	B00264319	Rock Pulp	0.11	0.48	12.0	<0.005	<10	62	0.22	0.16	2.52	<0.01	26.68	7.2	73	0.24	14.8	3.86	1.42	0.06	0.19	<0.01	0.009	0.32	12.9	1.3	0.98	911
89	B00264320	Rock Pulp	0.13	0.60	11.8	<0.005	<10	90	0.25	0.25	3.00	0.06	24.41	5.1	93	1.92	8.5	3.69	1.15	0.05	0.34	<0.01	0.010	0.27	13.6	2.4	1.20	1088
90	B00264323	Rock Pulp	0.02	0.43	<0.1	<0.005	<10	172	0.25	0.08	1.58	<0.01	71.06	0.6	72	0.39	3.8	1.31	1.40	0.07	0.21	<0.01	<0.005	0.32	34.2	1.3	0.45	564
91	B00264322	Rock Pulp	0.24	0.43	1.2	<0.005	<10	205	0.25	<0.01	1.30	0.30	67.53	0.7	89	0.23	167.7	1.21	1.38	0.07	0.17	<0.01	0.006	0.33	32.5	1.1	0.38	468
92	B00264321	Rock Pulp	<0.01	0.46	0.2	<0.005	<10	180	0.21	0.01	0.86	0.15	54.26	0.5	79	0.40	3.1	0.33	1.44	0.07	0.16	<0.01	<0.005	0.43	25.1	2.3	0.06	101
93	B00264324	Rock Pulp	<0.01	0.79	0.1	<0.005	<10	81	0.29	0.06	3.09	0.19	112.77	1.8	49	1.07	25.7	2.12	2.72	0.11	0.15	<0.01	0.008	0.39	54.2	8.5	0.83	950
94	B00264325	Rock Pulp	0.02	2.07	48.1	<0.005	<10	135	0.14	<0.01	11.26	0.36	7.41	18.0	83	1.37	36.6	3.91	4.88	0.05	0.02	0.03	0.014	0.22	3.5	19.6	2.02	2721
95	B00264326	Rock Pulp	0.04	3.11	49.8	<0.005	<10	100	0.22	<0.01	0.65	0.02	5.46	37.3	224	0.21	31.2	4.20	6.07	0.18	0.04	<0.01	0.005	0.09	2.3	23.2	3.25	497
96	B00264458	Rock Pulp	0.03	0.38	1.3	<0.005	<10	45	0.17	0.11	1.15	0.12	20.51	2.1	69	0.13	3.5	0.74	1.05	<0.05	0.47	<0.01	<0.005	0.27	11.4	1.2	0.50	227
97	B00264327	Rock Pulp	0.10	0.52	0.8	<0.005	<10	83	0.22	0.21	2.96	0.29	25.31	3.8	55	0.64	12.5	2.95	1.58	0.05	0.19	<0.01	0.013	0.38	12.1	2.2	0.87	980
98	B00264328	Rock Pulp	0.03	0.57	1.6	<0.005	<10	107	0.25	0.06	0.97	0.22	35.25	4.0	73	0.25	14.8	2.15	1.75	0.06	0.17	<0.01	0.006	0.42	16.7	1.6	0.34	407
99	B00264329	Rock Pulp	0.42	0.58	12.3	0.010	<10	98	0.23	0.42	1.46	0.25	30.36	6.4	46	0.23	21.4	3.42	1.75	0.06	0.25	<0.01	0.008	0.40	14.8	1.3	0.51	441
100	B00264330	Rock Pulp	0.42	0.50	5.1	<0.005	<10	106	0.25	0.96	0.08	0.31	28.30	4.1	45	0.19	32.3	1.07	1.51	0.08	0.59	0.01	0.008	0.34	14.0	1.3	0.04	15
101	B00264331	Rock Pulp	0.30	0.43	6.1	<0.005	14	95	0.18	0.27	0.98	0.31	20.62	2.3	46	0.40	18.1	1.33	1.04	<0.05	0.44	<0.01	0.008	0.29	11.7	1.1	0.45	312
102	B00264332	Rock Pulp	0.49	0.80	525.2	0.012	16	63	0.15	0.14	1.85	1.61	19.60	1.8	71	2.00	231.4	4.43	1.75	0.08	0.52	0.09	0.013	0.21	9.3	6.3	0.91	975
103	B00264335	Rock Pulp	0.24	0.59	2.9	<0.005	17	244	0.29	0.34	1.37	2.88	68.40	1.2	67	0.83	52.6	1.31	2.09	0.07	0.23	<0.01	0.013	0.49	33.2	4.3	0.43	496
104	B00264334	Rock Pulp	0.09	0.77	0.9	<0.005	17	209	0.23	0.05	1.61	0.21	55.62	3.0	54	1.21	11.2	1.83	2.23	0.08	0.47	<0.01	0.012	0.54	27.1	3.8	0.42	468
105	B00264333	Rock Pulp	0.21	0.57	19.9	<0.005	19	82	0.31	0.24	1.51	0.28	27.81	8.8	64	0.87	8.5	3.58	2.77	0.07	0.14	<0.01	0.014	0.43	20.0	3.3	0.40	308
106	B00264336	Rock Pulp	0.48	0.71	9.8	0.007	16	159	0.19	0.88	1.08	0.05	80.40	2.3	61	0.35	4.4	1.54	1.83	0.09	0.47	0.12	<0.005	0.33	40.2	4.7	0.85	378
107	B00264337	Rock Pulp	0.19	0.48	13.8	0.007	11	93	0.26	0.27	1.23	0.06	25.80	1.9	68	0.45	4.5	1.25	1.78	<0.05	0.31	0.07	0.006	0.21	15.8	3.4	0.70	184
108	B00264338	Rock Pulp	0.48	0.39	4.7	<0.005	15	114	0.15	0.77	1.26	2.37	25.29	1.8	76	0.43	27.3	1.15	1.03	<0.05	0.41	0.05	0.035	0.23	13.5	1.1	0.57	437
109	B00264339	Rock Pulp	0.02	0.43	102.1	<0.005	16	196	0.14	0.04	7.12	0.62	7.60	30.9	34	2.21	0.8	4.91	0.93	0.06	<0.02	<0.01	0.013	0.37	3.0	3.0	2.69	1044
110	B00264345	Rock Pulp	0.12	2.24	35.0	<0.005	14	280	0.09	0.09	4.24	0.16	64.65	16.9	112	1.15	19.7	3.41	3.95	0.09	0.21	0.10	0.011	0.39	31.2	12.6	2.75	726
111	B00264340	Rock Pulp	0.05	0.63	0.3	<0.005	15	291	0.20	0.02	1.92	0.11	60.15	3.1	34	2.93	30.9	1.93	2.24	0.07	0.37	<0.01	<0.005	0.46	29.6	4.3	0.53	439
112	B00264341	Rock Pulp	0.08	0.44	2.8	<0.005	14	239	0.20	1.00	1.66	0.48	42.58	3.8	59	0.25	36.0	2.06	1.11	0.06	0.29	<0.01	0.008	0.32	20.6	1.1	0.48	372
113	B00264342	Rock Pulp	0.02	0.34	<0.1	<0.005	17	109	0.14	0.07	1.58	0.21	30.38	2.2	60	0.14	5.3	1.36	0.93	<0.05	0.15	<0.01	0.006	0.25	16.5	0.9	0.55	351
114	B00264343	Rock Pulp	0.07	0.62	421.6	<0.005	15	138	0.28	0.14	2.06	0.33	35.57	8.9	56	0.30	5.1	2.35	1.86	0.06	0.22	<0.01	0.015	0.33	19.3	3.0	0.89	552
115	B00264344	Rock Pulp	0.02	0.38	3.0	<0.005	15	68	0.23	0.10	2.09	0.37	26.39	1.6	60	0.38	2.7	1.23	1.10	<0.05	0.47	<0.01	<0.005	0.26	14.3	1.8	0.88	414
116	B00264346	Rock Pulp	6.03	0.70	644.0	0.041	14	96	0.21	0.47	1.98	15.94	109.19	1.9	63	2.66	475.3	2.47	2.25	0.13	0.76	0.31	0.025	0.40	51.8	5.6	0.70	440
117	B00264347	Rock Pulp	0.08	0.55	3.3	<0.005	14	182	0.29	0.15	1.23	0.14	54.13	2.8	95	1.02	15.9	1.51	1.84	0.07	0.39	<0.01	0.011	0.39	26.6	4.2	0.26	533
118	B00264350	Rock Pulp	0.09	0.53	0.5	<0.005	15	147	0.29	0.02	1.73	0.13	55.19	5.6	58	0.92	8.0	2.53	2.05	0.08	0.22	<0.01	0.014	0.32	26.7	3.1	0.25	632
119	B00264351	Rock Pulp	0.01	0.39	0.4	<0.005	17	105	<0.05	0.02	1.08	0.01	7.07	0.5	64	<0.05	<0.2	1.39	0.17	<0.05	0.05	<0.01	<0.005	0.25	3.4	0.1	0.28	395
120	B00264349	Rock Pulp	0.05	0.85	3.4	<0.005	19	202	0.43	0.03	3.20	0.18	47.79	19.4	43	3.86	6.0	5.38	3.12	0.10	0.10	<0.01	0.024	0.65	25.9	6.9	0.85	1393

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Analyte	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Method	IMS-130																									
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
		Sample Type																										
121	B00264348	Rock Pulp	0.06	1.06	<0.1	<0.005	<10	153	0.33	0.04	2.00	0.13	79.71	5.0	77	3.29	17.4	2.55	2.93	0.14	0.13	<0.01	0.018	0.58	38.3	6.0	0.66	629
122	B00264357	Rock Pulp	0.13	2.95	11.7	<0.005	<10	558	0.27	<0.01	7.60	0.21	16.91	25.5	130	21.34	32.8	4.37	6.93	0.21	0.02	<0.01	0.030	2.97	7.4	57.8	3.36	1056
123	B00264358	Rock Pulp	0.06	0.46	1.2	<0.005	<10	127	0.25	0.19	2.86	0.04	71.50	1.9	77	0.62	4.4	0.64	1.31	0.10	0.57	<0.01	<0.005	0.41	35.4	6.1	0.14	282
124	B00264354	Rock Pulp	5.00	0.41	197.5	0.044	<10	38	0.17	5.23	0.50	9.08	21.12	3.3	90	0.43	361.0	4.43	1.35	0.15	0.65	0.37	0.109	0.28	9.7	2.5	0.20	295
125	B00264355	Rock Pulp	1.64	0.54	34.7	0.018	<10	158	0.21	3.77	0.12	9.45	22.21	1.6	94	0.37	59.1	1.91	1.54	0.11	0.48	0.15	0.084	0.35	12.1	3.2	0.07	69
126	B00264356	Rock Pulp	2.41	0.45	2444.9	0.031	<10	186	0.14	0.46	1.13	9.36	18.24	1.7	62	0.55	25.7	1.92	1.14	0.08	0.51	0.74	0.054	0.31	10.0	2.0	0.59	539
127	B00264352	Rock Pulp	1.16	0.43	26.7	0.008	<10	67	0.17	0.53	0.04	0.55	21.51	2.4	69	0.21	27.9	1.38	1.11	0.09	0.83	0.03	0.012	0.29	10.4	1.4	0.04	30
128	B00264353	Rock Pulp	0.80	0.47	14.6	<0.005	<10	72	0.18	0.57	0.21	0.71	19.76	1.4	84	0.24	8.4	0.91	1.20	0.08	0.44	0.03	0.032	0.32	9.9	1.6	0.12	144
129	B00264360	Rock Pulp	0.18	0.46	6.6	<0.005	<10	87	0.15	0.29	1.70	1.59	21.00	7.0	47	0.25	45.0	4.05	1.05	0.08	0.24	0.04	0.031	0.33	11.2	1.0	0.56	427
130	B00264361	Rock Pulp	0.02	0.52	0.2	<0.005	<10	117	0.15	0.01	0.94	1.46	51.27	0.5	66	0.36	4.9	0.86	1.14	0.09	0.21	<0.01	0.010	0.40	24.9	2.0	0.23	241
131	B00264362	Rock Pulp	0.18	0.61	1.2	<0.005	<10	85	0.39	0.19	2.15	0.27	69.50	2.0	81	1.38	8.2	1.89	3.36	0.07	0.25	<0.01	0.018	0.33	34.1	8.4	0.47	680
132	B00264363	Rock Pulp	0.06	1.29	1.2	<0.005	<10	149	0.61	0.02	2.95	0.35	127.88	1.6	59	3.83	9.4	2.64	6.40	0.12	0.21	<0.01	0.020	0.72	62.9	9.4	0.80	796
133	B00264359	Rock Pulp	0.16	0.61	0.2	<0.005	<10	103	0.20	0.27	1.19	0.29	57.38	3.6	76	0.38	5.0	1.62	1.58	0.10	0.14	<0.01	0.012	0.45	27.7	2.3	0.44	245
134	B00264364	Rock Pulp	0.03	0.92	0.3	<0.005	<10	506	0.32	0.02	3.56	0.07	34.25	1.7	65	1.21	2.3	1.66	2.50	0.06	0.50	<0.01	0.013	0.28	16.5	4.3	1.48	459
135	B00264365	Rock Pulp	0.27	0.44	11.5	<0.005	<10	57	0.21	0.49	1.65	0.20	16.93	0.9	106	0.40	15.1	1.88	1.03	<0.05	0.73	0.03	0.010	0.21	9.0	2.4	0.76	608
136	B00264367	Rock Pulp	0.23	0.50	0.4	<0.005	<10	188	0.17	0.61	1.16	0.30	36.86	3.6	66	0.49	19.1	1.74	1.36	0.07	0.21	<0.01	0.008	0.35	18.0	2.4	0.47	331
137	B00264366	Rock Pulp	0.05	0.64	1.4	<0.005	<10	222	0.23	0.14	1.39	0.31	36.48	2.2	66	0.21	11.9	1.11	1.51	0.07	0.27	<0.01	0.006	0.44	17.6	1.3	0.53	337
138	B00264376	Rock Pulp	1.59	0.44	0.2	<0.005	<10	109	0.21	4.51	2.33	0.56	126.44	7.1	51	0.60	61.8	3.16	1.76	0.17	0.25	<0.01	0.011	0.27	61.5	2.1	0.66	735
139	B00264375	Rock Pulp	0.26	1.34	0.6	<0.005	<10	117	0.32	0.14	2.54	0.42	55.51	8.8	46	0.55	69.0	3.24	3.80	0.10	0.17	<0.01	0.015	0.24	27.1	8.6	1.03	798
140	B00264374	Rock Pulp	0.02	0.59	<0.1	<0.005	<10	119	0.40	0.02	2.30	0.13	86.38	0.9	68	1.27	1.3	1.91	2.98	0.12	0.15	<0.01	0.015	0.24	42.3	4.3	0.68	791
141	B00264373	Rock Pulp	1.05	0.44	7.6	0.007	<10	151	0.23	2.15	1.96	0.17	31.70	5.0	63	0.44	173.5	4.06	1.15	0.09	0.18	<0.01	0.008	0.34	15.4	2.9	0.59	536
142	B00264372	Rock Pulp	0.46	0.44	<0.1	<0.005	<10	182	0.21	1.33	1.72	0.12	35.73	5.6	47	0.70	74.7	3.42	1.24	0.08	0.12	<0.01	0.007	0.36	17.3	4.2	0.58	573
143	B00264371	Rock Pulp	0.32	0.46	0.5	<0.005	<10	153	0.28	0.45	2.76	0.57	44.05	2.8	49	1.33	39.5	2.91	1.71	0.08	0.20	<0.01	0.020	0.33	21.5	4.7	0.82	670
144	B00264370	Rock Pulp	0.15	0.44	4.0	<0.005	<10	128	0.19	0.56	2.03	0.28	34.57	4.7	54	0.54	13.7	3.14	1.19	0.07	0.18	<0.01	0.006	0.38	16.6	2.7	0.61	534
145	B00264369	Rock Pulp	0.12	0.33	0.7	<0.005	<10	87	0.13	0.16	1.83	0.45	28.47	4.3	46	0.36	5.1	2.67	0.86	0.07	0.15	<0.01	0.009	0.28	14.5	2.0	0.52	474
146	B00264368	Rock Pulp	0.03	0.47	0.3	<0.005	<10	114	0.19	0.03	0.81	0.22	53.05	2.4	67	0.46	5.1	1.22	1.37	0.09	0.20	<0.01	0.009	0.39	25.6	3.3	0.17	237
147	B00264456	Rock Pulp	0.08	0.49	0.8	<0.005	<10	163	0.14	0.11	1.12	0.08	24.41	3.2	68	0.39	5.6	2.35	0.81	0.06	0.14	<0.01	0.011	0.31	12.4	1.6	0.24	397
148	B00264455	Rock Pulp	0.11	0.63	0.3	<0.005	<10	126	0.17	0.12	1.35	0.12	37.94	6.1	99	0.58	8.6	3.06	1.25	0.08	0.25	<0.01	0.011	0.33	18.3	2.3	0.48	445
149	B00264454	Rock Pulp	0.20	0.52	303.5	<0.005	<10	514	0.18	0.34	0.23	0.22	45.14	1.3	54	1.19	2.9	2.04	1.36	0.10	0.67	0.04	0.009	0.30	22.8	4.2	0.50	534
150	B00264453	Rock Pulp	0.42	0.68	821.8	0.014	<10	484	0.15	1.14	0.10	3.42	32.78	3.8	33	0.60	21.4	1.47	1.74	0.11	0.93	0.03	0.022	0.30	16.8	5.9	0.35	692
151	B00264452	Rock Pulp	0.12	0.41	85.0	<0.005	14	633	0.14	0.17	3.11	3.46	29.22	0.8	42	1.44	4.1	1.92	0.72	<0.05	0.88	0.05	0.013	0.21	17.6	1.7	1.25	886
152	B00264444	Rock Pulp	0.63	0.52	11.9	<0.005	15	161	0.31	1.01	0.43	0.03	133.19	6.6	30	0.15	4.6	0.71	1.94	0.16	0.12	0.02	0.005	0.39	66.0	1.7	0.03	67
153	B00264451	Rock Pulp	0.14	0.55	1.0	<0.005	16	191	0.31	0.05	1.21	0.14	27.89	5.4	60	0.98	52.4	1.75	2.14	0.06	0.21	<0.01	0.010	0.43	16.0	5.2	0.16	378
154	B00264445	Rock Pulp	0.01	3.36	40.1	<0.005	15	73	0.23	<0.01	3.58	0.07	24.05	47.1	149	1.47	7.0	5.27	9.15	0.13	<0.02	<0.01	0.017	0.38	10.5	28.3	3.29	529
155	B00264443	Rock Pulp	0.07	0.37	0.7	<0.005	12	58	0.20	0.04	6.91	0.06	181.17	0.9	36	0.17	2.8	0.33	1.43	0.14	0.11	<0.01	<0.005	0.29	88.4	2.3	0.08	631
156	B00264450	Rock Pulp	1.45	0.49	0.9	<0.005	15	155	0.26	1.98	1.53	11.12	46.54	6.1	55	0.68	116.5	2.18	1.51	0.08	0.21	0.01	0.052	0.30	22.8	4.5	0.42	517
157	B00264448	Rock Pulp	0.09	0.83	0.3	<0.005	15	122	0.36	0.11	2.20	0.35	32.30	6.4	37	2.86	32.6	3.41	2.95	0.07	0.32	<0.01	0.010	0.55	18.1	7.3	0.82	646
158	B00264449	Rock Pulp	0.10	0.38	4.3	<0.005	12	130	0.28	0.11	2.25	0.08	50.95	1.5	50	0.42	33.7	1.79	1.70	0.07	0.28	<0.01	0.007	0.25	24.7	2.6	0.62	550
159	B00264447	Rock Pulp	0.04	0.94	4.5	<0.005	16	76	0.53	0.06	3.04	0.16	36.40	6.5	35	5.23	8.5	2.58	3.97	0.07	0.37	<0.01	0.017	0.40	20.3	8.9	1.16	576
160	B00264446	Rock Pulp	0.17	0.44	3.6	<0.005	15	115	0.22	0.46	0.53	0.22	23.98	2.7	71	0.37	12.7	0.89	1.51	0.06	0.66	<0.01	0.007	0.30	13.8	2.2	0.19	117
161	B00264459	Rock Pulp	0.28	0.45	22.0	<0.005	15	51	0.20	0.29	0.89	6.17	17.42	2.4	65	0.16	10.0	2.13	1.29	<0.05	0.90	0.19	0.352	0.29	8.3	1.3	0.41	225
162	B00264442	Rock Pulp	0.11	0.36	9.9	<0.005	16	114	0.16	0.10	3.01	0.15	29.21	6.2	54	0.41	10.7	3.40	1.04	0.06	0.30	<0.01	0.015	0.20	16.2	1.2	0.83	820
163	B00264440	Rock Pulp	0.36	0.42	30.2	0.008	15	81	0.21	0.15	0.59	0.68	36.37	6.5	71	0.64	24.1	2.28	1.32	0.07	0.35	<0.01	0.010	0.32	20.4	1.3	0.14	182
164	B00264441	Rock Pulp	0.05	0.71	0.3	<0.005	18	101	0.32	0.03	1.22	0.44	42.59	4.6	59	2.13	7.7	2.59	3.06	0.08	0.29	<0.01	0.017	0.42	23.9	5.0	0.51	564
165	B00264439	Rock Pulp	2.82	0.48	12.5	0.009	10	110	0.09	0.71	0.44	0.29	29.44	3.5	77	3.43	60.0	1.71	0.99	0.07	0.81	0.04	<0.005	0.17	16.5	6.7	0.09	142
166	B00264431	Rock Pulp	0.05	0.96	0.5	<0.005	15	101	0.39	0.08	1.34	0.05	103.25	5.3	79	1.88	15.0	2.36	3.69	0.12	0.37	<0.01	0.015	0.63	50.2	8.0	0.51	490
167	B00264432	Rock Pulp	0.03	1.50	0.2	<0.005	14	126	0.46	0.06	2.79	0.07	140.31	4.6	57	3.27	6.3	2.71	4.97	0.15	0.36	<0.01	0.020	0.83	68.8	10.4	1.01	832
168	B00264433	Rock Pulp	0.05	0.50	0.2	<0.005	16	122	0.27	0.08	1.28	0.08	54.29	2.6	72	0.86	3.8	1.48	1.48	0.07	0.24	<0.01	0.009	0.41	26.5	1.7	0.41	451
169	B00264434	Rock Pulp	0.02	0.61	<0.1	<0.005	16	134	0.29	<0.01	1.31	0.08	56.83	1.2	64	0.33	2.9	1.29	1.78	0.07	0.23	<0.01	0.009	0.48	27.5	1.9	0.41	469
170	B00264437	Rock Pulp	0.21	3.39	681.4	<0.005	14	76	0.15	0.04	5.75	0.18	14.59	33.0	156	0.36	47.1	4.94	6.41	0.06	<0.02	<0.01	0.017	0.17	6.4	21.5	3.43	783
171	B00264438	Rock Pulp	0.16	3.30	41.6	0.006	13	17	0.12	0.01	5.11	0.19	6.79	44.4	223	0.19	52.6	4.94	13.65	0.20	0.02	<0.01	0.021	0.02	2.9	31.7	3.63	863
172	B00264435	Rock Pulp	0.06	0.41	5.1	<0.005	14	77	0.20	0.14	2.15	0.15	29.97	3.6	42	0.23	3.7	2.12	1.26	0.05	0.24	<0.01	0.009	0.32	16.6	1.7	0.65	641
173	B00264436	Rock Pulp	0.08	0.41	1.5	0.010	14	74	0.71	0.06	0.46	0.28	66.36	6.9	51	1.33	8.9	1.88	2.47	0.10	0.27	<0.01	0.021	0.30	34.0	6.2	0.31	451
174	B00264417	Rock Pulp	1.54	0.43	6.1	<0.005	14	129	0.14	2.08	0.13	16.44	17.68	8.8	50	0.15	582.7	2.31	1.31	0.19	0.93	0.10	0.046	0.18	8.6	2.4	0.19	341
175	B00264430	Rock Pulp	0.34	0.65	1.2	<0.005	15	93	0.40	0.02	4.77	0.25	54.22	25.5	36	0.84	38.1	5.29	2.51	0.11	0.09	<0.01	0.011	0.51	28.4	3.8	1.50	2469
176	B00264429	Rock Pulp	0.24	0.35	11.9	<0.005	15	59	0.17	0.30	1.28	0.08	92.94	6.2	74	0.30	6.3	3.53	1.23	0.11	0.20	<0.01	0.005	0.29	44.9	1.3	0.40	564
177	B00264428	Rock Pulp	0.66	0.37	0.2	<0.005	12	100	0.19	1.01	1.93	0.49	44.19	6.7	66	0.48	8.9	2.66	1.18	0.06	0.13	<0.01	0.007	0.32	24.4	1.7	0.62	886
178	B00264427	Rock Pulp	0.17	0.41	0.4	<0.005	15	82	0.21	0.03	1.95	0.70	33.90	17.6	63	0.32	54.9	3.55	1.51	0.07	0.12	<0.01	0.009	0.31	18.6	2.1	0.45	666
179	B00264424	Rock Pulp	0.07	0.89	0.3	<0.005	17	200	0.25	0.02	1.23	0.13	34.74	2.2	57	1.11	50.1	2.54	3.12	0.08	0.41	<0.01	0.007	0.62	19.0	5.3	0.66	783
180	B00264423	Rock Pulp	0.49	0.44	4.2	<0.005	16	205	0.20	0.46	1.19	0.45	31.41	3.1	88	0.10	50.8	1.48	1.61	<0.05	0.38	<0.01	<0.005	0.33	17.2	1.6	0.37	574

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

PAGE: 4a of 5
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Method	IMS-130																									
		Analyte	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
		Sample Type																										
181	B00264422	Rock Pulp	0.09	0.62	2.0	<0.005	<10	254	0.23	0.37	1.09	0.09	51.46	3.3	58	0.14	16.5	1.49	1.91	0.10	0.27	<0.01	0.007	0.51	23.1	1.8	0.25	377
182	B00264421	Rock Pulp	0.02	0.67	<0.1	<0.005	<10	277	0.29	0.02	2.23	0.16	72.08	1.8	43	0.79	1.5	2.76	1.97	0.10	0.22	<0.01	0.010	0.43	32.4	2.1	0.88	632
183	B00264420	Rock Pulp	0.05	0.77	6.8	<0.005	<10	261	0.24	0.08	2.07	0.20	43.86	3.9	45	0.65	21.3	2.67	2.52	0.08	0.38	<0.01	0.011	0.52	19.8	3.9	0.78	598
184	B00264419	Rock Pulp	0.07	1.03	1.1	<0.005	<10	310	0.28	0.13	1.50	0.15	58.53	3.2	38	0.50	5.0	3.08	3.52	0.11	0.32	<0.01	0.016	0.58	26.3	5.7	0.76	619
185	B00264418	Rock Pulp	0.11	0.76	0.6	<0.005	<10	298	0.24	0.33	1.00	0.16	50.50	4.1	43	0.47	39.8	2.23	2.51	0.10	0.25	<0.01	0.012	0.46	22.9	3.3	0.48	361
186	B00264426	Rock Pulp	0.14	0.45	3.0	<0.005	<10	84	0.18	0.15	1.66	0.13	35.62	3.6	50	0.31	5.1	1.82	1.29	0.06	0.32	<0.01	0.008	0.35	16.0	1.2	0.51	864
187	B00264425	Rock Pulp	0.20	0.40	4.2	<0.005	<10	77	0.17	0.18	2.15	0.30	24.19	5.6	50	0.21	6.5	2.75	1.08	0.06	0.28	<0.01	0.009	0.30	11.8	1.2	0.68	1057
188	B00264413	Rock Pulp	0.04	0.45	1.3	<0.005	<10	278	0.20	0.07	1.62	0.29	47.13	4.6	50	0.25	25.7	1.60	1.24	0.08	0.09	<0.01	0.007	0.36	21.2	1.6	0.42	477
189	B00264411	Rock Pulp	0.12	0.37	2.9	<0.005	<10	99	0.17	0.24	1.50	0.10	30.81	3.6	61	0.18	4.9	1.34	1.06	0.06	0.14	<0.01	0.007	0.30	13.9	0.9	0.42	600
190	B00264412	Rock Pulp	1.09	0.56	14.4	0.010	<10	91	0.25	0.88	0.54	6.55	33.96	5.3	60	0.24	64.4	2.12	1.74	0.09	0.19	0.11	0.085	0.44	15.4	1.7	0.17	183
191	B00264415	Rock Pulp	4.93	1.09	6.6	0.010	<10	241	0.20	9.79	0.09	0.18	46.09	4.7	25	0.25	330.1	3.08	3.34	0.22	1.00	<0.01	<0.005	0.29	20.6	6.8	0.58	492
192	B00264416	Rock Pulp	0.06	1.59	64.6	<0.005	<10	165	0.16	0.08	0.02	0.01	65.35	3.1	55	0.17	26.5	2.82	5.03	0.14	0.39	<0.01	0.005	0.19	30.1	8.6	1.01	305
193	B00264414	Rock Pulp	0.08	0.65	33.2	<0.005	<10	211	0.16	0.17	1.77	0.35	39.85	0.8	51	0.43	10.4	1.35	1.74	0.06	0.77	<0.01	0.008	0.37	18.9	3.2	0.94	584
194	B00264410	Rock Pulp	0.13	0.50	1.0	<0.005	<10	78	0.24	0.11	2.02	0.14	83.04	2.2	73	0.39	5.2	0.73	1.65	0.11	0.08	<0.01	0.010	0.28	36.6	2.6	0.24	326
195	B00264409	Rock Pulp	0.04	0.49	46.5	<0.005	<10	196	0.24	0.04	1.86	0.27	54.69	1.1	67	1.17	10.3	2.23	1.46	0.09	0.15	<0.01	<0.005	0.33	24.7	3.7	0.77	589
196	B00264406	Rock Pulp	0.04	0.48	0.2	<0.005	<10	166	0.25	0.03	2.31	0.17	70.08	2.2	73	5.06	3.4	1.47	2.41	0.10	0.15	<0.01	0.016	0.37	31.7	4.4	0.65	866
197	B00264407	Rock Pulp	0.06	0.74	<0.1	<0.005	<10	114	0.24	0.02	1.02	0.11	36.29	3.3	69	1.17	8.6	2.31	2.13	0.09	0.32	<0.01	0.009	0.57	16.4	6.2	0.47	845
198	B00264408	Rock Pulp	0.17	0.44	0.3	<0.005	<10	219	0.20	0.03	2.21	0.92	44.54	6.0	64	0.33	45.2	3.32	1.30	0.09	0.12	<0.01	0.012	0.35	20.2	1.7	0.59	871
199	B00264401	Rock Pulp	0.15	0.42	25.1	<0.005	<10	87	0.17	0.11	0.19	0.07	29.82	3.8	64	0.29	7.3	2.01	1.06	0.08	0.36	0.13	0.005	0.25	13.5	3.3	0.04	24
200	B00264402	Rock Pulp	0.16	0.42	689.8	<0.005	<10	90	0.19	0.79	1.10	0.48	32.76	5.4	62	0.24	43.5	2.83	1.19	0.08	0.14	0.01	0.008	0.30	15.8	1.0	0.42	270
201	B00264403	Rock Pulp	0.24	0.40	1.8	<0.005	<10	81	0.21	0.39	0.06	0.24	37.73	0.7	51	0.38	14.6	0.46	1.20	0.08	0.35	<0.01	<0.005	0.30	16.9	1.6	0.03	23
202	B00264404	Rock Pulp	0.24	0.46	17.6	<0.005	<10	88	0.24	1.73	0.18	0.14	25.98	4.6	66	0.26	23.5	1.50	1.42	0.09	0.45	<0.01	0.006	0.33	12.9	1.4	0.10	97
203	B00264405	Rock Pulp	0.06	0.59	2576.0	<0.005	<10	145	0.16	0.06	2.76	0.16	115.03	1.7	28	0.85	13.4	1.54	1.87	0.13	0.51	0.01	0.007	0.44	53.0	3.6	1.54	726
QUALITY ASSURANCE / QUALITY CONTROL																												
Pulp Replicates (1-30):																												
1	B00264216	Rock Pulp	0.12	0.45	0.9	<0.005	<10	118	0.19	0.07	1.94	0.08	42.49	3.4	52	0.21	7.1	2.07	1.39	0.07	0.25	<0.01	0.008	0.34	20.8	1.5	0.55	555
1 R	B00264216 (Rep)	Rep	0.12	0.45	1.3	<0.005	<10	122	0.20	0.07	1.99	0.09	46.20	3.5	53	0.23	6.8	2.12	1.45	0.08	0.26	<0.01	0.008	0.35	22.4	1.5	0.57	570
10	B00264245	Rock Pulp																										
10 R	B00264245 (Rep)	Rep																										
Pulp Replicates (31-60):																												
31	B00264264	Rock Pulp	0.45	0.66	0.3	<0.005	<10	130	0.38	0.86	2.74	0.49	78.06	22.0	68	2.02	115.1	4.36	2.06	0.10	0.12	<0.01	0.017	0.47	36.6	4.4	0.69	957
31 R	B00264264 (Rep)	Rep	0.51	0.68	0.1	<0.005	<10	128	0.39	0.94	2.80	0.45	87.17	25.0	70	2.18	120.5	4.45	2.24	0.10	0.12	<0.01	0.016	0.48	40.6	4.5	0.7	961
42	B00264276	Rock Pulp																										
42 R	B00264276 (Rep)	Rep																										
Pulp Replicates (61-90):																												
61	B00264292	Rock Pulp	0.39	0.54	7.8	0.007	<10	212	0.22	0.33	0.57	0.55	27.07	2.1	93	0.22	32.0	1.00	1.68	0.06	0.38	0.05	0.009	0.39	13.3	2.0	0.15	205
61 R	B00264292 (Rep)	Rep	0.39	0.55	7.4	0.007	<10	217	0.22	0.33	0.57	0.54	26.96	2.0	93	0.21	28.9	0.99	1.55	0.06	0.42	0.06	0.010	0.39	12.9	1.9	0.15	201
Pulp Replicates (91-120):																												
91	B00264322	Rock Pulp	0.24	0.43	1.2	<0.005	<10	205	0.25	<0.01	1.30	0.30	67.53	0.7	89	0.23	167.7	1.21	1.38	0.07	0.17	<0.01	0.006	0.33	32.5	1.1	0.38	468
91 R	B00264322 (Rep)	Rep	0.23	0.43	0.2	<0.005	<10	202	0.24	<0.01	1.27	0.31	68.25	0.7	87	0.22	162.1	1.18	1.41	0.07	0.16	<0.01	0.006	0.32	32.8	1.0	0.37	452
Pulp Replicates (121-150):																												
121	B00264348	Rock Pulp	0.06	1.06	<0.1	<0.005	<10	153	0.33	0.04	2.00	0.13	79.71	5.0	77	3.29	17.4	2.55	2.93	0.14	0.13	<0.01	0.018	0.58	38.3	6.0	0.66	629
121 R	B00264348 (Rep)	Rep	0.06	1.05	0.3	<0.005	<10	153	0.30	0.04	1.98	0.12	77.66	4.5	77	3.14	16.0	2.51	2.67	0.12	0.13	<0.01	0.018	0.58	37.4	5.3	0.65	623
Pulp Replicates (151-180):																												
178	B00264427	Rock Pulp	0.17	0.41	0.4	<0.005	15	82	0.21	0.03	1.95	0.70	33.90	17.6	63	0.32	54.9	3.55	1.51	0.07	0.12	<0.01	0.009	0.31	18.6	2.1	0.45	666
178 R	B00264427 (Rep)	Rep	0.18	0.41	0.4	<0.005	16	82	0.20	0.04	1.92	0.67	33.17	16.7	63	0.32	53.1	3.62	1.44	0.07	0.13	<0.01	0.010	0.31	18.2	1.9	0.46	674
Pulp Replicates (181-203):																												
181	B00264422	Rock Pulp	0.09	0.62	2.0	<0.005	<10	254	0.23	0.37	1.09	0.09	51.46	3.3	58	0.14	16.5	1.49	1.91	0.10	0.27	<0.01	0.007	0.51	23.1	1.8	0.25	377
181 R	B00264422 (Rep)	Rep	0.10	0.60	1.7	<0.005	<10	251	0.23	0.36	1.06	0.08	51.81	3.3	56	0.15	16.1	1.46	1.91	0.09	0.26	<0.01	0.007	0.50	23.2	1.8	0.24	369

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Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No. Sample ID	Method	IMS-130																											
	Analyte	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
	Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
	MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
	Sample Type																										
Reference Material -1																											
STD OREAS 24b (1)	(for 1-30)	0.090	3.27	8.00	<0.005	<10	145	1.75	0.70	0.45	0.08	62.0	16.1	105	9.16	37.8	3.88	10.93	0.25	0.59	<0.01	0.055	1.19	31.0	48.5	1.39	334
STD OREAS 24b (2)	(for 31-60)	0.080	3.35	8.10	<0.005	<10	145	1.78	0.69	0.48	0.07	62.0	16.2	106	9.31	35.9	3.96	10.95	0.21	0.56	0.01	0.048	1.20	29.5	46.4	1.42	348
STD OREAS 24b (3)	(for 61-90)	0.080	3.35	8.10	<0.005	<10	145	1.78	0.69	0.48	0.07	62.0	16.2	106	9.31	35.9	3.96	10.95	0.21	0.56	0.01	0.048	1.20	29.5	46.4	1.42	348
STD OREAS 24b (4)	(for 91-120)	0.060	3.35	8.50	<0.005	<10	149	1.72	0.69	0.47	0.07	62.5	15.8	105	9.40	37.2	3.87	11.12	0.19	0.56	0.02	0.051	1.20	31.1	46.8	1.41	349
STD OREAS 24b (5)	(for 121-150)	0.090	3.20	8.30	<0.005	20	143	1.66	0.73	0.45	0.08	59.8	15.8	102	9.27	36.4	3.92	11.05	0.23	0.52	0.01	0.055	1.18	30.1	46.6	1.40	331
STD OREAS 24b (6)	(for 151-180)	0.090	3.20	8.30	<0.005	20	143	1.66	0.73	0.45	0.08	59.8	15.8	102	9.27	36.4	3.92	11.05	0.23	0.52	0.01	0.055	1.18	30.1	46.6	1.40	331
STD OREAS 24b (7)	(for 181-203)	0.080	3.15	7.90	<0.005	<10	146	1.75	0.69	0.45	0.06	62.7	15.7	100	9.34	37.0	3.90	11.10	0.24	0.58	<0.01	0.049	1.18	29.3	45.9	1.38	339
True Value STD OREAS 24b		**0.058**	**3.15**	**7.96**	**0.002**	**6.23**	**146**	**1.65**	**0.73**	**0.461**	**0.046**	**61.0**	**15.7**	**106**	**9.15**	**36.4**	**3.93**	**10.80**	**0.26**	**0.52**	**<0.01**	**0.048**	**1.17**	**29.2**	**45.6**	**1.36**	**350**
% Difference (1)	(for 1-30)	55.2	3.8	0.5			-0.7	6.1	-4.1	-2.4	73.9	1.6	2.5	-0.9	0.1	3.8	-1.3	1.2	-3.8	13.5		14.6	1.7	6.2	6.4	2.2	-4.6
% Difference (2)	(for 31-60)	37.9	6.3	1.8			-0.7	7.9	-5.5	4.1	52.2	1.6	3.2	0.0	1.7	-1.4	0.8	1.4	-19.2	7.7		0.0	2.6	1.0	1.8	4.4	-0.6
% Difference (3)	(for 61-90)	37.9	6.3	1.8			-0.7	7.9	-5.5	4.1	52.2	1.6	3.2	0.0	1.7	-1.4	0.8	1.4	-19.2	7.7		0.0	2.6	1.0	1.8	4.4	-0.6
% Difference (4)	(for 91-120)	3.4	6.3	6.8			2.1	4.2	-5.5	2.0	52.2	2.5	0.6	-0.9	2.7	2.2	-1.5	3.0	-26.9	7.7		6.2	2.6	6.5	2.6	3.7	-0.3
% Difference (5)	(for 121-150)	55.2	1.6	4.3			-2.1	0.6	0.0	-2.4	73.9	-2.0	0.6	-3.8	1.3	0.0	-0.3	2.3	-11.5	0.0		14.6	0.9	3.1	2.2	2.9	-5.4
% Difference (6)	(for 151-180)	55.2	1.6	4.3			-2.1	0.6	0.0	-2.4	73.9	-2.0	0.6	-3.8	1.3	0.0	-0.3	2.3	-11.5	0.0		14.6	0.9	3.1	2.2	2.9	-5.4
% Difference (7)	(for 181-203)	37.9	0.0	-0.8			0.0	6.1	-5.5	-2.4	30.4	2.8	0.0	-5.7	2.1	1.6	-0.8	2.8	-7.7	11.5		2.1	0.9	0.3	0.7	1.5	-3.1
Tolerance (%)		***NR***	***0.2***	***0.95***	***NR***	***NR***	***12***	***NR***	***0.13***	***0.030***	***NR***	***NR***	***1.9***	***9***	***0.56***	***3.3***	***0.21***	***1.1***	***NR***	***NR***	***NR***	***NR***	***0.07***	***NR***	***3.5***	***0.07***	***20***
Reference Material -2																											
STD CDN-ME-1206 (1)	(for 1-30)																										
STD CDN-ME-1206 (2)	(for 31-60)																										
True Value STD CDN-ME-1206																											
% Difference (1)	(for 1-30)																										
% Difference (2)	(for 31-60)																										
Tolerance (+/-)																											
Method Blank:																											
Method Blank - 1	(for 1-30)	<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5
Method Blank - 2	(for 31-60)	<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5
Method Blank - 3	(for 61-90)	<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5
Method Blank - 4	(for 91-120)	<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5
Method Blank - 5	(for 121-150)	<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5
Method Blank - 6	(for 151-180)	<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5
Method Blank - 7	(for 181-203)	<0.01	<0.01	0.2	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5

Notes:

Job #'s: (1-30): MA0079-NOV15; (31-60): MA0087-NOV15, (61-90): MA0092-NOV15, (91-120): MA0093-NOV15, (121-150): MA0014-DEC15, (151-180): MA0023-DEC15, and (181-203): MA0024-DEC15.

Analytical Methods (IMS-130):

A 0.5 g of pulp sample is leached in hot (95°C) 3:1 aqua regia digestion followed by ICP Mass Spec analysis.

Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5 g).

Refractory and graphitic samples can limit Au solubility.

Method Code	Analytical Method Description
ICA-6Zn	0.4g, 3:1 Aqua Regia, ICP-AES, Ore Grade

Abbreviations:

R / Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)

D / Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a second split of the original client sample received)

MDL = Measurable Detection Limit

IND = Indeterminate

On Tolerance:

Any one element in a run reporting outside tolerance limits does not constitute failure of the standard.

All 'True Values' indicated in green are not certified values - they are indicative values.

NR = Not reported in the Certificate Of Analysis (COA)

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Method																										Overlimit ICA-6Zn
		Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)	Zinc (Zn)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	10
		Sample Type																										
1	B00264216	Rock Pulp	1.83	0.02	0.15	4.0	763	26.2	12.4	<0.001	0.45	0.07	1.3	<0.2	<0.2	64.9	<0.01	0.03	9.8	0.006	0.09	0.82	3	0.07	7.93	49	14.5	
2	B00264220	Rock Pulp	0.53	0.02	0.11	161.4	528	2.7	60.9	<0.001	0.02	0.33	8.0	<0.2	0.2	69.6	<0.01	0.04	0.8	0.279	0.85	0.09	78	0.07	9.78	94	3.6	
3	B00264218	Rock Pulp	2.05	0.02	0.16	7.5	922	21.9	12.7	<0.001	2.28	0.66	1.1	3.1	<0.2	52.8	<0.01	0.1	8.9	0.005	0.19	0.71	4	0.10	8.29	177	18.3	
4	B00264217	Rock Pulp	1.14	0.02	0.13	4.0	782	2.3	17.5	<0.001	0.12	<0.05	1.8	0.2	0.2	78.6	<0.01	0.05	16.2	0.005	0.15	1.22	4	0.11	10.09	31	13.1	
5	B00264219	Rock Pulp	2.88	0.01	0.15	8.1	912	685.8	13.3	<0.001	4.50	1.87	1.4	3.1	<0.2	96.3	<0.01	0.13	4.7	<0.005	0.39	1.06	4	0.11	9.37	112	24.9	
6	B00264221	Rock Pulp	2.84	0.02	0.07	4.2	158	35.8	15.4	<0.001	0.88	0.44	0.7	0.7	0.4	4.8	<0.01	0.06	11.9	<0.005	0.73	4.25	2	0.14	4.16	90	44.7	
7	B00264242	Rock Pulp	8.53	0.02	0.81	7.6	723	46.7	43.7	<0.001	1.40	2.22	2.7	2.1	1.1	67.6	<0.01	0.06	30.5	0.021	0.74	8.39	6	0.41	12.40	91	35.7	
8	B00264243	Rock Pulp	3.32	0.01	0.09	3.7	49	37.6	13.1	<0.001	0.22	0.11	0.6	5.4	<0.2	45.1	<0.01	0.04	11.3	<0.005	0.20	2.66	2	0.18	4.72	36	17.7	
9	B00264244	Rock Pulp	3.76	0.02	0.09	3.1	143	21.3	12.2	<0.001	0.66	0.28	0.5	4.9	1.3	5.5	<0.01	0.02	17.3	<0.005	0.18	5.67	1	0.22	2.69	110	15.0	
10	B00264245	Rock Pulp	1.60	<0.01	0.06	8.2	15	8933.8	6.5	0.002	2.24	15.27	1.1	122.8	0.8	31.9	<0.01	0.08	15.0	<0.005	0.16	3.56	9	0.06	6.64	>10000	35.5	40976
11	B00264457	Rock Pulp	4.42	<0.01	0.09	2.4	<10	12.9	17.5	0.001	<0.01	0.56	0.6	<0.2	0.3	1.8	<0.01	0.04	27.2	<0.005	0.25	5.78	<1	0.14	7.36	3	41.0	
12	B00264213	Rock Pulp	2.68	0.01	0.12	4.8	113	28.2	11.1	0.001	0.68	0.47	0.6	1.4	0.4	230.8	<0.01	0.05	13.7	<0.005	0.21	2.27	2	0.14	18.01	52	16.0	
13	B00264214	Rock Pulp	1.50	<0.01	0.07	2.7	52	20.5	4.1	0.002	1.03	2.39	0.1	0.2	<0.2	4.5	<0.01	<0.01	7.9	<0.005	0.09	1.53	4	0.06	2.66	71	10.4	
14	B00264215	Rock Pulp	2.26	0.03	0.15	3.7	137	17.4	12.1	0.001	0.78	1.05	0.4	1.1	0.4	86.5	<0.01	0.03	15.5	<0.005	0.18	2.08	2	0.11	10.91	55	24.1	
15	B00264250	Rock Pulp	0.56	0.02	0.10	58.6	715	6.8	19.4	0.001	0.05	11.72	3.6	0.3	<0.2	180.3	<0.01	0.05	1.8	0.038	0.55	0.11	17	0.12	18.64	12	3.5	
16	B00264246	Rock Pulp	2.37	0.03	0.65	6.0	704	180.1	12.8	<0.001	0.55	0.17	1.3	3.4	0.3	70.2	<0.01	0.08	14.3	0.019	0.07	1.15	3	0.11	7.46	250	9.8	
17	B00264247	Rock Pulp	4.26	0.02	0.74	4.1	704	5.5	24.4	<0.001	0.20	0.13	1.8	0.8	0.3	64.8	<0.01	0.03	13.9	0.02	0.26	0.81	4	0.17	8.08	65	11.5	
18	B00264248	Rock Pulp	3.75	0.02	0.13	8.4	45	140.7	14.7	0.001	4.62	3.27	0.6	13.5	0.4	3.8	<0.01	0.08	13.7	<0.005	0.76	5.15	4	0.23	2.29	25	28.8	
19	B00264249	Rock Pulp	4.11	0.01	0.08	5.7	74	198.6	12.9	0.001	3.38	4.74	0.9	29.2	1.3	44.8	<0.01	0.04	13.2	<0.005	1.19	5.30	3	1.54	3.39	1415	72.7	
20	B00264252	Rock Pulp	2.86	0.02	0.14	9.0	844	20.8	14.8	<0.001	0.97	0.17	1.2	3.4	<0.2	73.8	<0.01	0.06	11.1	0.006	0.20	0.90	4	0.16	9.10	43	10.0	
21	B00264251	Rock Pulp	2.80	0.02	0.36	7.2	692	2.0	19.4	<0.001	0.96	0.25	1.5	1.4	<0.2	39.8	<0.01	0.04	11.1	0.008	0.55	1.05	3	0.10	8.43	29	16.1	
22	B00264256	Rock Pulp	0.83	0.01	<0.05	73.3	502	9.7	12.4	0.002	0.01	0.2	7.3	0.6	<0.2	134.7	<0.01	0.09	1.4	0.018	1.57	0.07	58	0.09	20.18	77	1.7	
23	B00264253	Rock Pulp	1.79	0.02	0.16	5.9	736	52.7	14.1	<0.001	0.46	0.08	1.2	0.7	0.4	58.1	<0.01	0.05	11.0	<0.005	0.09	0.99	3	0.10	7.82	53	17.1	
24	B00264254	Rock Pulp	2.39	0.02	0.60	4.7	821	3.2	14.0	<0.001	0.44	0.09	1.4	0.6	0.2	65	<0.01	0.06	11.2	0.02	0.10	0.92	3	0.12	8.17	13	14.3	
25	B00264255	Rock Pulp	2.41	0.01	0.08	3.4	948	2.9	11.5	<0.001	0.15	0.25	1.2	0.4	<0.2	42.4	<0.01	0.04	14.3	<0.005	0.37	1.08	3	0.16	9.30	40	16.8	
26	B00264257	Rock Pulp	3.13	0.01	0.20	5.6	113	37.0	8.9	0.001	1.57	3.2	0.6	0.3	0.2	194.1	<0.01	0.04	17.8	<0.005	1.44	3.12	2	0.23	15.43	12	12.6	
27	B00264259	Rock Pulp	0.56	0.01	0.06	67.6	563	7.7	9.0	0.001	<0.01	0.14	6.9	0.3	<0.2	124.4	<0.01	0.05	1.5	0.061	0.37	<0.05	58	0.11	12.70	66	<0.5	
28	B00264258	Rock Pulp	3.08	0.01	0.15	3.2	137	21.7	9.3	<0.001	0.36	1.11	0.4	0.2	<0.2	87.3	<0.01	0.04	17.5	<0.005	1.14	2.40	2	0.26	10.55	5	14.0	
29	B00264260	Rock Pulp	2.46	0.02	0.10	5.8	691	21.3	9.6	<0.001	0.42	0.15	1.3	1.2	<0.2	102.5	<0.01	0.04	10.6	<0.005	0.09	0.55	3	0.10	6.91	37	7.6	
30	B00264261	Rock Pulp	1.93	0.01	0.15	4.8	276	160.6	12.9	<0.001	3.45	58.14	0.7	9.0	0.3	16.5	<0.01	0.11	5.0	<0.005	0.53	1.84	2	0.76	3.82	5150	16.6	
31	B00264264	Rock Pulp	2.14	0.02	0.24	17.7	1097	27.3	16.5	0.002	1.11	0.39	4.3	<0.2	<0.2	86.2	<0.01	0.07	13.8	0.011	0.29	2.10	23	<0.05	17.24	109	10.6	
32	B00264263	Rock Pulp	1.89	0.02	0.57	7.2	876	4.9	15.9	<0.001	0.58	0.05	1.6	3.6	<0.2	31.2	<0.01	0.05	25.0	<0.005	0.11	2.03	3	<0.05	15.10	42	6.2	
33	B00264267	Rock Pulp	1.86	0.01	0.14	6.8	596	15.2	14.0	<0.001	1.39	0.39	1.7	0.7	<0.2	122.5	<0.01	0.04	8.0	0.005	0.10	0.59	3	0.10	8.11	82	8.8	
34	B00264265	Rock Pulp	1.99	0.02	<0.05	5.7	804	13.1	13.6	<0.001	0.65	0.34	1.3	2.6	<0.2	67.9	<0.01	0.03	21.6	<0.005	0.16	0.83	3	0.12	8.05	66	12.0	
35	B00264266	Rock Pulp	3.40	0.02	0.14	11.1	906	32.8	14.3	<0.001	3.86	0.56	1.5	1.4	<0.2	81.6	<0.01	0.04	7.9	0.006	0.10	0.80	3	0.07	9.56	43	13.7	
36	B00264268	Rock Pulp	7.02	0.02	<0.05	13.7	162	57.9	14.1	0.005	1.37	2.85	0.6	2.5	0.4	4.4	<0.01	0.05	11.0	<0.005	0.70	4.76	21	0.15	2.74	73	22.6	
37	B00264269	Rock Pulp	3.31	0.02	<0.05	2.8	82	191.4	12.6	<0.001	0.07	0.37	0.7	8.8	0.4	44.5	<0.01	<0.01	13.6	<0.005	1.21	3.60	2	0.06	6.03	355	24.8	
38	B00264262	Rock Pulp	0.64	0.03	0.11	74.6	540	15.9	93.8	0.001	0.06	0.85	15.3	2.9	<0.2	54.3	<0.01	<0.01	0.6	0.336	5.10	0.13	144	0.07	9.66	71	1.8	
39	B00264270	Rock Pulp	2.39	0.03	0.22	7.0	740	2.6	21.4	<0.001	0.37	0.06	2.2	0.8	<0.2	104.5	<0.01	0.01	12.2	0.017	0.22	0.76	6	0.15	10.15	31	14.3	
40	B00264271	Rock Pulp	2.25	0.02	<0.05	7.9	720	7.6	13.3	<0.001	1.06	0.81	1.6	1.5	<0.2	111.1	<0.01	0.03	7.0	<0.005	0.31	0.80	3	0.07	7.75	46	13.3	
41	B00264275	Rock Pulp	7.25	0.03	0.19	3.5	148	844.5	32.6	0.004	0.34	1.98	1.1	10.1	1.7	4.8	<0.01	<0.01	12.7	0.015	4.26	3.82	3	0.23	4.49	1071	43.3	
42	B00264276	Rock Pulp	9.56	0.03	0.11	5.0	223	4129.5	33.5	0.005	1.10	9.69	1.3	45.5	1.4	7.5	<0.01	0.04	19.3	0.009	5.62	7.24	3	0.22	7.71	>10000	96.8	16630
43	B00264272	Rock Pulp	3.10	0.02	0.06	4.8	265	87.1	13.7	0.001	0.23	1.91	0.8	4.9	0.3	56.8	<0.01	<0.01	14.9	<0.005	0.47	4.63	2	0.10	6.70	201	39.9	
44	B00264273	Rock Pulp	1.80	0.02	<0.05	2.7	253	30.1	15.3	<0.001	0.27	0.18	0.8	1.8	0.4	42.2	<0.01	0.01	11.7	<0.005	0.60	2.93	2	0.09	6.09	86	35.3	
45	B00264274	Rock Pulp	3.35	0.02	0.06	8.7	323	364.5	19.4	<0.001	0.55	1.38	1.0	<0.2	1.8	4.8	<0.01	0.06	12.5	<0.005	1.37	3.59	2	0.14	4.76	941	31.0	
46	B00264277	Rock Pulp	0.31	0.04	0.12	241.7	640	7.6	169.0	<0.001	0.18	1.12	7.6	0.4	<0.2	80.8	<0.01	0.01	0.5	0.519	4.30	0.07	93	0.11	8.09	130	8.7	
47	B00264278	Rock Pulp	0.26	0.02	0.07	142.6	631	6.1	51.1	<0.001	0.39	4.55	6.0	0.4	<0.2	160.9	<0.01	0.03	0.7	0.219	1.24	0.11	40	0.12	11.26	55	11.6	
48	B00264280	Rock Pulp	1.47	0.02	<0.05	10.3	685	23.7	14.6	<0.001	0.05	0.77	1.3	<0.2	<0.2	36.7	<0.01	0.02	13.8	0.007	0.13	0.98	4	0.08	7.84	33	7.8	
49	B00264279	Rock Pulp	2.26	0.05	1.00	5.9	774	5.5	29.2	<0.001	0.45	<0.05	4.6	0.6	<0.2	88.7	<0.01	0.03	22.4	0.046	0.19	2.19	8	0.11	21.29	46	7.3	
50	B00264282	Rock Pulp	3.46	0.02	0.35	4.9	733	14.1	14.6	<0.001	0.10	<0.05	2.0	0.6	<0.2	108.6	<0.01	<0.01	11.0	0.011	0.08	0.79	3	0.14	10.11	75	11.4	
51	B00264281	Rock Pulp	3.34	0.02	0.56	4.8	591	3.5	18.2	<0.001	0.23	<0.05	2.1	1.1	<0.2	78.2	<0.01	0.01	11.5	0.025	0.10	0.91	4	0.11	8.71	37	21.8	
52	B00264283	Rock Pulp	2.88	0.04	0.12	6.4	926	9.3	14.5	<0.001	0.88	1.6	1.7	<0.2	<0.2	41.3	<0.01	<0.01	17.9	0.006	0.24	1.92	3	0.12	10.33	40	10.7	
53	B00264284	Rock Pulp	3.09	0.02	<0.05	7.4	972	76.5	12.7	<0.001	0.76	0.38	1.5	2.0	<0.2	55.5	<0.01	<0.01	9.9	<0.005	0.20	1.71	3	<0.05	9.83	75	11.2	
54	B00264286	Rock Pulp	3.84	0.02	0.08	2.7	50	143.7	14.6	<0.001	1.38	5.57	0.7	6.9	0.4	12.8	<0.01	0.01	15.2	<0.005	2.95	4.86	2	0.11	5.52	173	45.1	
55	B00264285	Rock Pulp	2.64	0.02	0.08	3.3	304	16.1	16.0	<0.001	1.06	0.86	0.8	1.7	0.3	16.5	<0.01	0.01	10.9	<0.005	0.80	2.28	2	0.10	5.47	28	24.4	
56	B00264287	Rock Pulp	2.84	0.02	0.10	2.8	75	116.6	14.1	<0.001	0.28	4.64	0.7	0.8	0.5	3.3	<0.01	0.02	16.0	<0.005	0.31	2.64	1	0.16	3.68	25	37.0	
57	B00264288	Rock Pulp	3.21	0.01	0.17	3.0	79	778.4	15.7	<0.001	1.87	23.26	0.7	15.4	0.6	2	<0.01	0.04	17.3	0.005	0.38	3.33	1	0.15	2.91	164	40.5	
58	B00264289	Rock Pulp	2.90	0.01	0.23	3.6	93	8812.7	17.0	<0.001	3.34	19.54	0.8	21.2	0.5	28.7	<0.01	0.05	15.6	<0.005	0.91	6.05	2	0.13	4.88	5955	33.3	
59	B00264290	Rock Pulp	3.19	0.01	0.14	3.0	71	777.5	15.9	<0.001	0.83	2.66	0.7	4.2	0.4	33.6	<0.01	<0.01	17.9	<0.005	0.61	3.25	2	0.12	5.06	438	25.1	
60	B00264291	Rock Pulp	2.82	0.01	0.13	17.2	89	1571.5	11.8	<0.001	2.13	74.49	0.5	8.9	0.3	36	<0.01	0.05	17.6	<0.005	0.49	5.81	2	0.14	5.27	1604	24.2	

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Method																										Overlimit ICA-6Zn
		Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)	Zinc (Zn)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	10
		Sample Type																										
61	B00264292	Rock Pulp	3.09	0.02	0.18	4.0	111	103.7	16.1	<0.001	0.75	2.02	0.6	1.9	0.7	17	<0.01	0.02	16.4	<0.005	0.61	1.85	1	0.27	4.14	118	18.7	
62	B00264293	Rock Pulp	3.52	0.01	0.23	3.6	116	90.0	16.0	<0.001	0.74	3.11	0.6	1.4	0.5	25.7	<0.01	0.03	17.6	<0.005	0.69	3.77	2	0.20	5.31	120	23.5	
63	B00264294	Rock Pulp	2.40	0.01	0.15	3.6	120	175.3	11.0	<0.001	0.94	1.47	0.5	<0.2	0.4	7.3	<0.01	0.01	13.4	<0.005	0.81	3.66	1	0.15	3.26	290	22.5	
64	B00264295	Rock Pulp	3.86	0.02	0.23	3.0	62	162.8	16.2	<0.001	1.27	16.7	0.6	0.4	0.9	18.7	<0.01	<0.01	18.0	0.006	2.01	5.73	2	0.24	4.71	39	26.1	
65	B00264296	Rock Pulp	6.19	0.02	0.11	2.7	104	3.0	16.1	<0.001	0.02	0.1	0.6	<0.2	0.3	18.7	<0.01	<0.01	19.9	<0.005	0.08	1.92	2	0.11	5.25	10	21.6	
66	B00264297	Rock Pulp	1.71	0.02	0.41	5.0	823	2.4	21.4	0.001	0.46	0.06	1.4	0.3	0.3	33.6	<0.01	<0.01	16.5	0.02	0.18	1.34	4	0.17	15.21	38	14.6	
67	B00264301	Rock Pulp	2.89	0.02	0.52	2.8	172	131.2	12.5	<0.001	0.94	1.1	0.5	2.2	0.6	15.5	<0.01	<0.01	25.0	<0.005	0.83	4.43	2	0.56	11.36	74	13.6	
68	B00264302	Rock Pulp	3.34	0.02	0.22	4.4	99	414.0	10.1	<0.001	0.56	1.92	0.4	8.3	0.5	16.6	<0.01	0.02	19.1	<0.005	0.63	3.51	2	0.21	9.42	1631	15.1	
69	B00264298	Rock Pulp	145.33	0.02	0.08	43.9	621	2598.7	10.8	0.061	1.59	43.13	0.5	30.6	0.7	13.3	<0.01	0.29	8.3	<0.005	2.05	3.86	28	1.57	5.55	2719	15.5	
70	B00264299	Rock Pulp	3.69	0.03	0.06	3.1	21	32.3	14.0	<0.001	0.89	5.52	0.5	5.0	0.6	3.9	<0.01	0.05	17.2	<0.005	3.33	4.77	1	0.23	2.06	20	13.5	
71	B00264300	Rock Pulp	5.40	0.04	0.08	3.3	72	44.6	11.4	0.002	0.17	11.61	0.9	4.5	0.4	43.7	<0.01	0.02	20.9	<0.005	2.93	4.29	3	0.20	8.62	191	30.6	
72	B00264304	Rock Pulp	2.19	0.03	0.10	3.9	522	8.9	10.9	<0.001	0.03	0.13	1.0	0.5	<0.2	56.7	<0.01	<0.01	18.6	<0.005	0.10	0.99	3	0.15	7.51	30	11.2	
73	B00264305	Rock Pulp	2.03	0.03	0.32	4.1	496	6.1	11.6	<0.001	0.07	0.05	1.0	0.3	0.2	30	<0.01	0.01	10.6	0.01	0.06	0.79	3	0.22	5.64	49	16.3	
74	B00264306	Rock Pulp	1.29	0.03	0.23	4.8	645	8.4	9.7	<0.001	0.12	<0.05	1.4	0.3	<0.2	86.9	<0.01	0.02	9.0	0.006	0.05	0.44	3	0.18	6.98	46	7.3	
75	B00264303	Rock Pulp	1.29	0.03	0.59	5.5	659	2.5	40.4	<0.001	0.08	0.1	2.7	<0.2	0.9	72.3	<0.01	0.03	16.0	0.075	0.29	1.02	10	0.14	9.28	63	10.8	
76	B00264309	Rock Pulp	0.38	0.02	0.06	65.9	417	7.9	7.3	<0.001	0.04	0.06	25.8	1.5	<0.2	121.2	<0.01	0.03	1.0	0.032	0.22	<0.05	148	0.06	16.74	101	0.6	
77	B00264310	Rock Pulp	0.90	0.03	0.11	55.8	503	62.2	39.5	0.001	0.08	0.27	6.0	<0.2	<0.2	186.9	<0.01	0.03	1.1	0.199	0.83	0.10	57	0.09	10.18	150	<0.5	
78	B00264307	Rock Pulp	2.70	0.03	0.19	4.9	592	3.3	15.6	<0.001	0.40	<0.05	1.6	0.5	0.3	76.7	<0.01	0.03	14.0	0.006	0.08	1.55	3	0.09	9.36	36	13.5	
79	B00264308	Rock Pulp	1.07	0.02	<0.05	2.4	804	1.6	5.7	<0.001	0.33	0.11	0.8	<0.2	<0.2	147.3	<0.01	0.01	3.8	<0.005	0.05	0.42	3	<0.05	4.62	42	5.5	
80	B00264311	Rock Pulp	3.26	0.02	0.08	6.2	747	5.8	15.2	<0.001	0.80	0.71	1.3	0.4	<0.2	42.1	<0.01	0.02	6.6	<0.005	0.18	0.59	3	0.12	6.47	57	7.2	
81	B00264315	Rock Pulp	0.81	0.01	0.10	75.8	533	14.0	15.6	0.001	0.10	0.66	8.2	<0.2	<0.2	186.6	<0.01	0.05	1.0	0.106	0.55	0.06	59	0.20	9.84	66	1.1	
82	B00264313	Rock Pulp	3.15	0.02	0.14	2.1	59	196.6	13.6	<0.001	0.53	17.22	0.5	4.5	0.9	3.8	<0.01	<0.01	15.8	<0.005	1.91	4.56	<1	0.20	2.61	295	21.5	
83	B00264312	Rock Pulp	5.09	0.01	0.13	14.7	809	13.8	13.1	0.023	0.99	4.19	1.1	0.7	0.3	53	<0.01	<0.01	12.2	0.005	0.49	9.23	4	0.19	7.97	134	21.2	
84	B00264314	Rock Pulp	5.26	0.01	0.18	2.8	152	74.2	9.9	<0.001	0.30	1.02	0.4	0.9	0.3	74.8	<0.01	0.01	18.7	<0.005	6.15	2.04	2	0.18	11.67	9	12.5	
85	B00264316	Rock Pulp	2.38	0.02	0.49	3.1	931	2.3	14.4	<0.001	0.02	0.08	0.9	<0.2	0.3	20.7	<0.01	<0.01	25.6	0.015	0.15	0.85	3	0.09	10.20	9	10.8	
86	B00264317	Rock Pulp	0.69	0.02	0.25	5.4	1456	4.9	22.5	<0.001	0.21	0.09	5.4	<0.2	<0.2	111.4	<0.01	0.02	8.3	0.052	0.16	1.34	37	0.08	14.54	42	4.1	
87	B00264318	Rock Pulp	4.73	0.02	0.09	7.2	887	6.0	15.6	<0.001	0.24	0.11	1.5	0.3	0.2	52.9	<0.01	0.02	22.1	0.006	0.09	2.17	5	0.11	10.44	16	5.7	
88	B00264319	Rock Pulp	2.33	0.02	0.07	7.2	664	10.9	13.5	<0.001	2.34	2.73	1.3	<0.2	0.3	48.9	<0.01	0.01	6.1	<0.005	0.50	0.72	3	0.13	6.56	41	12.1	
89	B00264320	Rock Pulp	2.62	0.02	0.06	7.0	718	23.7	13.3	<0.001	1.71	1.18	1.5	<0.2	<0.2	61.9	<0.01	0.02	6.1	<0.005	0.43	1.03	3	0.10	8.02	68	20.8	
90	B00264323	Rock Pulp	0.85	0.03	0.11	3.1	643	7.8	11.9	<0.001	0.03	<0.05	1.1	<0.2	<0.2	47.8	<0.01	0.01	15.5	<0.005	0.06	1.27	3	0.12	8.26	24	10.9	
91	B00264322	Rock Pulp	1.55	0.04	0.18	4.8	582	2.2	11.4	<0.001	0.04	<0.05	1.0	0.2	0.2	43.2	<0.01	<0.01	16.7	<0.005	0.06	0.82	3	0.12	6.99	42	7.5	
92	B00264321	Rock Pulp	2.88	0.01	0.14	3.3	727	3.0	13.9	0.002	0.02	<0.05	0.4	<0.2	0.3	27.8	<0.01	<0.01	15.7	<0.005	0.07	3.97	3	0.15	7.98	5	5.9	
93	B00264324	Rock Pulp	2.13	0.01	0.10	4.2	775	2.9	15.2	0.001	0.29	<0.05	1.4	0.6	0.2	73	<0.01	<0.01	22.3	0.009	0.10	2.51	4	0.12	11.27	30	7.0	
94	B00264325	Rock Pulp	0.60	0.01	<0.05	53.0	307	18.2	13.7	<0.001	0.28	23.42	7.7	0.5	<0.2	236.8	<0.01	0.02	0.6	0.013	5.30	0.39	37	0.08	14.86	169	2.6	
95	B00264326	Rock Pulp	0.48	0.03	0.19	67.4	628	1.1	4.6	<0.001	0.04	1.16	3.3	0.3	<0.2	16.9	<0.01	<0.01	0.3	0.241	0.49	0.06	59	0.12	4.96	64	1.3	
96	B00264458	Rock Pulp	2.67	0.01	0.10	2.8	277	15.9	9.4	<0.001	0.12	0.15	0.5	1.0	0.3	37.3	<0.01	<0.01	12.5	<0.005	0.08	4.56	2	0.10	4.72	25	19.5	
97	B00264327	Rock Pulp	2.90	0.02	0.20	5.4	714	26.4	16.8	<0.001	0.66	0.9	1.5	<0.2	0.3	67	<0.01	<0.01	6.1	0.008	0.29	0.46	3	4.58	8.51	85	9.0	
98	B00264328	Rock Pulp	2.31	0.02	0.09	5.2	647	2.9	15.4	<0.001	0.87	0.38	1.0	0.4	0.2	25.3	<0.01	<0.01	8.3	<0.005	0.34	0.58	3	0.29	5.87	52	7.9	
99	B00264329	Rock Pulp	3.24	0.02	0.10	8.6	1020	147.5	16.1	<0.001	2.05	1.05	1.1	0.8	0.2	34.8	<0.01	<0.01	6.7	0.005	0.37	1.17	4	0.41	7.58	61	10.2	
100	B00264330	Rock Pulp	4.62	0.02	0.10	9.5	243	43.1	14.1	0.001	0.80	4.07	0.6	4.5	0.5	3.2	<0.01	<0.01	17.5	<0.005	0.37	5.72	10	0.26	4.01	50	24.5	
101	B00264331	Rock Pulp	5.84	0.01	0.12	3.6	91	26.7	11.7	0.003	0.82	1.28	0.4	1.2	0.2	21.1	<0.01	<0.01	23.5	<0.005	0.39	8.15	2	0.27	3.56	65	20.2	
102	B00264332	Rock Pulp	3.12	0.01	0.10	3.3	83	34.2	11.4	<0.001	2.37	17.32	0.6	4.8	0.3	42.5	<0.01	<0.01	17.6	<0.005	8.43	4.94	3	0.18	5.96	230	31.4	
103	B00264335	Rock Pulp	3.61	0.04	0.62	2.9	697	59.6	18.4	<0.001	0.03	0.07	1.3	0.5	0.4	69.3	<0.01	0.05	13.4	0.021	0.13	0.95	4	0.11	9.39	364	12.9	
104	B00264334	Rock Pulp	2.22	0.03	0.53	4.3	722	6.0	16.7	0.001	0.70	<0.05	1.2	0.3	0.3	58	<0.01	<0.01	14.5	0.015	0.13	2.24	3	0.12	10.57	49	21.2	
105	B00264333	Rock Pulp	2.31	0.02	0.31	10.2	1094	42.6	18.6	<0.001	3.01	0.37	1.4	2.6	0.4	80	0.01	0.06	5.0	0.011	0.12	0.43	4	0.27	10.78	41	7.2	
106	B00264336	Rock Pulp	4.93	0.02	0.14	2.6	160	47.4	14.1	0.002	1.19	1.14	0.5	0.7	0.4	19.3	<0.01	<0.01	29.8	<0.005	0.41	3.00	2	0.18	7.18	25	22.8	
107	B00264337	Rock Pulp	4.38	0.05	<0.05	3.9	62	21.6	9.9	0.001	1.12	3.16	0.5	0.7	0.4	20	<0.01	0.03	14.4	<0.005	0.59	4.91	2	0.25	4.23	14	17.1	
108	B00264338	Rock Pulp	9.66	0.02	0.05	9.3	235	43.7	10.1	0.023	0.61	10.02	0.4	1.7	0.4	19.4	<0.01	<0.01	14.5	<0.005	1.10	3.81	11	0.11	4.33	330	18.8	
109	B00264339	Rock Pulp	0.53	0.01	<0.05	45.0	356	8.6	16.2	<0.001	<0.01	0.08	5.8	<0.2	<0.2	290.9	<0.01	0.04	0.4	0.015	0.09	<0.05	14	0.09	9.20	58	1.5	
110	B00264345	Rock Pulp	9.20	0.02	0.10	35.4	312	21.5	19.1	0.010	0.10	0.72	3.4	1.2	<0.2	85.9	0.01	<0.01	19.6	0.029	4.73	3.86	36	0.19	15.60	47	9.6	
111	B00264340	Rock Pulp	1.02	0.03	1.03	4.7	681	3.1	20.6	<0.001	0.17	<0.05	1.9	0.5	<0.2	68.8	<0.01	<0.01	11.5	0.027	0.16	1.18	4	0.14	9.73	16	19.4	
112	B00264341	Rock Pulp	1.52	0.02	0.28	4.6	409	7.7	10.2	<0.001	0.79	0.15	0.9	0.9	<0.2	118.1	<0.01	<0.01	10.3	<0.005	0.08	1.07	2	0.08	5.81	59	13.7	
113	B00264342	Rock Pulp	0.95	0.01	0.16	3.2	603	4.0	8.8	<0.001	0.23	<0.05	0.9	0.2	<0.2	91.5	<0.01	<0.01	6.0	<0.005	0.09	0.41	2	0.07	5.82	36	5.4	
114	B00264343	Rock Pulp	2.26	0.01	0.10	6.6	718	15.6	13.0	<0.001	0.85	1.06	1.4	0.6	<0.2	101.4	<0.01	0.02	6.9	<0.005	0.31	0.65	3	0.09	9.18	82	14.5	
115	B00264344	Rock Pulp	2.36	0.01	0.13	2.8	235	3.2	11.5	<0.001	0.21	0.08	0.7	0.5	<0.2	50.3	<0.01	<0.01	11.9	<0.005	0.23	3.85	2	0.07	5.80	49	25.7	
116	B00264346	Rock Pulp	3.70	0.02	0.16	2.5	154	2738.4	19.6	0.001	2.15	17.23	0.8	8.0	1.6	43.6	<0.01	<0.01	36.0	<0.005	3.82	18.83	3	0.17	11.83	2426	38.3	
117	B00264347	Rock Pulp	4.06	0.03	0.19	3.5	196	16.5	16.1	<0.001	0.07	0.11	0.9	0.5	0.3	37.7	<0.01	<0.01	16.0	<0.005	0.10	2.48	2	0.11	6.00	24	20.2	
118	B00264350	Rock Pulp	3.11	0.03	0.53	6.1	793	5.0	15.1	<0.001	0.51	0.22	1.5	<0.2	<0.2	38	<0.01	<0.01	11.9	0.006	0.10	1.07	4	0.11	10.16	48	11.5	
119	B00264351	Rock Pulp	0.36	0.02	<0.05	0.7	833	2.8	1.5	<0.001	0.55	0.06	0.1	<0.2	<0.2	29.3	<0.01	<0.01	1.4	<0.005	0.06	0.16	2	<0.05	1.21	24	2.1	
120	B00264349	Rock Pulp	0.95	0.02	0.36	5.8	1511	3.4	29.8	<0.001	0.45	<0.05	7.2	0.5	0.2	64.2	<0.01	<0.01	7.0	0.032	0.24	0.43	46	0.14	18.57	53	7.9	

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Method																										Overlimit ICA-6Zn
		Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)	Zinc (Zn)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	10
		Sample Type																										
121	B00264348	Rock Pulp	2.47	0.02	0.53	5.7	771	2.9	21.7	0.001	0.27	<0.05	1.5	<0.2	0.5	39.3	<0.01	<0.01	21.4	0.012	0.16	1.51	5	0.11	10.54	39	6.9	
122	B00264357	Rock Pulp	0.27	0.04	0.23	66.0	456	8.4	274.1	<0.001	0.17	0.3	11.3	2.4	0.3	350.7	<0.01	0.02	1.3	0.342	14.39	<0.05	77	0.10	24.23	214	1.2	
123	B00264358	Rock Pulp	9.29	0.01	0.29	3.0	138	2.0	17.4	0.001	0.20	0.13	0.5	<0.2	0.6	78.6	0.02	<0.01	22.1	0.007	0.37	1.37	2	0.12	23.58	12	26.5	
124	B00264354	Rock Pulp	4.83	0.01	0.32	4.8	125	143.9	13.3	0.001	4.90	36.99	0.5	27.7	1.1	12.1	<0.01	0.02	11.8	<0.005	2.80	3.64	3	0.17	4.30	1326	29.1	
125	B00264355	Rock Pulp	2.92	0.02	0.35	3.6	109	153.0	15.4	<0.001	2.14	4.73	0.5	12.4	0.9	4.2	<0.01	<0.01	16.6	0.005	2.81	3.15	2	0.16	2.87	1389	20.6	
126	B00264356	Rock Pulp	3.75	0.02	0.29	2.8	46	477.2	14.4	0.002	1.77	11.61	0.5	11.7	0.6	34.7	<0.01	<0.01	15.3	<0.005	4.21	4.24	2	0.19	4.03	1652	21.8	
127	B00264352	Rock Pulp	3.31	0.01	0.40	2.5	98	156.3	12.1	0.002	1.46	9.52	0.4	3.1	0.7	1.9	<0.01	<0.01	17.8	<0.005	0.35	6.76	<1	0.16	3.64	85	32.0	
128	B00264353	Rock Pulp	2.48	0.01	0.25	2.3	31	129.5	12.1	<0.001	0.84	2.05	0.4	2.2	0.7	4.5	<0.01	<0.01	12.3	<0.005	0.35	2.39	<1	0.12	2.40	145	16.7	
129	B00264360	Rock Pulp	1.93	0.01	0.22	6.0	706	63.4	11.9	<0.001	2.18	0.46	0.8	3.2	0.3	51.2	<0.01	<0.01	5.2	0.006	0.11	0.84	3	0.08	6.05	309	13.1	
130	B00264361	Rock Pulp	1.69	0.02	0.16	2.0	765	2.3	11.6	<0.001	0.12	<0.05	0.7	<0.2	0.2	34	<0.01	<0.01	12.6	0.006	0.10	0.91	2	0.08	5.95	217	11.0	
131	B00264362	Rock Pulp	2.54	0.04	0.68	6.5	884	26.5	18.6	<0.001	0.35	<0.05	3.9	0.7	0.4	64.1	<0.01	0.06	11.6	0.015	0.15	0.75	4	0.16	14.01	51	11.4	
132	B00264363	Rock Pulp	3.43	0.02	1.07	3.6	724	3.9	31.8	<0.001	0.41	0.09	2.8	<0.2	0.7	95.8	<0.01	0.04	17.0	0.047	0.34	1.10	6	0.40	20.49	74	8.7	
133	B00264359	Rock Pulp	1.98	0.02	0.21	3.5	704	101.3	16.2	<0.001	0.69	0.08	1.0	0.8	0.5	48	<0.01	<0.01	12.9	0.006	0.16	0.59	3	0.09	6.80	86	7.1	
134	B00264364	Rock Pulp	0.78	0.03	0.06	4.2	596	3.8	11.4	<0.001	0.16	0.42	1.5	0.5	0.5	88.6	<0.01	<0.01	12.2	<0.005	0.17	3.34	4	0.08	9.00	29	22.8	
135	B00264365	Rock Pulp	2.60	0.01	0.12	4.4	49	19.4	9.1	0.001	0.88	1.93	0.6	3.5	0.6	29.7	<0.01	<0.01	17.2	<0.005	0.25	8.76	4	0.11	6.65	29	32.6	
136	B00264367	Rock Pulp	1.90	0.02	0.13	4.3	635	11.5	15.2	<0.001	0.51	0.37	0.9	1.1	0.4	49.4	<0.01	<0.01	8.4	0.007	0.37	0.72	3	0.10	6.06	46	12.2	
137	B00264366	Rock Pulp	4.18	0.02	0.13	9.9	871	5.6	14.3	0.031	0.26	5.84	1.0	1.2	0.4	53.4	<0.01	<0.01	9.2	0.006	0.47	2.75	5	0.13	6.56	47	13.1	
138	B00264376	Rock Pulp	2.33	0.05	0.15	6.2	805	67.4	9.8	<0.001	1.08	0.07	1.4	2.8	0.3	34.3	<0.01	0.03	28.2	0.009	0.08	0.96	4	0.09	10.08	59	12.3	
139	B00264375	Rock Pulp	2.02	0.02	0.22	5.0	713	3.1	9.8	<0.001	0.23	<0.05	1.9	1.1	0.3	48.4	<0.01	<0.01	17.4	<0.005	0.07	0.93	6	0.07	10.16	80	8.8	
140	B00264374	Rock Pulp	2.29	0.05	0.08	2.9	743	3.2	10.4	0.001	0.03	<0.05	2.6	<0.2	0.3	54.1	<0.01	<0.01	21.3	<0.005	0.07	1.00	8	0.07	11.15	36	8.3	
141	B00264373	Rock Pulp	1.84	0.02	0.19	6.3	677	39.0	11.6	<0.001	2.09	0.23	1.1	4.8	0.3	84.5	<0.01	0.02	7.0	0.005	0.12	0.69	4	0.08	7.01	16	9.2	
142	B00264372	Rock Pulp	1.62	0.02	0.37	9.3	710	59.9	11.7	<0.001	0.90	<0.05	1.2	2.2	0.3	86.6	<0.01	<0.01	7.6	0.007	0.10	0.55	4	0.07	6.98	59	6.2	
143	B00264371	Rock Pulp	2.65	0.03	0.11	4.0	1022	10.8	13.2	0.001	0.44	<0.05	2.6	0.3	0.3	127.5	<0.01	<0.01	9.5	<0.005	0.10	0.92	6	0.06	14.29	91	10.0	
144	B00264370	Rock Pulp	3.17	0.02	0.22	5.2	767	47.3	11.9	<0.001	1.20	0.21	1.1	1.6	0.3	83.7	<0.01	<0.01	7.7	0.006	0.12	0.77	3	0.07	7.41	52	8.4	
145	B00264369	Rock Pulp	1.69	0.02	0.18	5.3	692	66.6	9.1	<0.001	0.95	0.2	0.8	1.0	0.3	65.1	<0.01	<0.01	6.4	<0.005	0.08	0.96	2	0.06	6.60	95	7.4	
146	B00264368	Rock Pulp	2.09	0.03	0.21	3.9	821	4.6	12.8	<0.001	0.36	<0.05	0.9	0.2	0.4	33.4	<0.01	<0.01	12.0	0.005	0.08	0.85	3	0.08	8.38	33	9.9	
147	B00264456	Rock Pulp	1.70	0.02	0.10	3.8	695	11.4	8.5	<0.001	1.10	0.31	0.8	<0.2	0.2	30.9	<0.01	<0.01	5.8	<0.005	0.17	0.66	3	0.05	4.66	43	8.1	
148	B00264455	Rock Pulp	2.75	0.03	0.18	6.7	809	11.3	12.6	<0.001	1.17	0.86	1.0	<0.2	0.4	47.8	<0.01	<0.01	8.4	<0.005	0.25	0.74	3	0.10	6.63	36	13.4	
149	B00264454	Rock Pulp	4.73	0.03	0.13	1.6	108	26.4	13.0	0.001	0.08	1.07	0.7	2.4	0.7	10.1	<0.01	<0.01	24.8	<0.005	4.42	4.08	2	0.15	4.70	112	28.2	
150	B00264453	Rock Pulp	5.94	0.03	0.23	1.6	30	60.8	12.2	0.001	0.17	2.36	0.6	5.8	0.7	5.5	<0.01	<0.01	18.5	0.006	4.68	6.01	2	0.16	3.75	565	43.9	
151	B00264452	Rock Pulp	4.42	0.02	<0.05	2.5	123	30.5	11.2	0.001	0.06	0.86	0.6	3.1	<0.2	75.1	<0.01	0.03	18.6	<0.005	2.78	3.53	2	0.09	8.83	562	32.0	
152	B00264444	Rock Pulp	3.67	0.01	1.49	5.8	246	63.1	13.5	0.001	0.70	0.16	0.6	0.4	<0.2	15.6	<0.01	0.01	41.8	0.007	0.23	7.69	2	0.47	20.56	2	6.0	
153	B00264451	Rock Pulp	3.97	0.02	0.32	4.1	404	4.0	18.5	0.001	0.86	<0.05	1.0	1.4	<0.2	30.5	<0.01	<0.01	8.8	0.008	0.1	2.33	4	0.14	6.98	18	11.8	
154	B00264445	Rock Pulp	0.65	0.01	<0.05	59.3	565	4.1	28.9	0.001	<0.01	0.06	9.5	0.2	<0.2	100.8	<0.01	0.01	1.5	0.056	0.33	<0.05	63	<0.05	18.48	48	<0.5	
155	B00264443	Rock Pulp	0.89	0.01	1.89	7.1	170	8.1	11.1	0.002	0.06	0.15	0.5	<0.2	<0.2	231.9	<0.01	0.03	39.7	0.005	0.11	6.55	2	0.43	47.66	<2	5.3	
156	B00264450	Rock Pulp	2.26	0.02	0.24	7.6	694	291.4	11.2	<0.001	0.69	<0.05	1.1	4.1	<0.2	44.5	<0.01	0.04	9.9	<0.005	0.1	2.57	3	0.24	8.23	1522	11.9	
157	B00264448	Rock Pulp	2.36	0.02	0.31	8.3	604	6.1	21.3	<0.001	0.70	<0.05	2.2	1.7	<0.2	127.9	<0.01	0.03	5.9	0.018	0.15	0.76	4	0.07	10.70	34	18.8	
158	B00264449	Rock Pulp	1.72	0.04	0.05	4.5	736	3.0	10.9	<0.001	0.32	<0.05	2.0	1.4	<0.2	74.1	<0.01	0.02	8.9	<0.005	0.06	0.76	3	<0.05	9.79	15	12.8	
159	B00264447	Rock Pulp	2.04	0.02	0.14	7.3	668	4.1	23.6	<0.001	0.40	0.07	2.9	0.5	<0.2	111.4	<0.01	0.01	6.5	0.015	0.29	0.85	5	0.10	11.96	35	21.2	
160	B00264446	Rock Pulp	2.62	0.01	0.10	3.3	290	17.8	11.9	<0.001	0.61	0.22	0.6	1.8	<0.2	13	<0.01	<0.01	17.0	<0.005	0.15	4.00	2	0.11	6.00	41	34.8	
161	B00264459	Rock Pulp	2.77	0.02	0.16	3.4	259	45.5	13.0	<0.001	2.28	1.74	0.6	1.4	0.2	21.3	<0.01	<0.01	16.8	<0.005	0.14	4.71	2	0.16	5.44	1144	47.8	
162	B00264442	Rock Pulp	3.30	0.04	<0.05	9.0	717	9.4	8.3	<0.001	1.39	2.25	1.9	<0.2	<0.2	61.3	<0.01	<0.01	5.5	<0.005	0.1	0.83	3	<0.05	8.39	54	13.2	
163	B00264440	Rock Pulp	2.20	0.01	0.08	7.6	771	74.9	12.9	<0.001	2.17	0.49	0.9	0.6	<0.2	15.8	<0.01	<0.01	6.7	<0.005	0.1	0.99	2	<0.05	7.51	140	15.4	
164	B00264441	Rock Pulp	1.83	0.03	0.64	7.1	703	2.9	21.2	<0.001	0.31	<0.05	2.0	<0.2	<0.2	30.1	<0.01	<0.01	7.9	0.013	0.16	0.82	4	<0.05	8.24	129	14.5	
165	B00264439	Rock Pulp	2.54	0.01	0.19	6.7	121	333.6	7.2	<0.001	1.49	5.04	0.4	6.0	<0.2	18.3	<0.01	<0.01	12.6	<0.005	1.26	4.93	2	<0.05	7.87	33	44.1	
166	B00264431	Rock Pulp	2.33	0.02	0.91	7.6	683	4.6	29.1	0.001	0.23	0.28	1.8	<0.2	<0.2	21.2	<0.01	<0.01	22.1	0.032	0.23	1.54	5	0.10	14.61	18	17.9	
167	B00264432	Rock Pulp	2.20	0.02	0.53	6.5	683	4.0	32.4	0.001	0.08	0.34	2.4	<0.2	0.3	43.6	<0.01	<0.01	23.4	0.053	0.24	1.55	6	0.17	19.40	12	16.5	
168	B00264433	Rock Pulp	2.33	0.02	0.18	5.0	612	6.3	14.7	<0.001	0.11	0.16	1.0	<0.2	<0.2	24.6	<0.01	<0.01	15.2	<0.005	0.11	2.16	3	0.05	8.59	20	10.3	
169	B00264434	Rock Pulp	1.91	0.02	0.18	3.2	686	2.0	14.8	<0.001	0.08	0.13	1.0	<0.2	<0.2	27.6	<0.01	<0.01	12.6	<0.005	0.12	1.33	3	0.05	8.42	26	10.6	
170	B00264437	Rock Pulp	0.46	0.01	<0.05	66.3	542	20.1	7.7	0.001	0.05	0.26	5.8	<0.2	<0.2	96	<0.01	<0.01	0.7	0.036	0.21	<0.05	59	<0.05	14.97	57	<0.5	
171	B00264438	Rock Pulp	0.86	0.02	<0.05	58.9	509	7.2	1.6	<0.001	<0.01	0.2	15.2	<0.2	<0.2	88.6	<0.01	0.03	0.3	0.103	0.04	<0.05	117	<0.05	8.69	56	1.0	
172	B00264435	Rock Pulp	2.59	0.02	<0.05	5.2	726	8.9	12.6	<0.001	0.62	0.88	1.3	0.5	<0.2	52.8	<0.01	0.02	5.6	<0.005	0.17	0.77	3	<0.05	8.83	32	11.5	
173	B00264436	Rock Pulp	3.97	0.02	0.14	11.0	839	5.7	18.9	<0.001	0.15	2.33	2.0	0.2	2.1	27.1	0.02	0.1	9.8	<0.005	0.21	0.92	3	0.36	9.22	40	12.3	
174	B00264417	Rock Pulp	5.63	0.02	<0.05	4.1	140	332.7	8.3	0.001	1.10	1.03	0.5	63.2	0.3	2.3	<0.01	<0.01	13.7	<0.005	0.75	6.39	2	0.06	3.16	2041	45.9	
175	B00264430	Rock Pulp	1.44	0.02	<0.05	9.6	1408	6.3	30.1	0.001	1.64	0.07	5.4	6.3	<0.2	81.4	<0.01	0.01	8.0	0.018	0.17	0.46	22	0.07	16.04	76	7.1	
176	B00264429	Rock Pulp	2.00	0.02	0.06	7.9	714	31.1	11.1	<0.001	3.09	0.32	0.9	0.3	<0.2	34	<0.01	<0.01	23.1	<0.005	0.08	1.61	3	<0.05	8.28	17	10.9	
177	B00264428	Rock Pulp	2.93	0.01	0.18	7.7	748	132.9	13.7	<0.001	0.67	0.06	1.0	1.1	<0.2	44.3	<0.01	0.02	14.9	<0.005	0.06	1.29	2	<0.05	8.72	112	7.6	
178	B00264427	Rock Pulp	2.06	0.01	0.08	10.2	659	5.7	15.1	<0.001	2.08	0.23	1.2	1.9	<0.2	34	<0.01	<0.01	9.1	<0.005	0.08	1.01	3	0.07	7.68	217	8.3	
179	B00264424	Rock Pulp	0.63	0.02	0.94	4.4	557	2.3	43.0	<0.001	0.40	0.08	1.8	0.5	<0.2	45.2	<0.01	<0.01	6.2	0.052	0.31	0.80	4	0.06	8.08	74	19.3	
180	B00264423	Rock Pulp	2.32	0.02	0.18	4.9	778	166.0	14.4	<0.001	0.46	0.23	1.3	1.0	<0.2	52	<0.01	<0.01	5.6	0.006	0.07	0.81	2	0.11	8.74	80	24.4	

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)	Overlimit Zinc (Zn)
		Method																										ICA-6Zn
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	10
		Sample Type																										
181	B00264422	Rock Pulp	1.30	0.03	0.38	4.8	938	10.7	15.4	<0.001	0.59	0.18	1.2	<0.2	0.4	40.9	<0.01	0.03	11.2	0.012	0.09	1.04	3	0.11	9.80	13	14.9	
182	B00264421	Rock Pulp	1.52	0.02	0.56	3.4	781	3.8	15.7	<0.001	0.02	0.47	1.6	<0.2	0.4	128.9	<0.01	0.05	14.5	0.008	0.14	0.87	4	0.11	8.47	27	11.3	
183	B00264420	Rock Pulp	1.53	0.03	1.17	5.3	684	4.5	19.7	<0.001	0.08	<0.05	1.7	0.3	0.5	107.4	<0.01	0.05	9.1	0.031	0.19	0.99	5	0.13	7.98	34	20.0	
184	B00264419	Rock Pulp	2.20	0.03	1.06	3.3	829	4.6	21.4	<0.001	0.01	0.06	2.2	<0.2	0.8	81.2	<0.01	0.03	11.1	0.041	0.21	0.76	6	0.15	7.59	42	16.4	
185	B00264418	Rock Pulp	2.41	0.03	1.35	6.2	693	6.1	16.7	<0.001	0.38	0.14	1.5	0.7	0.5	57.7	<0.01	0.03	9.8	0.035	0.21	0.75	4	0.14	6.14	40	12.8	
186	B00264426	Rock Pulp	2.12	0.02	0.26	4.4	799	27.4	14.1	<0.001	0.61	0.16	0.9	0.2	0.3	36.5	<0.01	0.04	7.3	0.008	0.08	1.02	2	0.07	6.96	56	16.8	
187	B00264425	Rock Pulp	2.37	0.01	0.16	5.5	690	36.3	12.3	<0.001	1.13	0.17	0.9	0.3	0.3	44	<0.01	0.04	4.9	0.005	0.07	0.80	3	0.06	6.51	128	15.6	
188	B00264413	Rock Pulp	2.09	0.02	0.23	8.7	819	2.5	11.9	<0.001	0.22	0.09	1.2	0.3	0.2	73.6	<0.01	0.04	8.7	0.007	0.06	0.38	4	0.31	8.29	24	4.1	
189	B00264411	Rock Pulp	1.93	0.01	0.13	6.2	708	20.7	10.8	<0.001	0.31	0.27	0.8	<0.2	0.2	28.5	<0.01	0.03	6.9	<0.005	0.06	0.74	2	0.07	6.11	34	7.3	
190	B00264412	Rock Pulp	3.23	0.02	0.14	6.2	833	387.6	15.5	<0.001	1.86	1.44	1.0	2.7	0.4	12.6	<0.01	0.04	6.5	0.006	0.17	0.73	3	0.08	6.03	1266	9.0	
191	B00264415	Rock Pulp	5.83	0.02	0.42	2.2	244	914.3	12.6	<0.001	0.92	4.16	0.6	26.1	0.7	4.7	0.01	0.04	18.5	0.007	2.14	4.74	2	0.17	5.40	108	46.6	
192	B00264416	Rock Pulp	3.96	0.02	0.16	4.4	60	5.2	7.7	0.007	0.16	1.19	0.6	1.5	0.4	3.1	<0.01	0.03	21.6	<0.005	0.58	3.05	7	0.09	3.98	103	18.1	
193	B00264414	Rock Pulp	4.29	0.03	0.19	3.6	91	12.9	16.8	<0.001	0.02	0.37	0.6	0.7	0.6	30.9	<0.01	0.03	19.8	0.007	1.83	3.58	2	0.15	5.88	59	38.5	
194	B00264410	Rock Pulp	3.60	0.02	0.10	3.4	399	27.4	10.7	<0.001	0.16	1.23	0.5	0.4	0.4	32.8	<0.01	0.02	28.4	<0.005	0.24	4.02	1	0.08	8.73	45	4.0	
195	B00264409	Rock Pulp	1.87	0.02	0.28	3.1	719	4.1	13.4	0.001	0.26	0.55	1.4	<0.2	0.3	78.6	<0.01	0.03	11.5	<0.005	0.68	0.65	3	0.12	8.47	52	8.1	
196	B00264406	Rock Pulp	2.26	0.08	0.39	4.2	807	4.0	18.4	0.001	0.35	<0.05	5.3	0.3	0.5	55.7	<0.01	0.04	19.3	0.034	0.18	1.15	9	0.13	14.25	27	6.9	
197	B00264407	Rock Pulp	2.60	0.02	1.14	5.4	509	2.1	26.3	<0.001	0.43	<0.05	0.9	<0.2	0.4	31.4	<0.01	0.02	9.1	0.031	0.26	1.61	3	0.10	5.82	50	14.7	
198	B00264408	Rock Pulp	2.66	0.03	0.21	4.4	676	3.2	12.6	<0.001	0.91	<0.05	1.3	1.0	0.3	94.9	<0.01	0.03	9.1	<0.005	0.1	0.51	3	0.09	8.01	110	6.0	
199	B00264401	Rock Pulp	3.15	0.01	0.18	4.8	597	29.8	9.2	<0.001	2.07	2	0.5	0.2	0.2	6.4	<0.01	0.02	7.6	<0.005	0.19	1.93	2	0.94	5.21	32	14.9	
200	B00264402	Rock Pulp	2.21	0.02	0.11	5.5	818	36.0	12.1	<0.001	1.39	5.7	0.9	0.9	0.3	30.8	<0.01	0.05	6.5	<0.005	0.24	0.48	3	0.13	6.07	71	7.2	
201	B00264403	Rock Pulp	3.90	0.02	0.08	2.9	279	28.8	14.0	<0.001	0.24	1.33	0.5	0.9	0.5	3.2	<0.01	0.18	15.6	<0.005	1.08	3.71	1	0.14	3.78	37	17.7	
202	B00264404	Rock Pulp	2.89	0.02	0.10	7.9	201	59.3	14.3	0.001	1.49	14.36	0.6	2.2	0.6	4.9	<0.01	0.08	10.4	<0.005	0.72	3.18	4	0.13	3.38	28	21.8	
203	B00264405	Rock Pulp	4.43	0.02	0.27	2.2	159	7.6	21.1	<0.001	0.21	2.34	0.7	2.0	0.6	45.9	0.01	0.06	40.7	0.011	0.92	7.26	2	0.20	10.01	51	24.4	
QUALITY ASSURANCE / QUALITY CONTROL																												
Pulp Replicates (1-30):																												
1	B00264216	Rock Pulp	1.83	0.02	0.15	4.0	763	26.2	12.4	<0.001	0.45	0.07	1.3	<0.2	<0.2	64.9	<0.01	0.03	9.8	0.006	0.09	0.82	3	0.07	7.93	49	14.5	
1 R	B00264216 (Rep)	Rep	1.78	0.02	0.15	4.1	765	25.7	12.9	<0.001	0.45	0.07	1.4	0.3	0.3	65.9	<0.01	0.02	10.0	0.006	0.08	0.84	3	0.07	8.29	48	15.3	
10	B00264245	Rock Pulp																										40976
10 R	B00264245 (Rep)	Rep																										41490
Pulp Replicates (31-60):																												
31	B00264264	Rock Pulp	2.14	0.02	0.24	17.7	1097	27.3	16.5	0.002	1.11	0.39	4.3	<0.2	<0.2	86.2	<0.01	0.07	13.8	0.011	0.29	2.1	23	<0.05	17.24	109	10.6	
31 R	B00264264 (Rep)	Rep	2.24	0.02	0.22	19.3	1116	30.4	20.3	0.002	1.15	0.43	4.8	0.8	<0.2	88	<0.01	0.04	14.6	0.011	0.31	2.26	23	<0.05	19.04	108	11.4	
42	B00264276	Rock Pulp																										16630
42 R	B00264276 (Rep)	Rep																										16778
Pulp Replicates (61-90):																												
61	B00264292	Rock Pulp	3.09	0.02	0.18	4.0	111	103.7	16.1	<0.001	0.75	2.02	0.6	1.9	0.7	17	<0.01	0.02	16.4	<0.005	0.61	1.85	1	0.27	4.14	118	18.7	
61 R	B00264292 (Rep)	Rep	3.39	0.02	0.19	3.7	115	103.7	14.1	<0.001	0.74	2.01	0.5	1.9	0.7	17.3	<0.01	0.02	17.9	<0.005	0.63	1.81	2	0.27	4.23	115	19.5	
Pulp Replicates (91-120):																												
91	B00264322	Rock Pulp	1.55	0.04	0.18	4.8	582	2.2	11.4	<0.001	0.04	<0.05	1	0.2	0.2	43.2	<0.01	<0.01	16.7	<0.005	0.06	0.82	3	0.12	6.99	42	7.5	
91 R	B00264322 (Rep)	Rep	1.55	0.04	0.13	4.3	584	2.2	11.2	<0.001	0.04	<0.05	1	0.3	<0.2	42.7	<0.01	<0.01	16.6	<0.005	0.06	0.79	3	0.14	6.89	42	7.4	
Pulp Replicates (121-150):																												
121	B00264348	Rock Pulp	2.47	0.02	0.53	5.7	771	2.9	21.7	0.001	0.27	<0.05	1.5	<0.2	0.5	39.3	<0.01	<0.01	21.4	0.012	0.16	1.51	5	0.11	10.54	39	6.9	
121 R	B00264348 (Rep)	Rep	2.58	0.02	0.50	5.2	773	3.1	20.5	0.001	0.27	<0.05	1.3	0.3	0.5	38.5	<0.01	<0.01	21.0	0.011	0.16	1.46	5	0.09	9.98	37	6.7	
Pulp Replicates (151-180):																												
178	B00264427	Rock Pulp	2.06	0.01	0.08	10.2	659	5.7	15.1	<0.001	2.08	0.23	1.2	1.9	<0.2	34	<0.01	<0.01	9.1	<0.005	0.08	1.01	3	0.07	7.68	217	8.3	
178 R	B00264427 (Rep)	Rep	2.01	0.02	0.08	9.7	647	5.8	14.3	<0.001	2.14	0.24	1.1	1.9	<0.2	34	<0.01	0.01	9.2	<0.005	0.08	1.02	3	<0.05	7.32	212	8.3	
Pulp Replicates (181-203):																												
181	B00264422	Rock Pulp	1.30	0.03	0.38	4.8	938	10.7	15.4	<0.001	0.59	0.18	1.2	<0.2	0.4	40.9	<0.01	0.03	11.2	0.012	0.09	1.04	3	0.11	9.80	13	14.9	
181 R	B00264422 (Rep)	Rep	1.32	0.03	0.37	4.9	899	10.4	15.9	<0.001	0.58	0.18	1.1	0.3	0.4	39.9	<0.01	0.04	11.0	0.012	0.09	1.01	3	0.1	9.71	13	15	

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Method																										Overlimit ICA-6Zn
		Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)	Zinc (Zn)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	10
		Sample Type																										
	Reference Material -1																											
	STD OREAS 24b (1)	(for 1-30)	3.85	0.11	0.38	58.9	617	9.10	118.0	0.001	0.19	0.52	9.60	0.40	2.30	30.8	<0.01	0.05	14.6	0.194	0.65	1.66	81	1.19	12.47	97	25.8	
	STD OREAS 24b (2)	(for 31-60)	3.93	0.11	0.43	62.2	606	9.20	104.4	0.001	0.20	0.45	9.70	<0.2	2.40	29.5	<0.01	0.02	14.1	0.204	0.65	1.70	81	1.27	13.35	101	24.6	
	STD OREAS 24b (3)	(for 61-90)	3.93	0.11	0.43	62.2	606	9.20	104.4	0.001	0.20	0.45	9.70	<0.2	2.40	29.5	<0.01	0.02	14.1	0.204	0.65	1.70	81	1.27	13.35	101	24.6	
	STD OREAS 24b (4)	(for 91-120)	4.05	0.11	0.43	61.1	613	9.00	113.7	0.001	0.20	0.53	9.90	0.70	2.50	30.6	<0.01	0.05	14.1	0.202	0.65	1.67	81	1.23	13.04	98	25.4	
	STD OREAS 24b (5)	(for 121-150)	3.79	0.11	0.32	58.4	593	9.00	114.9	<0.001	0.20	0.54	9.90	0.70	2.30	29.1	<0.01	<0.01	13.8	0.195	0.64	1.60	77	1.23	12.15	92	24.8	
	STD OREAS 24b (6)	(for 151-180)	3.79	0.11	0.32	58.4	593	9.00	114.9	<0.001	0.20	0.54	9.90	0.70	2.30	29.1	<0.01	<0.01	13.8	0.195	0.64	1.60	77	1.23	12.15	92	24.8	
	STD OREAS 24b (7)	(for 181-203)	3.98	0.11	0.34	59.5	581	9.20	115.5	0.001	0.19	0.58	9.70	0.30	2.30	30.0	<0.01	0.04	13.7	0.195	0.65	1.72	78	1.20	12.73	89	24.9	
	True Value STD OREAS 24b		**3.86**	**IND**	**0.31**	**57.0**	**620**	**9.23**	**114**	**<0.001**	**0.20**	**0.48**	**9.51**	**0.42**	**2.26**	**29.0**	**<0.05**	**<0.02**	**14.3**	**0.198**	**0.66**	**1.74**	**79**	**1.19**	**12.30**	**93**	**24.5**	
	% Difference (1)	(for 1-30)	-0.3		22.6	3.3	-0.5	-1.4	3.5	0.0	-5.0	8.3	0.9		1.8	6.2			2.1	-2.0	-1.5	-4.6	2.5	0.0	1.4	4.3	5.3	
	% Difference (2)	(for 31-60)	1.8		38.7	9.1	-2.3	-0.3	-8.4	0.0	0.0	-6.2	2.0		6.2	1.7			-1.4	3.0	-1.5	-2.3	2.5	6.7	8.5	8.6	0.4	
	% Difference (3)	(for 61-90)	1.8		38.7	9.1	-2.3	-0.3	-8.4	0.0	0.0	-6.2	2.0		6.2	1.7			-1.4	3.0	-1.5	-2.3	2.5	6.7	8.5	8.6	0.4	
	% Difference (4)	(for 91-120)	4.9		38.7	7.2	-1.1	-2.5	-0.3	0.0	0.0	10.4	4.1		10.6	5.5			-1.4	2.0	-1.5	-4.0	2.5	3.4	6.0	5.4	3.7	
	% Difference (5)	(for 121-150)	-1.8		3.2	2.5	-4.4	-2.5	0.8	0.0	0.0	12.5	4.1		1.8	0.3			-3.5	-1.5	-3.0	-8.0	-2.5	3.4	-1.2	-1.1	1.2	
	% Difference (6)	(for 151-180)	-1.8		3.2	2.5	-4.4	-2.5	0.8	0.0	0.0	12.5	4.1		1.8	0.3			-3.5	-1.5	-3.0	-8.0	-2.5	3.4	-1.2	-1.1	1.2	
	% Difference (7)	(for 181-203)	3.1		9.7	4.4	-6.3	-0.3	1.3	0.0	-5.0	20.8	2.0		1.8	3.4			-4.2	-1.5	-1.5	-1.1	-1.3	0.8	3.5	-4.3	1.6	
	Tolerance (%)		***0.37***	***NR***	***N/B***	***5***	***NR***	***1.29***	***15***	***NR***	***0.02***	***NR***	***1.39***	***NR***	***0.30***	***NR***	***NR***	***NR***	***1.1***	***0.017***	***0.08***	***0.26***	***5***	***NR***	***1.7***	***6***	***3.2***	
	Reference Material -2																											
	STD CDN-ME-1206 (1)	(for 1-30)																										23636
	STD CDN-ME-1206 (2)	(for 31-60)																										23697
	True Value STD CDN-ME-1206																											**23800**
	% Difference (1)	(for 1-30)																										-0.7
	% Difference (2)	(for 31-60)																										-0.4
	Tolerance (+/-)																											***1500***
	Method Blank:																											
	Method Blank - 1	(for 1-30)	<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5	<10
	Method Blank - 2	(for 31-60)	<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5	<10
	Method Blank - 3	(for 61-90)	<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5	
	Method Blank - 4	(for 91-120)	<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5	
	Method Blank - 5	(for 121-150)	<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5	
	Method Blank - 6	(for 151-180)	<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5	
	Method Blank - 7	(for 181-203)	<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5	

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ NP RE-RUNS (based on CaCO3 Equivalents) + QA/QC RESULTS

GLOBAL PROJECT NO: 1522

CLIENT: BMC MINERALS (No.1) LTD.

CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03

REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Siderite Corrected NP	NNP*4	NPR*5
	Units:	**pH Units**		**wt %**	**kg CaCO3/tonne**	**wt.%**	**wt.%**	**wt.%**	**kg CaCO3/tonne**			
	Reported Detection Limit:	***0.01***		***0.02***	***1.7***	**0.01**	**0.01**	**0.01**	**0.3**	***0.5***		
10	B00264245	8.8	Moderate	1.40	116.7	2.81	0.02	2.79	87.2	99.7	12.5	1.1
31	B00264264	8.5	Strong	0.84	70.0	1.11	0.03	1.08	33.8	81.2	47.5	2.4
38	B00264262	9.3	Strong	1.25	104.2	0.04	0.02	0.02	0.6	204.0	203.4	326.5
39	B00264270	9.4	Strong	0.71	59.2	0.38	0.02	0.36	11.3	63.5	52.3	5.6
46	B00264277	9.3	Strong	0.98	81.7	0.15	<0.01	0.15	4.7	88.9	84.2	19.0
66	B00264297	9.4	Strong	0.29	24.2	0.51	<0.01	0.51	15.9	39.2	23.3	2.5
85	B00264316	9.3	Moderate	0.49	40.8	0.01	<0.01	0.01	0.3	43.9	43.6	140.5
104	B00264334	9.1	Strong	0.39	32.5	0.67	<0.01	0.67	20.9	48.9	28.0	2.3
118	B00264350	9.1	Strong	0.43	35.8	0.56	0.02	0.54	16.9	50.2	33.3	3.0
142	**B00264372**	9.7	Strong	0.59	49.2	1.11	0.02	1.09	34.1	65.8	31.7	1.9
144	B00264370	9.7	Strong	0.68	56.7	1.35	0.02	1.33	41.6	73.4	31.8	1.8
157	B00264448	9.6	Strong	0.95	79.2	0.97	0.02	0.95	29.7	83.5	53.8	2.8
160	B00264446	9.5	Moderate	0.15	12.5	0.59	<0.01	0.59	18.4	19.4	1.0	1.1
166	B00264431	9.4	Strong	0.30	25.0	0.24	<0.01	0.24	7.5	38.4	30.9	5.1
179	B00264424	9.6	Moderate	0.40	33.3	0.49	<0.01	0.49	15.3	49.9	34.6	3.3
QUALITY ASSURANCE / QUALITY CONTROL												
Replicates (1-30):												
142	B00264372	9.7	Strong							65.8		
142 R	B00264372 (Rep)	9.7	Strong							65.7		
Certified Reference Material (CRM) Analysis:										**as STD Sobek NP** (no CRM available for Sid. Corr. NP)		
Certified Reference Material		KZK-1								KZK-1 (Slight)		
CRM True Value		**8.80**								**59.0**		
Reference Material Results										58.3		
Tolerance (+/-)		***0.09***								**2.8**		
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*ARD-013 (HCl Leach)*	*Calc.*	*Calc.*	*ARD-008*	*Calc.*	*Calc.*

NOTES:

All results indicated in red are re-run results. NPs were performed as requested - based on $CaCO_3$ Equivalents.

Date of Analysis: March 21-23, 2016

pH of DI water (pH Units): 5.73

EC of DI water (µS/cm): 0.56

ABBREVIATIONS:

R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)

D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request.

NP = Neutralization Potential

Calc. = Calculation

COA = Certificate Of Analysis

CALCULATIONS:

*1 $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)

*2 Sulphide-Sulphur: Total-sulphur - sulphate-sulphur

*3 AP (Acid Potential): Sulphide-sulphur x 31.25

*4 NNP (Net Neutralization Potential): NP - AP

*5 NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:

Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)

ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).

Note : As requested by client - only a small portion of the sample required for static testing was hand picked as representatively as possible and used.

Peroxide Siderite Correction for Sobek NP: Skousen, J., Renton, J., Brown, H., Evans, P., Leavitt, B., Brady, K., Cohen, L. and Ziemkiewicz, P. (1997), Neutralization Potential of Overburden Samples containing Siderite, Journal of Environmental Quality, v26, n3, p673-681.

Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).

Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresses:	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

RESULTS		
Reported To:	**1**	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
cc:		N/A
Date Reported:		V-1: Dec. 10, 2015 (Thursday); V-2: Mod. Sobek NP (on partial samples): April 4, 2016 (Monday); V-3: April 26, 2016 (Tuesday).

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kdbergh@gmail.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
Global Invoice No:	ARD1522-1215B; Mod. Sobek NP: ARD1522-0416A.
Date Submitted:	Dec. 10, 2015 (Thursday); Mod. Sobek NP: to be invoiced.

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

REPORTING	
Global Project No:	1522
Report Version:	3
Pages (Including Cover):	4
Report Title:	COA BMC-KZK (COC-2 x17 Historic Core Samples) - rec'd 23-Nov15 V3
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

NOTES
All samples are stored at no charge for 90 days except on-going HCT head client samples.
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	BMC Sample ID	Historic Sample ID	Sample Description	Condition (Wet/Dry)	Wt. of Sample Rec'd (kg)	Global Notes (in any)
1	B00264237	94-34 42.8 44.7	Drill Core	1.62	Dry	Although samples are dry - there is moisture on the plastic bag walls. So all samples are put to dry overnight at 40 °C. No SFE required on these 17 samples.
2	B00264230	94-40 18.1 20.1	Drill Core	1.92	Dry	
3	B00264240	94-34 188.1 189	Drill Core	1.68	Dry	
4	B00264203	94-46 110 113	Drill Core	2.05	Dry	
5	B00264202	94-50 174.7 176.7	Drill Core	2.48	Dry	
6	B00264211	94-50 45.2 48.2	Drill Core	2.98	Dry	
7	B00264238	94-34 94 97	Drill Core	1.44	Dry	
8	B00264232	94-40 78 80.4	Drill Core	1.12	Dry	
9	B00264239	94-34 124.5 127.2	Drill Core	2.06	Dry	
10	B00264234	94-40 95.3 98.3	Drill Core	1.78	Dry	
11	B00264204	94-46 56.1 58.5	Drill Core	2.18	Dry	
12	B00264241	K94-009 90 99	Drill Core	2.44	Dry	
13	B0264233	94-40 89.9 92.3	Drill Core	2.06	Dry	
14	B00264231	94-40 29.1 32.1	Drill Core	1.52	Dry	
15	B00264212	94-50 51.2 54.2	Drill Core	2.86	Dry	
16	B00264235	94-40 139.8 142	Drill Core	2.02	Dry	
17	B00264236	94-40 144.2 146.4	Drill Core	1.84	Dry	

Total wt. of sample rec'd (kg): **34.05**

Sample Receipt Info:	
Date Samples Received:	Nov. 23, 2015 (Monday)
No. of Samples Received:	17
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Andrew Gault (agault@alexcoresource.com) By Email/COC.
Date:	Nov. 18, 2015 (Wednesday)
Modified ABA) Sobek NP:	By Andrew Gault on Mar. 30, 2016 (Wednesday)

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Siderite Corrected NP	NNP*4	NPR*5	Mod. ABA NP
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne				kg CaCO3/tonne
	Reported Detection Limit:	*0.01*		*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*			*0.5*
1	B00264237	9.3	Strong	1.06	88.3	0.45	<0.01	0.45	14.1	191.0	176.9	13.6	107.1
2	B00264230	9.1	Moderate	1.28	106.7	0.79	<0.01	0.79	24.7	115.5	90.8	4.7	102.9
3	B00264240	9.4	Strong	2.38	198.3	<0.01	<0.01	<0.01	<0.3	259.8	259.8	N/A	203.9
4	B00264203	9.4	Strong	0.94	78.3	0.05	<0.01	0.05	1.6	111.2	109.6	71.2	83.4
5	B00264202	9.6	Slight	0.06	5.0	0.58	<0.01	0.58	18.1	10.2	-7.9	0.6	9.9
6	B00264211	9.5	Moderate	0.70	58.3	0.28	<0.01	0.28	8.8	75.2	66.5	8.6	58.7
7	B00264238	8.9	Moderate	0.71	59.2	0.55	<0.01	0.55	17.2	63.9	46.7	3.7	62.0
8	B00264232	8.9	Moderate	0.87	72.5	1.33	<0.01	1.33	41.6	74.9	33.3	1.8	76.9
9	B00264239	8.5	Strong	0.30	25.0	1.22	<0.01	1.22	38.1	89.4	51.3	2.3	45.6
10	B00264234	8.7	Strong	0.63	52.5	1.82	<0.01	1.82	56.9	113.0	56.1	2.0	80.9
11	B00264204	8.5	Slight	0.18	15.0	0.39	<0.01	0.39	12.2	49.7	37.5	4.1	46.5
12	B00264241	8.4	Slight	0.64	53.3	1.80	0.03	1.77	55.3	55.1	-0.2	1.0	54.0
13	B0264233	9.0	Moderate	0.73	60.8	1.06	<0.01	1.06	33.1	71.9	38.8	2.2	70.4
14	B00264231	9.0	Moderate	0.56	46.7	1.76	<0.01	1.76	55.0	63.3	8.3	1.2	65.0
15	B00264212	9.2	Moderate	0.70	58.3	0.53	<0.01	0.53	16.6	57.7	41.1	3.5	58.5
16	B00264235	8.8	Slight	0.09	7.5	1.62	<0.01	1.62	50.6	16.1	-34.5	0.3	13.1
17	B00264236	8.6	None	<0.02	<1.7	1.71	<0.01	1.71	53.4	1.8	-51.6	0.0	1.7
QUALITY ASSURANCE / QUALITY CONTROL													
Replicates:													
1	B00264237			1.06	88.3	0.45							
1 R	B00264237 (Rep)			1.03	85.8	0.45							
10	B00264234	8.7	Strong				<0.01			113.0			
10 R	B00264234 (Rep)	8.8	Strong				<0.01			111.2			
16	B00264235												13.1
16 R	B00264235 (Rep)												12.9
Certified Reference Material (CRM) Analysis:										**as STD Sobek NP** (no CRM available for Sid. Corr. NP)			
Certified Reference Material		KZK-1		SY-4		CDN-CM-30	RTS-3a			1) KZK-1 (Slight) 2) KZK-1 (Moderate)			1) KZK-1 (Slight) 2) KZK-1 (Moderate)
CRM True Value		**8.80**		**0.96**		**2.44**	**1.10**			**1) 59.0 2) 64.8**			**1) 58.9 2) 61.6**
Reference Material Results		8.83		0.89		2.43	0.99 / 1.00			1) 59.8 2) 62.5			1) 56.7 2) N/A
Tolerance (+/-)		***0.09***		***0.03***		***0.13***	***0.20***			***1) 2.8 2) 5.8***			***1) 1.1 2) 3.4***
Method Blank Analysis:													
Method Blank Results				<0.02		<0.01	<0.01						
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*ARD-013 (HCl Leach)*	*Calc.*	*Calc.*	*ARD-008*	*Calc.*	*Calc.*	28 *ARD-005*

NOTES:

Date of Analysis: November 27, 2015; Modified Sobek NP: April 14/15, 2016.

pH of DI water (pH Units): 5.51 / 5.59

EC of DI water (µS/cm): 0.34 / 0.24

For STD SY-4, the TIC results are evaluated against the COA CO2 (3.5%) value calculated as carbon - i.e. 0.96%. The COA 95% Confidence Interval then calculates to 0.03%.

METHODS:

Total sulphur by LECO, total inorganic carbon by HCl leach followed by Leco analysis. Job #: MA0077-NOV15.

ABBREVIATIONS:

R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)

D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request.

NP = Neutralization Potential

Calc. = Calculation

COA = Certificate Of Analysis

CALCULATIONS:

*[1] $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)

*[2] Sulphide-Sulphur: Total-sulphur - sulphate-sulphur

*[3] AP (Acid Potential): Sulphide-sulphur x 31.25

*[4] NNP (Net Neutralization Potential): NP - AP

*[5] NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:

Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)

ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).

Note : As requested by client - only a small portion of the sample required for static testing was hand picked as representatively as possible and used.

Peroxide Siderite Correction for Sobek NP: Skousen, J., Renton, J., Brown, H., Evans, P., Leavitt, B., Brady, K., Cohen, L. and Ziemkiewicz, P. (1997), Neutralization Potential of Overburden Samples containing Siderite, Journal of Environmental Quality, v26, n3, p673-681.

Modified ABA (Sobek) NP: MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).

Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

PAGE: 4a of 4
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Method	IMS-130											
		Analyte	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
		Sample Type													
1	B00264237	Rock Pulp	0.07	2.56	2.5	<0.005	<10	714	0.71	0.04	3.58	0.21	35.70	22.2	53
2	B00264230	Rock Pulp	0.11	0.50	7.5	<0.005	<10	244	0.28	0.26	2.82	0.33	40.20	4.1	68
3	B00264240	Rock Pulp	0.21	3.73	45.9	0.007	<10	507	0.32	<0.01	6.46	0.31	12.71	37.0	155
4	B00264203	Rock Pulp	0.76	0.50	491.1	<0.005	<10	349	0.27	1.57	2.89	0.29	51.73	2.6	75
5	B00264202	Rock Pulp	0.32	0.66	14.1	<0.005	<10	297	0.36	0.47	0.34	0.03	117.98	4.3	91
6	B00264211	Rock Pulp	0.21	0.55	2.0	<0.005	<10	364	0.24	0.24	1.69	0.22	58.09	2.9	72
7	B00264238	Rock Pulp	0.19	0.58	0.1	<0.005	<10	130	0.25	0.45	1.83	0.41	55.44	6.0	81
8	B00264232	Rock Pulp	0.20	0.47	3.4	<0.005	<10	160	0.24	1.22	2.23	0.79	42.01	5.0	95
9	B00264239	Rock Pulp	0.89	1.08	0.3	<0.005	<10	209	0.31	1.40	1.53	0.49	91.13	10.9	106
10	B00264234	Rock Pulp	0.20	0.53	13.1	<0.005	<10	145	0.21	0.40	2.25	0.23	38.44	9.8	69
11	B00264204	Rock Pulp	0.84	0.45	4.5	<0.005	<10	95	0.31	0.62	1.22	0.44	38.31	4.6	88
12	B00264241	Rock Pulp	1.60	0.43	34.5	<0.005	<10	146	0.14	0.68	1.29	0.49	24.63	2.8	63
13	B0264233	Rock Pulp	0.09	0.51	1.5	<0.005	<10	155	0.20	0.10	1.90	0.19	49.11	4.9	87
14	B00264231	Rock Pulp	0.13	0.54	15.5	<0.005	<10	126	0.24	0.18	1.83	0.35	45.69	6.3	79
15	B00264212	Rock Pulp	0.07	0.46	2.5	<0.005	<10	241	0.24	0.27	1.69	0.17	50.58	3.5	61
16	B00264235	Rock Pulp	8.17	0.66	3098.6	0.074	<10	140	0.26	0.54	0.32	2.37	25.91	3.6	82
17	B00264236	Rock Pulp	8.18	0.45	844.2	0.030	<10	148	0.22	2.35	0.03	1.96	21.01	2.0	78
QUALITY ASSURANCE / QUALITY CONTROL														
Pulp Replicates														
1	B00264237	Rock Pulp	0.07	2.56	2.5	<0.005	<10	714	0.71	0.04	3.58	0.21	35.70	22.2	53
1 R	B00264237	Rep	0.05	2.58	3.4	<0.005	<10	722	0.69	0.04	3.59	0.20	35.85	21.5	55
Reference Material														
STD OREAS 24b			0.070	3.23	8.10	<0.005	<10	145	1.74	0.70	0.45	0.08	62.0	16.3	111
True Value STD OREAS 24b			**0.058**	**3.15**	**7.96**	**0.002**	**6.23**	**146**	**1.65**	**0.73**	**0.461**	**0.046**	**61.0**	**15.7**	**106**
% Difference			20.7	2.5	1.8			-0.7	5.5	-4.1	-2.4	73.9	1.7	3.8	4.7
Tolerance (%)			***N/A***	***0.2***	***0.95***	***N/A***	***N/A***	***12***	***N/A***	***0.13***	***0.030***	***N/A***	***N/A***	***1.9***	***9***
Method Blank:														
Method Blank			<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1

S. No.	Sample ID	Method	IMS-130												
		Analyte	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Unit	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
		Sample Type													
1	B00264237	Rock Pulp	15.26	13.5	5.56	10.12	0.15	0.07	<0.01	0.047	1.67	18.2	21.1	1.45	695
2	B00264230	Rock Pulp	0.49	48.8	3.25	1.48	0.07	0.16	0.01	0.009	0.42	19.0	1.7	0.89	739
3	B00264240	Rock Pulp	14.50	50.1	5.36	8.00	0.15	<0.02	<0.01	0.029	2.60	5.8	26.7	3.53	1094
4	B00264203	Rock Pulp	0.58	4.4	0.66	1.43	0.06	0.37	<0.01	0.006	0.43	25.1	5.2	0.26	642
5	B00264202	Rock Pulp	0.41	3.5	0.78	2.10	0.15	0.54	0.03	0.006	0.50	56.5	4.8	0.10	45
6	B00264211	Rock Pulp	0.25	41.8	1.53	1.63	0.07	0.16	<0.01	0.005	0.41	27.6	1.3	0.46	474
7	B00264238	Rock Pulp	0.54	36.4	2.64	1.63	0.08	0.34	<0.01	0.013	0.38	26.3	3.5	0.55	591
8	B00264232	Rock Pulp	0.65	54.6	3.09	1.28	0.08	0.21	<0.01	0.010	0.33	20.0	3.1	0.65	610
9	B00264239	Rock Pulp	2.61	18.0	3.54	2.83	0.13	0.38	<0.01	0.015	0.48	43.0	7.2	0.65	346
10	B00264234	Rock Pulp	0.52	12.3	3.75	1.42	0.07	0.22	<0.01	0.013	0.32	18.3	1.9	0.75	454
11	B00264204	Rock Pulp	3.78	40.7	2.33	1.57	0.07	0.50	0.02	0.026	0.31	18.6	2.2	0.48	339
12	B00264241	Rock Pulp	0.23	15.9	2.25	1.24	0.05	0.49	0.12	0.009	0.30	14.2	1.5	0.62	562
13	B0264233	Rock Pulp	0.37	9.1	2.32	1.46	0.07	0.22	<0.01	0.010	0.33	23.1	1.8	0.66	387
14	B00264231	Rock Pulp	0.41	8.5	2.96	1.83	0.08	0.23	<0.01	0.012	0.39	21.6	2.4	0.57	438
15	B00264212	Rock Pulp	0.18	39.7	1.69	1.33	0.07	0.20	<0.01	<0.005	0.33	24.0	1.1	0.46	436
16	B00264235	Rock Pulp	0.67	54.4	2.20	2.06	0.11	1.06	0.06	0.048	0.39	12.8	3.7	0.32	366
17	B00264236	Rock Pulp	0.22	44.7	1.95	1.37	0.13	0.70	0.04	0.038	0.27	12.0	2.0	0.04	27
QUALITY ASSURANCE / QUALITY CONTROL															
Pulp Replicates															
1	B00264237	Rock Pulp	15.26	13.5	5.56	10.12	0.15	0.07	<0.01	0.047	1.67	18.2	21.1	1.45	695
1 R	B00264237	Rep	14.60	11.3	5.59	9.89	0.14	0.07	<0.01	0.046	1.69	17.9	20.9	1.46	702
Reference Material															
STD OREAS 24b			9.33	39.3	3.91	11.01	0.23	0.56	0.01	0.052	1.18	30.6	44.0	1.39	335
True Value STD OREAS 24b			**9.15**	**36.4**	**3.93**	**10.80**	**0.26**	**0.52**	**<0.01**	**0.048**	**1.17**	**29.2**	**45.6**	**1.36**	**350**
% Difference			2.0	8.0	-0.5	1.9	-11.5	7.7		8.3	0.9	4.8	-3.5	2.2	-4.3
Tolerance (%)			***0.56***	***3.3***	***0.21***	***1.1***	***N/A***	***N/A***	***N/A***	***N/A***	***0.07***	***N/A***	***3.5***	***0.07***	***20***
Method Blank:															
Method Blank			<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5

Notes:

Job No: MA0077-NOV15

Analytical Methods (IMS-130):

A 0.5 g of pulp sample is leached in hot (95°C) 3:1 aqua regia digestion followed by ICP Mass Spec analysis.

Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5 g).

Refractory and graphitic samples can limit Au solubility.

Abbreviations:

R / Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)

D / Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a second split of the original client sample received)

MDL = Measurable Detection Limit

IND = Indeterminate

On Tolerance:

Any one element in a run reporting outside tolerance limits does not constitute failure of the standard.

All 'True Values' indicated in green are not certified values - they are indicative values.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Method / Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
		Sample Type																									
1	B00264237	Rock Pulp	0.98	0.03	0.65	13.3	1490	7.2	81.1	<0.001	0.40	0.08	16.0	0.4	1	134	<0.01	0.03	8.8	0.277	0.69	0.19	148	0.68	18.26	79	3.6
2	B00264230	Rock Pulp	1.97	0.01	0.26	7.3	765	8.0	15.9	<0.001	0.82	0.07	1.6	2.9	0.2	138.9	<0.01	0.03	7.9	0.006	0.3	0.51	4	0.09	9.11	46	9.8
3	B00264240	Rock Pulp	0.41	0.04	0.12	82.9	510	9.6	185.6	0.001	0.02	0.22	11.1	0.2	0.3	184.6	<0.01	0.03	1.0	0.287	17.7	<0.05	90	0.06	17.97	130	1.6
4	B00264203	Rock Pulp	3.03	0.01	0.15	5.7	153	31.5	16.8	<0.001	0.06	0.33	0.8	1.5	0.4	83.9	<0.01	<0.01	22.3	0.006	1.96	3.20	3	0.12	12.47	39	23.7
5	B00264202	Rock Pulp	1.25	0.01	0.29	5.9	198	11.9	15.9	<0.001	0.64	0.42	0.7	0.3	0.7	13.8	<0.01	<0.01	28.8	0.006	0.95	1.65	2	0.18	10.84	15	27
6	B00264211	Rock Pulp	2.38	0.01	0.18	4.8	922	27.9	15.2	<0.001	0.29	0.12	1.4	0.9	<0.2	70.3	<0.01	<0.01	12.2	0.008	0.12	0.44	3	0.08	9.35	56	10.8
7	B00264238	Rock Pulp	2.85	0.02	0.22	15.2	722	13.3	16.0	<0.001	0.57	0.1	1.2	0.5	0.2	68.2	<0.01	<0.01	12.3	0.005	0.17	0.96	3	0.06	8.85	56	17.5
8	B00264232	Rock Pulp	2.44	0.02	0.10	7.4	794	8.9	15.1	<0.001	1.43	0.14	2.0	2.8	<0.2	99.4	<0.01	<0.01	9.1	<0.005	0.24	1.21	4	0.06	10.05	93	10.8
9	B00264239	Rock Pulp	2.35	0.02	0.32	28.7	845	268.8	19.9	0.001	1.22	0.11	1.7	2	0.3	61.7	<0.01	0.02	17.6	0.011	0.65	1.05	5	0.12	12.88	92	25.3
10	B00264234	Rock Pulp	2.20	0.01	0.18	12.5	814	37.7	14.6	<0.001	1.72	0.21	1.4	2	<0.2	109.5	<0.01	0.02	8.2	<0.005	0.52	0.75	4	0.07	9.49	64	13
11	B00264204	Rock Pulp	5.17	0.01	0.11	6.2	195	43.0	16.0	0.003	0.42	1.84	2.3	2.4	0.5	42.6	<0.01	<0.01	20.8	<0.005	0.5	4.45	8	0.13	8.38	106	25.1
12	B00264241	Rock Pulp	2.83	0.01	0.14	5.4	150	150.5	15.8	0.001	1.85	5.01	0.6	4	0.5	33.4	<0.01	<0.01	15.5	<0.005	2.33	4.24	2	0.13	5.01	96	24.2
13	B0264233	Rock Pulp	2.61	0.01	0.10	6.0	863	13.8	16.1	<0.001	1.11	0.23	1.5	1.2	<0.2	92.6	<0.01	<0.01	10.9	<0.005	0.41	0.72	3	0.08	9.84	51	14.1
14	B00264231	Rock Pulp	2.55	0.02	0.18	6.9	874	12.2	17.9	<0.001	1.88	0.19	1.7	0.5	<0.2	78.2	<0.01	<0.01	9.3	0.006	0.17	0.73	4	0.1	9.69	50	15.1
15	B00264212	Rock Pulp	1.75	0.02	0.17	5.0	775	4.0	12.8	<0.001	0.55	0.19	1.5	0.7	<0.2	73.7	<0.01	<0.01	11.3	0.006	0.08	0.66	3	0.06	8.87	12	12.4
16	B00264235	Rock Pulp	4.10	0.02	0.10	5.7	115	446.8	22.5	<0.001	1.62	20.02	0.8	18.1	0.7	8	<0.01	<0.01	9.9	<0.005	3.46	3.62	3	0.19	4.54	518	51.7
17	B00264236	Rock Pulp	2.84	0.02	0.10	5.2	72	912.4	14.2	<0.001	1.73	8.71	0.5	27	0.4	2.5	<0.01	<0.01	10.0	<0.005	1.87	3.23	2	0.15	3.13	371	32.2
QUALITY ASSURANCE / QUALITY CONTROL																											
Pulp Replicates																											
1	B00264237	Rock Pulp	0.98	0.03	0.65	13.3	1490	7.2	81.1	<0.001	0.40	0.08	16	0.4	1	134	<0.01	0.03	8.8	0.277	0.69	0.19	148	0.68	18.26	79	3.6
1 R	B00264237	Rep	1.01	0.03	0.31	8.6	1495	6.8	80.8	0.001	0.41	0.06	15.9	0.9	0.8	136.2	<0.01	<0.01	8.7	0.28	0.69	0.19	149	0.64	18.21	80	3.6
Reference Material																											
STD OREAS 24b			3.96	0.11	0.38	60.1	614	9.20	118.1	<0.001	0.19	0.54	9.90	0.50	2.30	30.4	<0.01	0.04	14.7	0.193	0.65	1.58	81	1.21	12.33	99	26.6
True Value STD OREAS 24b			**3.86**	**IND**	**0.31**	**57.0**	**620**	**9.23**	**114**	**<0.001**	**0.20**	**0.48**	**9.51**	**0.42**	**2.26**	**29.0**	**<0.05**	**<0.02**	**14.3**	**0.198**	**0.66**	**1.74**	**79**	**1.19**	**12.30**	**93**	**24.5**
% Difference			2.6		22.6	5.4	-1.0	-0.3	3.6	0.0	-5.0	12.5	4.1		1.8	4.8			2.8	-2.5	-1.5	-9.2	2.5	1.7	0.2	6.5	8.6
Tolerance (%)			***0.37***	***N/A***	***N/B***	***5***	***N/A***	***1.29***	***15***	***N/A***	***0.02***	***N/A***	***1.39***	***N/A***	***0.30***	***N/A***	***N/A***	***N/A***	***1.1***	***0.017***	***0.08***	***0.26***	***5***	***N/A***	***1.7***	***6***	***3.2***
Method Blank:																											
Method Blank			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresses:	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

RESULTS		
Reported To:	**1**	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
cc:		N/A
Date Reported:		Draft: Dec. 10, 2015 (Thursday); V-1: Dec. 11, 2015 (Friday); V-2: Mod. Sobek NP (on partial samples): April 4, 2016 (Monday); V-3: April 26, 2016 (Tuesday).

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kdbergh@gmail.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
Global Invoice No:	ARD1522-1215A; Mod. Sobek NP: ARD1522-0416A.
Date Submitted:	Dec. 11, 2015 (Friday); Mod. Sobek NP: to be invoiced.

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

REPORTING	
Global Project No:	1522
Report Version:	3
Pages (Including Cover):	6
Report Title:	COA BMC-KZK (COC-3 x13 Historic Core Samples) - rec'd 23-Nov15 V3
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

NOTES
All samples are stored at no charge for 90 days except on-going HCT head client samples.
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

PAGE: 2 of 6
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	BMC Sample ID	Historic Sample ID	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes (in any)
1	B00264227	K94-043 30.6 34.9	Drill Core	2.36	Dry	Although samples are dry - there is moisture on the plastic bag walls. So all samples are put to dry overnight at 40 °C. SFE required on these 13 samples.
2	B00264225	K94-009 41.1 53.1	Drill Core	1.88	Dry	
3	B00264226	K94-009 69 87	Drill Core	2.26	Dry	
4	B00264222	94-34 157.3 160.3	Drill Core	1.74	Dry	
5	B00264228	94-40 34.6 37	Drill Core	1.90	Dry	
6	B00264229	94-40 87.5 89.9	Drill Core	2.06	Dry	
7	B00264201	94-46 23.4 26.4	Drill Core	2.48	Dry	
8	B00264205	94-50 14.4 17.4	Drill Core	2.62	Dry	
9	B00264206	94-50 101.6 103.7	Drill Core	2.30	Dry	
10	B00264207	94-50 125.9 131.6	Drill Core	2.64	Dry	
11	B00264224	94-34 189 189.7	Drill Core	1.34	Dry	
12	B00264223	94-34 167.5 169.7	Drill Core	1.60	Dry	
13	B00264209	94-50 54.2 57.2	Drill Core	3.40	Dry	

Total wt. of sample rec'd (kg): **28.58**

Sample Receipt Info:	
Date Samples Received:	Nov. 23, 2015 (Monday)
No. of Samples Received:	13
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Andrew Gault (agault@alexcoresource.com)
	By Email/COC.
Date:	Nov. 18, 2015 (Wednesday)
Modified Sobek NP:	By Andrew Gault on Mar. 30, 2016 (Wednesday)

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents[*1]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur[*2]	AP[*3]	Siderite Corrected NP	NNP[*4]	NPR[*5]	Mod. ABA NP
	Units:	**pH Units**		**wt %**	**kg CaCO3/tonne**	**wt.%**	**wt.%**	**wt.%**	**kg CaCO3/tonne**				**kg CaCO3/tonne**
	Reported Detection Limit:	***0.01***		***0.02***	***1.7***	**0.01**	**0.01**	**0.01**	**0.3**	***0.5***			***0.5***
1	B00264227	8.6	None	0.02	1.7	1.41	<0.01	1.41	44.1	1.9	-42.2	0.0	1.4
2	B00264225	8.9	Moderate	0.84	70.0	0.89	<0.01	0.89	27.8	73.1	45.3	2.6	75.0
3	B00264226	9.1	Slight	0.27	22.5	0.44	<0.01	0.44	13.8	26.8	13.1	1.9	25.8
4	B00264222	9.0	Moderate	0.50	41.7	1.30	<0.01	1.30	40.6	49.1	8.5	1.2	50.0
5	B00264228	9.3	Moderate	0.31	25.8	0.91	<0.01	0.91	28.4	51.0	22.6	1.8	46.3
6	B00264229	9.6	Slight	0.35	29.2	0.29	<0.01	0.29	9.1	35.6	26.5	3.9	31.1
7	B00264201	9.5	Slight	0.24	20.0	0.81	<0.01	0.81	25.3	27.3	2.0	1.1	27.0
8	B00264205	9.2	Moderate	0.90	75.0	0.24	<0.01	0.24	7.5	74.9	67.4	10.0	74.3
9	B00264206	9.1	Moderate	0.51	42.5	1.74	<0.01	1.74	54.4	54.1	-0.3	1.0	53.8
10	B00264207	9.1	Slight	0.43	35.8	1.18	<0.01	1.18	36.9	49.2	12.3	1.3	47.0
11	B00264224	9.1	Strong	1.87	155.8	0.45	<0.01	0.45	14.1	130.5	116.4	9.3	166.8
12	B00264223	9.3	None	<0.02	<1.7	0.84	<0.01	0.84	26.3	3.6	-22.7	0.1	2.3
13	B00264209	9.3	Moderate	0.51	42.5	0.97	<0.01	0.97	30.3	47.9	17.6	1.6	49.6
	QUALITY ASSURANCE / QUALITY CONTROL												
Replicates:													
1	B00264227			0.02	1.7	1.41							
1 R	B00264227 (Rep)			<0.02	<1.7	1.41							
5	B00264228			0.31	25.8								
5 R	B00264228 (Rep)			0.31	25.8								
10	B00264207	9.1	Slight				<0.01			49.2			
10 R	B00264207 (Rep)	9.2	Slight				<0.01			48.3			
13	B00264209												49.6
13 R	B00264209 (Rep)												47.8
Certified Reference Material (CRM) Analysis:										**as STD Sobek NP** (no CRM available for Sid. Corr. NP)			
Certified Reference Material		KZK-1		SY-4		CDN-CM-30	RTS-3a			1) KZK-1 (Slight) 2) KZK-1 (Moderate)			1) KZK-1 (Slight) 2) KZK-1 (Moderate)
CRM True Value		**8.80**		**0.96**		**2.44**	**1.10**			**1) 59.0 2) 64.8**			**1) 58.9 2) 61.6**
Reference Material Results		8.83		0.92		2.43	0.99			1) 59.8 2) 62.5			1) 56.6 / 56.7 2) N/A
Tolerance (+/-)		***0.09***		***0.03***		***0.13***	***0.20***			***1) 2.8 2) 5.8***			***1) 1.1 2) 3.4***
Method Blank Analysis:													
Method Blank Results				<0.02		<0.01	<0.01						
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*ARD-013 (HCl Leach)*	*Calc.*	*Calc.*	*ARD-008*	*Calc.*	*Calc.*	*ARD-005*

NOTES:

Date of Analysis: November 27, 2015; Modified Sobek NP: April 14/15, 2016.

pH of DI water (pH Units): 5.51 / 5.59

EC of DI water (µS/cm): 0.34 /0.24

For STD SY-4, the TIC results are evaluated against the COA CO2 (3.5%) value calculated as carbon - i.e. 0.96%. The COA 95% Confidence Interval then calculates to 0.03%.

METHODS:

Total sulphur by LECO, total inorganic carbon by HCl leach followed by Leco analysis. Job #: MA0078-NOV15.

ABBREVIATIONS:

R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)

D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request.

NP = Neutralization Potential

Calc. = Calculation

COA = Certificate Of Analysis

CALCULATIONS:

*[1] $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)

*[2] Sulphide-Sulphur: Total-sulphur - sulphate-sulphur

*[3] AP (Acid Potential): Sulphide-sulphur x 31.25

*[4] NNP (Net Neutralization Potential): NP - AP

*[5] NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:

Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)

ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).

Note : As requested by client - only a small portion of the sample required for static testing was hand picked as representatively as possible and used.

Peroxide Siderite Correction for Sobek NP: Skousen, J., Renton, J., Brown, H., Evans, P., Leavitt, B., Brady, K., Cohen, L. and Ziemkiewicz, P. (1997), Neutralization Potential of Overburden Samples containing Siderite, Journal of Environmental Quality, v26, n3, p673-681.

Modified ABA (Sobek) NP: MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).

Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Method: IMS-130 / Sample Type	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1
1	B00264227	Rock Pulp	0.86	0.41	18.2	0.007	<10	121	0.21	0.58	0.07	0.04	28.77	2.5
2	B00264225	Rock Pulp	0.14	0.46	1.8	<0.005	<10	192	0.20	0.38	2.02	0.35	39.24	6.9
3	B00264226	Rock Pulp	0.36	0.39	0.4	<0.005	<10	216	0.18	0.79	0.69	3.34	28.00	3.0
4	B00264222	Rock Pulp	0.65	0.47	14.4	0.005	<10	146	0.21	0.53	1.15	0.75	24.13	2.7
5	B00264228	Rock Pulp	0.30	0.63	0.4	<0.005	<10	192	0.23	0.82	1.46	0.15	51.51	5.7
6	B00264229	Rock Pulp	0.02	0.51	0.7	<0.005	<10	174	0.21	0.02	0.97	0.09	71.39	1.2
7	B00264201	Rock Pulp	0.16	0.42	4.4	<0.005	<10	57	0.20	0.53	0.77	0.12	21.81	2.7
8	B00264205	Rock Pulp	0.28	0.51	0.2	<0.005	<10	316	0.20	0.41	2.04	0.33	67.30	2.5
9	B00264206	Rock Pulp	0.08	0.50	13.9	<0.005	<10	139	0.20	0.25	1.47	0.29	43.37	6.8
10	B00264207	Rock Pulp	0.54	0.46	24.7	<0.005	<10	139	0.19	0.48	1.06	0.58	26.69	2.3
11	B00264224	Rock Pulp	0.56	0.16	12.3	0.011	<10	118	0.07	0.16	6.15	0.63	26.79	5.5
12	B00264223	Rock Pulp	7.29	0.75	180.7	0.015	<10	340	0.30	0.83	0.02	31.20	42.42	4.0
13	B00264209	Rock Pulp	0.27	0.44	6.2	<0.005	<10	217	0.22	0.98	1.46	0.36	45.93	5.8
QUALITY ASSURANCE / QUALITY CONTROL														
Pulp Replicates														
11	B00264224	Rock Pulp	0.56	0.16	12.3	0.011	<10	118	0.07	0.16	6.15	0.63	26.79	5.5
11 R	B00264224	Rep	0.53	0.16	10.0	0.010	<10	119	0.07	0.15	6.13	0.60	26.40	6.3
Reference Material														
STD OREAS 24b			0.070	3.23	8.10	<0.005	<10	145	1.74	0.70	0.45	0.08	62.0	16.3
True Value STD OREAS 24b			**0.058**	**3.15**	**7.96**	**0.002**	**6.23**	**146**	**1.65**	**0.73**	**0.461**	**0.046**	**61.0**	**15.7**
% Difference			20.7	2.5	1.8			-0.7	5.5	-4.1	-2.4	73.9	1.7	3.8
Tolerance (%)			***NR***	***0.2***	***0.95***	***NR***	***NR***	***12***	***NR***	***0.13***	***0.030***	***NR***	***NR***	***1.9***
Method Blank:														
Method Blank			<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1

S. No.	Sample ID	Method: IMS-130 / Sample Type	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Unit	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
1	B00264227	Rock Pulp	80	0.26	11.5	1.37	1.37	0.08	0.39	0.39	0.006	0.28	14.0	2.3	0.03	39
2	B00264225	Rock Pulp	51	0.57	37.6	2.42	1.30	0.06	0.27	<0.01	0.007	0.32	18.5	1.8	0.65	526
3	B00264226	Rock Pulp	68	0.25	41.7	1.00	1.19	0.05	0.51	0.04	0.024	0.28	13.2	1.0	0.26	217
4	B00264222	Rock Pulp	65	0.23	13.6	1.76	1.20	0.06	1.06	0.03	0.010	0.28	14.1	3.0	0.57	594
5	B00264228	Rock Pulp	52	1.68	44.6	2.12	2.14	0.08	0.30	<0.01	0.008	0.46	24.7	3.3	0.39	417
6	B00264229	Rock Pulp	53	0.20	5.5	0.89	1.59	0.09	0.17	<0.01	0.007	0.36	34.0	1.5	0.29	177
7	B00264201	Rock Pulp	72	0.30	18.6	1.41	1.13	0.05	0.45	<0.01	0.005	0.29	12.5	0.8	0.27	225
8	B00264205	Rock Pulp	78	0.65	50.0	1.94	1.50	0.09	0.21	<0.01	0.006	0.42	31.8	3.0	0.60	900
9	B00264206	Rock Pulp	76	0.24	13.4	2.69	1.50	0.08	0.20	<0.01	0.007	0.36	20.4	1.8	0.49	361
10	B00264207	Rock Pulp	84	0.26	16.2	1.47	1.30	0.05	0.53	0.02	0.013	0.31	13.0	1.8	0.54	537
11	B00264224	Rock Pulp	100	0.21	35.5	0.88	0.55	0.05	0.24	<0.01	<0.005	0.11	15.1	0.8	0.04	653
12	B00264223	Rock Pulp	105	0.39	248.6	0.97	2.44	0.98	0.96	0.43	0.059	0.43	20.4	4.0	0.07	60
13	B00264209	Rock Pulp	70	0.18	61.3	2.01	1.33	0.08	0.19	<0.01	<0.005	0.32	21.8	1.0	0.38	364
QUALITY ASSURANCE / QUALITY CONTROL																
Pulp Replicates																
11	B00264224	Rock Pulp	100	0.21	35.5	0.88	0.55	0.05	0.24	<0.01	<0.005	0.11	15.1	0.8	0.04	653
11 R	B00264224	Rep	93	0.20	34.2	0.85	0.54	0.05	0.24	<0.01	<0.005	0.11	14.8	0.8	0.04	640
Reference Material																
STD OREAS 24b			111	9.33	39.3	3.91	11.01	0.23	0.56	0.01	0.052	1.18	30.6	44.0	1.39	335
True Value STD OREAS 24b			**106**	**9.15**	**36.4**	**3.93**	**10.80**	**0.26**	**0.52**	**<0.01**	**0.048**	**1.17**	**29.2**	**45.6**	**1.36**	**350**
% Difference			4.7	2.0	8.0	-0.5	1.9	-11.5	7.7		8.3	0.9	4.8	-3.5	2.2	-4.3
Tolerance (%)			***9***	***0.56***	***3.3***	***0.21***	***1.1***	***NR***	***NR***	***NR***	***NR***	***0.07***	***NR***	***3.5***	***0.07***	***20***
Method Blank:																
Method Blank			<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5

Notes:

Job No: MA0078-NOV15

Analytical Methods (IMS-130):

A 0.5 g of pulp sample is leached in hot (95°C) 3:1 aqua regia digestion followed by ICP Mass Spec analysis.
Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5 g).
Refractory and graphitic samples can limit Au solubility.

Abbreviations:

R / Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)
D / Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a second split of the original client sample received)
MDL = Measurable Detection Limit
IND = Indeterminate

On Tolerance:

Any one element in a run reporting outside tolerance limits does not constitute failure of the standard.
All 'True Values' indicated in green are not certified values - they are indicative values.
NR = Not reported in the Certificate Of Analysis (COA)

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Method / Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2
		Sample Type												
1	B00264227	Rock Pulp	3.39	0.01	0.35	5.3	104	23.2	13.2	<0.001	1.47	2.04	0.5	0.4
2	B00264225	Rock Pulp	2.01	0.02	0.14	12.0	875	9.1	13.4	<0.001	0.88	0.23	1.6	0.7
3	B00264226	Rock Pulp	2.45	0.01	0.16	5.3	248	13.7	12.5	<0.001	0.45	0.3	0.6	1.2
4	B00264222	Rock Pulp	4.37	0.02	0.07	5.6	111	73.4	13.9	<0.001	1.33	0.93	0.6	4.9
5	B00264228	Rock Pulp	2.34	0.02	0.32	6.9	802	17.8	18.9	<0.001	0.81	0.06	1.7	1.5
6	B00264229	Rock Pulp	1.82	0.01	0.13	2.9	933	2.8	16.1	<0.001	0.32	0.16	1.2	0.5
7	B00264201	Rock Pulp	2.43	0.01	0.14	4.0	318	13.3	13.4	<0.001	0.86	1.1	0.6	1
8	B00264205	Rock Pulp	2.43	0.01	0.25	9.6	481	42.5	18.4	<0.001	0.23	0.09	1.2	0.4
9	B00264206	Rock Pulp	2.16	0.01	0.15	8.1	846	15.9	15.4	<0.001	1.82	0.26	1.4	1
10	B00264207	Rock Pulp	2.96	0.02	0.12	4.7	77	73.4	15.2	<0.001	1.24	2.27	0.6	1.8
11	B00264224	Rock Pulp	2.27	0.03	0.41	17.0	113	41.8	4.5	<0.001	0.47	0.45	2.6	4.4
12	B00264223	Rock Pulp	4.28	0.03	0.12	8.3	60	2195.8	21.2	0.003	0.82	5.65	0.9	251.6
13	B00264209	Rock Pulp	1.98	0.02	0.19	7.3	863	31.8	12.1	<0.001	0.99	0.31	1.4	10
QUALITY ASSURANCE / QUALITY CONTROL														
Pulp Replicates														
11	B00264224	Rock Pulp	2.27	0.03	0.41	17.0	113	41.8	4.5	<0.001	0.47	0.45	2.6	4.4
11 R	B00264224	Rep	2.47	0.03	0.40	16.2	111	40.9	4.6	<0.001	0.45	0.42	2.6	2.7
Reference Material														
STD OREAS 24b			3.96	0.11	0.38	60.1	614	9.20	118.1	<0.001	0.19	0.54	9.90	0.50
True Value STD OREAS 24b			**3.86**	**IND**	**0.31**	**57.0**	**620**	**9.23**	**114**	**<0.001**	**0.20**	**0.48**	**9.51**	**0.42**
% Difference			2.6		22.6	5.4	-1.0	-0.3	3.6	0.0	-5.0	12.5	4.1	
Tolerance (%)			***0.37***	***NR***	***N/B***	***5***	***NR***	***1.29***	***15***	***NR***	***0.02***	***NR***	***1.39***	***NR***
Method Blank:														
Method Blank			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2

S. No.	Sample ID	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
	Unit	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	MDL	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
1	B00264227	0.9	2.7	<0.01	<0.01	19.1	<0.005	0.84	5.23	1	0.12	3.04	9	19.2
2	B00264225	<0.2	118.6	<0.01	<0.01	8.6	<0.005	0.17	1.32	2	0.08	9.77	29	14.6
3	B00264226	<0.2	41.4	<0.01	<0.01	10.4	<0.005	0.38	2.75	2	0.10	5.56	413	24.3
4	B00264222	<0.2	23.5	<0.01	<0.01	12.8	<0.005	0.81	4.40	2	0.13	5.52	129	49.2
5	B00264228	<0.2	59.4	<0.01	<0.01	11.6	0.011	0.17	0.93	4	0.10	9.98	19	18.3
6	B00264229	<0.2	48.8	<0.01	<0.01	16.6	0.006	0.36	0.69	3	0.09	9.64	27	9.8
7	B00264201	<0.2	15.1	<0.01	<0.01	15.2	<0.005	0.19	4.31	2	0.10	6.31	50	24.8
8	B00264205	<0.2	90.1	<0.01	<0.01	15.8	0.007	0.11	1.69	2	0.08	9.28	53	11.1
9	B00264206	<0.2	91.5	<0.01	<0.01	8.5	<0.005	0.24	0.62	3	0.07	9.13	35	12.5
10	B00264207	0.3	22	<0.01	<0.01	13.6	<0.005	0.90	3.69	2	0.11	4.53	189	25.7
11	B00264224	<0.2	229.5	<0.01	0.01	10.8	0.013	0.18	0.99	3	<0.05	16.70	32	13.4
12	B00264223	0.7	3.2	<0.01	<0.01	15.9	<0.005	2.57	4.32	3	0.22	4.45	4288	51.1
13	B00264209	<0.2	68.4	<0.01	<0.01	10.4	0.006	0.14	0.54	3	0.06	8.90	37	11.8
QUALITY ASSURANCE / QUALITY CONTROL														
Pulp Replicates														
11	B00264224	<0.2	229.5	<0.01	0.01	10.8	0.013	0.18	0.99	3	<0.05	16.70	32	13.4
11 R	B00264224	<0.2	228.8	<0.01	0.02	10.7	0.013	0.18	1	3	0.06	16.64	31	13.4
Reference Material														
STD OREAS 24b		2.30	30.4	<0.01	0.04	14.7	0.193	0.65	1.58	81	1.21	12.33	99	26.6
True Value STD OREAS 24b		**2.26**	**29.0**	**<0.05**	**<0.02**	**14.3**	**0.198**	**0.66**	**1.74**	**79**	**1.19**	**12.30**	**93**	**24.5**
% Difference		1.8	4.8			2.8	-2.5	-1.5	-9.2	2.5	1.7	0.2	6.5	8.6
Tolerance (%)		***0.30***	***NR***	***NR***	***NR***	***1.1***	***0.017***	***0.08***	***0.26***	***5***	***NR***	***1.7***	***6***	***3.2***
Method Blank:														
Method Blank		<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

Parameter	Method	Unit	RDL	1	2	3	4	5	6	7	8	9	10	10 D	11	12	13	Method Blank
				B00264227	**B00264225**	**B00264226**	**B00264222**	**B00264228**	**B00264229**	**B00264201**	**B00264205**	**B00264206**	**B00264207**	**B00264207 (Dup)**	**B00264224**	**B00264223**	**B00264209**	
Weight of dry sample used	Weighing Scale	g	0.01	250	250	250	250	250	250	250	250	250	250	250	250	250	250	N/A
Volume of DI water used	Graduated Cylinder	mL	0.50	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
On filtered samples using 0.45 micron filter paper																		
pH	pH Meter	pH units	0.01	6.7	8.3	7.0	7.4	8.9	8.3	8.0	9.1	8.0	7.4	7.4	9.6	8.0	9.2	5.3
EC	EC Meter	µS/cm	1	74	115	73	83	65	55	66	67	107	98	94	70	38	67	1.05
ORP	Eh Meter	mV	1	240	96	135	133	85	100	110	92	125	168	170	89	122	106	302
Acidity (to pH 8.3)	Titration/Calc.	mg CaCO3/L	0.5	7.0	<0.5	2.5	2.0	<0.5	0.5	2.0	<0.5	2.0	5.0	4.5	<0.5	3.0	<0.5	7.5
Alkalinity (to pH 4.5)	Titration/Calc.	mg CaCO3/L	0.5	6.0	18.0	10.0	15.8	18.5	19.0	19.5	25.5	20.5	15.0	14.0	23.0	15.0	29.0	1.5
Dissolved Sulphate (SO4)	Turbidimetry	mg/L	1	22	27	15	14	9	<1	6	<1	13	19	16	5	<1	4	<1
Dissolved Metals by ICP-MS:																		
Dissolved Hardness (CaCO3)	ICP-MS	mg/L	0.50	21.3	34.0	20.6	21.7	19.7	15.0	20.3	16.3	33.2	30.5	28.2	22.3	7.72	19.4	<0.50
Dissolved Aluminum (Al)	ICP-MS	mg/L	0.0030	0.0854	0.295	0.0624	0.185	0.441	0.533	0.328	0.504	0.290	0.0328	0.0289	0.220	0.322	0.425	<0.0030
Dissolved Antimony (Sb)	ICP-MS	mg/L	0.00050	0.0241	0.00089	0.00119	0.00460	<0.00050	0.00095	0.00450	0.00071	0.00144	0.00324	0.00303	0.00296	0.0267	0.00233	<0.00050
Dissolved Arsenic (As)	ICP-MS	mg/L	0.00010	0.00078	0.00039	0.00023	0.00030	0.00024	0.00022	0.00033	0.00034	0.00031	0.00016	0.00016	0.00466	0.00276	0.00075	<0.00010
Dissolved Barium (Ba)	ICP-MS	mg/L	0.0010	0.0040	0.0048	0.0078	0.0074	0.0043	0.0025	<0.0010	0.0063	0.0043	0.0050	0.0045	0.0090	0.0044	0.0041	<0.0010
Dissolved Beryllium (Be)	ICP-MS	mg/L	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00018	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Bismuth (Bi)	ICP-MS	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Boron (B)	ICP-MS	mg/L	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Cadmium (Cd)	ICP-MS	mg/L	0.000010	0.000076	<0.000010	0.000069	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000207	0.000599	0.000689	<0.000010	0.000033	<0.000010	<0.000010
Dissolved Chromium (Cr)	ICP-MS	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Cobalt (Co)	ICP-MS	mg/L	0.00050	0.00109	<0.00050	0.00154	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00079	0.00078	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Copper (Cu)	ICP-MS	mg/L	0.00020	0.00388	0.00577	0.00232	0.00330	0.00132	0.00176	0.00135	0.00209	0.00256	0.00130	0.00057	0.00272	0.00178	0.00125	<0.00020
Dissolved Iron (Fe)	ICP-MS	mg/L	0.0050	0.140	0.0379	0.0841	0.257	0.0162	0.0309	0.0245	0.0262	0.0296	0.0063	0.0075	0.0148	0.0144	0.0106	<0.0050
Dissolved Lead (Pb)	ICP-MS	mg/L	0.00020	0.00408	<0.00020	0.00088	0.00080	<0.00020	<0.00020	<0.00020	<0.00020	0.00029	0.00042	0.00055	0.00026	0.00452	<0.00020	<0.00020
Dissolved Lithium (Li)	ICP-MS	mg/L	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Manganese (Mn)	ICP-MS	mg/L	0.0010	0.121	0.0123	0.0784	0.0327	0.0051	0.0033	0.0032	0.0090	0.0192	0.243	0.243	0.0034	0.0046	0.0040	<0.0010
Dissolved Mercury (Hg)	ICP-MS	mg/L	0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Dissolved Molybdenum (Mo)	ICP-MS	mg/L	0.0010	<0.0010	<0.0010	0.0012	0.0016	<0.0010	0.0012	0.0023	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0027	<0.0010	<0.0010
Dissolved Nickel (Ni)	ICP-MS	mg/L	0.0010	0.0126	0.0031	0.0153	0.0029	<0.0010	<0.0010	<0.0010	<0.0010	0.0014	0.0082	0.0078	0.0029	0.0017	<0.0010	<0.0010
Dissolved Phosphorus (P)	ICP-MS	mg/L	0.010	<0.010	0.036	<0.010	0.010	0.012	0.025	<0.010	<0.010	0.031	<0.010	<0.010	<0.010	0.012	0.011	<0.010
Dissolved Selenium (Se)	ICP-MS	mg/L	0.00010	0.00022	0.00048	0.00036	0.00359	0.00053	0.00031	0.00097	0.00040	0.00062	0.00089	0.00084	0.00147	0.0424	0.00509	<0.00010
Dissolved Silicon (Si)	ICP-MS	mg/L	0.10	0.88	0.77	0.58	0.74	0.94	0.94	0.63	0.90	0.63	0.40	0.34	1.18	0.70	0.81	<0.10
Dissolved Silver (Ag)	ICP-MS	mg/L	0.000020	0.000159	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Dissolved Strontium (Sr)	ICP-MS	mg/L	0.0010	0.0084	0.0195	0.0159	0.0116	0.0141	0.0069	0.0053	0.0119	0.0260	0.0129	0.0120	0.0287	0.0057	0.0140	<0.0010
Dissolved Thallium (Tl)	ICP-MS	mg/L	0.000050	0.000415	<0.000050	<0.000050	0.000120	<0.000050	<0.000050	<0.000050	<0.000050	0.000060	0.000201	0.000207	<0.000050	0.000111	<0.000050	<0.000050
Dissolved Tin (Sn)	ICP-MS	mg/L	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Titanium (Ti)	ICP-MS	mg/L	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Uranium (U)	ICP-MS	mg/L	0.00010	0.0229	0.00461	0.00096	0.00147	0.00158	0.00137	0.00267	0.00483	0.00100	0.00059	0.00063	0.00176	0.00156	0.00115	<0.00010
Dissolved Vanadium (V)	ICP-MS	mg/L	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Zinc (Zn)	ICP-MS	mg/L	0.0050	0.0067	<0.0050	0.0123	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.272	0.289	<0.0050	0.0063	<0.0050	<0.0050
Dissolved Zirconium (Zr)	ICP-MS	mg/L	0.00050	0.00490	0.00248	0.00205	0.00291	0.00075	0.00214	0.00301	0.00078	0.00154	0.00084	0.00062	0.00059	0.00311	<0.00050	<0.00050
Dissolved Calcium (Ca)	ICP-AES	mg/L	0.050	7.40	10.8	6.17	5.49	6.71	4.85	6.83	5.34	9.26	7.68	7.02	8.25	2.87	6.24	<0.050
Dissolved Magnesium (Mg)	ICP-AES	mg/L	0.050	0.669	1.71	1.26	1.93	0.713	0.710	0.790	0.708	2.45	2.75	2.60	0.413	0.135	0.938	<0.050
Dissolved Potassium (K)	ICP-AES	mg/L	0.050	6.27	5.59	4.25	4.22	4.28	4.89	4.06	4.57	5.53	3.19	2.65	1.71	3.17	4.46	<0.050
Dissolved Sodium (Na)	ICP-AES	mg/L	0.050	1.65	2.74	1.33	2.46	1.65	0.925	1.17	2.84	1.22	1.27	1.29	2.41	1.68	1.35	<0.050
Dissolved Sulphur (S)	ICP-AES	mg/L	3.0	8.3	9.8	5.3	4.2	3.4	<3.0	<3.0	<3.0	4.3	6.5	6.1	<3.0	<3.0	<3.0	<3.0
Ion Balance																		
Major Anions	Calc.	meq/L		0.58	0.92	0.51	0.61	0.56	0.38	0.52	0.51	0.68	0.70	0.61	0.56	0.30	0.66	
Major Cations	Calc.	meq/L		0.68	0.98	0.59	0.68	0.62	0.53	0.60	0.62	0.89	0.76	0.70	0.62	0.35	0.61	
Difference	Calc.	meq/L		-0.10	-0.05	-0.08	-0.07	-0.07	-0.15	-0.08	-0.11	-0.21	-0.06	-0.09	-0.06	-0.05	0.05	
Balance (%)	Calc.	%		-7.8%	-2.9%	-7.1%	-5.5%	-5.7%	-16.2%	-7.5%	-10.0%	-13.5%	-4.4%	-6.7%	-4.7%	-7.0%	4.2%	
Shake Flask Extract ID:				*NS4041*	*NS4042*	*NS4043*	*NS4044*	*NS4045*	*NS4046*	*NS4047*	*NS4048*	*NS4049*	*NS4050*	*NS4051*	*NS4052*	*NS4053*	*NS4054*	*NS4055*

Notes:
Job No: B5A5258

Date of Analysis (24 h): 24/25-Nov, 2015.
pH of DI water used (pH Units): 5.59
EC of DI water used (µS/cm): 0.75

Abbreviations:
R / Rep = Replicate (which involves the analysis of the same Shake Flask Extract aliquot).
D / Dup = Duplicate (which involves the analysis of a 2nd SF extract, produced by processing a separate split of the original client sample received).
EC = Electrical Conductivity
ORP = Oxidation Reduction Potential
RDL = Reportable Detection Limit.
Calc. = Calculation

Method Reference: Prediction Manual for Drainage Chemistry from Sulphidic Geologic Material, MEND Report 1.20.1; Version 0 - Dec. 2009. Section 11.5; P 11 (8-9).
Extraction Method used: Using Gyratory Shaker for 24 h (± 2 h - gentle agitation).
Liquid:Solid ratio used: 3:1; 750 mL DI H_2O: 250 g of crushed <1/4 inch (<6.3 mm) material.

CERTIFICATE OF ANALYSIS ▪ MEND-SFE QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

QA/QC Batch	QC Type	Parameter	Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
SFE - Sulphate							
N/A	STD Mineral Water (10.5 mg/L)	Dissolved Sulphate	12/4/2015	10.7	101.9	%	80% - 110%
N/A	Spiked Blank (19.61 mg.L)		12/4/2015	19.60	99.9	%	80% - 110%
SFE - Dissolved Metals by ICP-MS							
8127320	Matrix Spike	Dissolved Aluminum (Al)	11/27/2015		109	%	80 - 120
		Dissolved Antimony (Sb)	11/27/2015		104	%	80 - 120
		Dissolved Arsenic (As)	11/27/2015		109	%	80 - 120
		Dissolved Barium (Ba)	11/27/2015		NC	%	80 - 120
		Dissolved Beryllium (Be)	11/27/2015		104	%	80 - 120
		Dissolved Bismuth (Bi)	11/27/2015		106	%	80 - 120
		Dissolved Boron (B)	11/27/2015		103	%	80 - 120
		Dissolved Cadmium (Cd)	11/27/2015		101	%	80 - 120
		Dissolved Chromium (Cr)	11/27/2015		100	%	80 - 120
		Dissolved Cobalt (Co)	11/27/2015		106	%	80 - 120
		Dissolved Copper (Cu)	11/27/2015		103	%	80 - 120
		Dissolved Iron (Fe)	11/27/2015		NC	%	80 - 120
		Dissolved Lead (Pb)	11/27/2015		111	%	80 - 120
		Dissolved Lithium (Li)	11/27/2015		102	%	80 - 120
		Dissolved Manganese (Mn)	11/27/2015		NC	%	80 - 120
		Dissolved Mercury (Hg)	11/27/2015		102	%	80 - 120
		Dissolved Molybdenum (Mo)	11/27/2015		88	%	80 - 120
		Dissolved Nickel (Ni)	11/27/2015		102	%	80 - 120
		Dissolved Selenium (Se)	11/27/2015		96	%	80 - 120
		Dissolved Silver (Ag)	11/27/2015		104	%	80 - 120
		Dissolved Strontium (Sr)	11/27/2015		NC	%	80 - 120
		Dissolved Thallium (Tl)	11/27/2015		105	%	80 - 120
		Dissolved Tin (Sn)	11/27/2015		103	%	80 - 120
		Dissolved Titanium (Ti)	11/27/2015		87	%	80 - 120
		Dissolved Uranium (U)	11/27/2015		104	%	80 - 120
		Dissolved Vanadium (V)	11/27/2015		110	%	80 - 120
		Dissolved Zinc (Zn)	11/27/2015		NC	%	80 - 120
8127320	Spiked Blank	Dissolved Aluminum (Al)	11/27/2015		106	%	80 - 120
		Dissolved Antimony (Sb)	11/27/2015		101	%	80 - 120
		Dissolved Arsenic (As)	11/27/2015		98	%	80 - 120
		Dissolved Barium (Ba)	11/27/2015		97	%	80 - 120
		Dissolved Beryllium (Be)	11/27/2015		110	%	80 - 120
		Dissolved Bismuth (Bi)	11/27/2015		99	%	80 - 120
		Dissolved Boron (B)	11/27/2015		107	%	80 - 120
		Dissolved Cadmium (Cd)	11/27/2015		96	%	80 - 120
		Dissolved Chromium (Cr)	11/27/2015		100	%	80 - 120
		Dissolved Cobalt (Co)	11/27/2015		99	%	80 - 120
		Dissolved Copper (Cu)	11/27/2015		98	%	80 - 120
		Dissolved Iron (Fe)	11/27/2015		113	%	80 - 120
		Dissolved Lead (Pb)	11/27/2015		102	%	80 - 120
		Dissolved Lithium (Li)	11/27/2015		101	%	80 - 120
		Dissolved Manganese (Mn)	11/27/2015		103	%	80 - 120
		Dissolved Mercury (Hg)	11/27/2015		105	%	80 - 120
		Dissolved Molybdenum (Mo)	11/27/2015		99	%	80 - 120
		Dissolved Nickel (Ni)	11/27/2015		102	%	80 - 120
		Dissolved Selenium (Se)	11/27/2015		94	%	80 - 120
		Dissolved Silver (Ag)	11/27/2015		97	%	80 - 120
		Dissolved Strontium (Sr)	11/27/2015		101	%	80 - 120
		Dissolved Thallium (Tl)	11/27/2015		100	%	80 - 120
		Dissolved Tin (Sn)	11/27/2015		97	%	80 - 120
		Dissolved Titanium (Ti)	11/27/2015		105	%	80 - 120
		Dissolved Uranium (U)	11/27/2015		100	%	80 - 120
		Dissolved Vanadium (V)	11/27/2015		101	%	80 - 120
		Dissolved Zinc (Zn)	11/27/2015		103	%	80 - 120

CERTIFICATE OF ANALYSIS ▪ MEND-SFE QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522

CLIENT: BMC MINERALS (No.1) LTD.

CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03

REPORT VERSION: 3

QA/QC Batch	QC Type	Parameter	Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
8127320	Method Blank	Dissolved Aluminum (Al)	11/27/2015	<0.0030		mg/L	
		Dissolved Antimony (Sb)	11/27/2015	<0.00050		mg/L	
		Dissolved Arsenic (As)	11/27/2015	<0.00010		mg/L	
		Dissolved Barium (Ba)	11/27/2015	<0.0010		mg/L	
		Dissolved Beryllium (Be)	11/27/2015	<0.00010		mg/L	
		Dissolved Bismuth (Bi)	11/27/2015	<0.0010		mg/L	
		Dissolved Boron (B)	11/27/2015	<0.050		mg/L	
		Dissolved Cadmium (Cd)	11/27/2015	<0.000010		mg/L	
		Dissolved Chromium (Cr)	11/27/2015	<0.0010		mg/L	
		Dissolved Cobalt (Co)	11/27/2015	<0.00050		mg/L	
		Dissolved Copper (Cu)	11/27/2015	<0.00020		mg/L	
		Dissolved Iron (Fe)	11/27/2015	<0.0050		mg/L	
		Dissolved Lead (Pb)	11/27/2015	<0.00020		mg/L	
		Dissolved Lithium (Li)	11/27/2015	<0.0050		mg/L	
		Dissolved Manganese (Mn)	11/27/2015	<0.0010		mg/L	
		Dissolved Mercury (Hg)	11/27/2015	<0.000050		mg/L	
		Dissolved Molybdenum (Mo)	11/27/2015	<0.0010		mg/L	
		Dissolved Nickel (Ni)	11/27/2015	<0.0010		mg/L	
		Dissolved Phosphorus (P)	11/27/2015			mg/L	
		Dissolved Selenium (Se)	11/27/2015	<0.00010		mg/L	
		Dissolved Silicon (Si)	11/27/2015	<0.10		mg/L	
		Dissolved Silver (Ag)	11/27/2015	<0.000020		mg/L	
		Dissolved Strontium (Sr)	11/27/2015	<0.0010		mg/L	
		Dissolved Thallium (Tl)	11/27/2015	<0.000050		mg/L	
		Dissolved Tin (Sn)	11/27/2015	<0.0050		mg/L	
		Dissolved Titanium (Ti)	11/27/2015	<0.0050		mg/L	
		Dissolved Uranium (U)	11/27/2015	<0.00010		mg/L	
		Dissolved Vanadium (V)	11/27/2015	<0.0050		mg/L	
		Dissolved Zinc (Zn)	11/27/2015	<0.0050		mg/L	
		Dissolved Zirconium (Zr)	11/27/2015	<0.00050		mg/L	
8127320	RPD	Dissolved Iron (Fe)	11/27/2015	1.3		%	20
		Dissolved Zinc (Zn)	11/27/2015	NC		%	20
8127324	Matrix Spike	Dissolved Aluminum (Al)	11/30/2015		103	%	80 - 120
		Dissolved Antimony (Sb)	11/30/2015		109	%	80 - 120
		Dissolved Arsenic (As)	11/30/2015		101	%	80 - 120
		Dissolved Barium (Ba)	11/30/2015		100	%	80 - 120
		Dissolved Beryllium (Be)	11/30/2015		109	%	80 - 120
		Dissolved Bismuth (Bi)	11/30/2015		100	%	80 - 120
		Dissolved Boron (B)	11/30/2015		108	%	80 - 120
		Dissolved Cadmium (Cd)	11/30/2015		104	%	80 - 120
		Dissolved Chromium (Cr)	11/30/2015		102	%	80 - 120
		Dissolved Cobalt (Co)	11/30/2015		99	%	80 - 120
		Dissolved Copper (Cu)	11/30/2015		99	%	80 - 120
		Dissolved Iron (Fe)	11/30/2015		116	%	80 - 120
		Dissolved Lead (Pb)	11/30/2015		103	%	80 - 120
		Dissolved Lithium (Li)	11/30/2015		102	%	80 - 120
		Dissolved Manganese (Mn)	11/30/2015		100	%	80 - 120
		Dissolved Mercury (Hg)	11/30/2015		108	%	80 - 120
		Dissolved Molybdenum (Mo)	11/30/2015		103	%	80 - 120
		Dissolved Nickel (Ni)	11/30/2015		101	%	80 - 120
		Dissolved Selenium (Se)	11/30/2015		104	%	80 - 120
		Dissolved Silver (Ag)	11/30/2015		102	%	80 - 120
		Dissolved Strontium (Sr)	11/30/2015		96	%	80 - 120
		Dissolved Thallium (Tl)	11/30/2015		106	%	80 - 120
		Dissolved Tin (Sn)	11/30/2015		104	%	80 - 120
		Dissolved Titanium (Ti)	11/30/2015		97	%	80 - 120
		Dissolved Uranium (U)	11/30/2015		99	%	80 - 120
		Dissolved Vanadium (V)	11/30/2015		98	%	80 - 120
		Dissolved Zinc (Zn)	11/30/2015		105	%	80 - 120

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

QA/QC Batch	QC Type	Parameter	Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
8127324	Spiked Blank	Dissolved Aluminum (Al)	11/30/2015		98	%	80 - 120
		Dissolved Antimony (Sb)	11/30/2015		105	%	80 - 120
		Dissolved Arsenic (As)	11/30/2015		101	%	80 - 120
		Dissolved Barium (Ba)	11/30/2015		97	%	80 - 120
		Dissolved Beryllium (Be)	11/30/2015		103	%	80 - 120
		Dissolved Bismuth (Bi)	11/30/2015		89	%	80 - 120
		Dissolved Boron (B)	11/30/2015		103	%	80 - 120
		Dissolved Cadmium (Cd)	11/30/2015		100	%	80 - 120
		Dissolved Chromium (Cr)	11/30/2015		104	%	80 - 120
		Dissolved Cobalt (Co)	11/30/2015		103	%	80 - 120
		Dissolved Copper (Cu)	11/30/2015		101	%	80 - 120
		Dissolved Iron (Fe)	11/30/2015		108	%	80 - 120
		Dissolved Lead (Pb)	11/30/2015		96	%	80 - 120
		Dissolved Lithium (Li)	11/30/2015		94	%	80 - 120
		Dissolved Manganese (Mn)	11/30/2015		105	%	80 - 120
		Dissolved Mercury (Hg)	11/30/2015		101	%	80 - 120
		Dissolved Molybdenum (Mo)	11/30/2015		102	%	80 - 120
		Dissolved Nickel (Ni)	11/30/2015		103	%	80 - 120
		Dissolved Selenium (Se)	11/30/2015		102	%	80 - 120
		Dissolved Silver (Ag)	11/30/2015		95	%	80 - 120
		Dissolved Strontium (Sr)	11/30/2015		89	%	80 - 120
		Dissolved Thallium (Tl)	11/30/2015		100	%	80 - 120
		Dissolved Tin (Sn)	11/30/2015		101	%	80 - 120
		Dissolved Titanium (Ti)	11/30/2015		100	%	80 - 120
		Dissolved Uranium (U)	11/30/2015		93	%	80 - 120
		Dissolved Vanadium (V)	11/30/2015		109	%	80 - 120
		Dissolved Zinc (Zn)	11/30/2015		105	%	80 - 120
8127324	Method Blank	Dissolved Aluminum (Al)	11/30/2015	<0.0030		mg/L	
		Dissolved Antimony (Sb)	11/30/2015	<0.00050		mg/L	
		Dissolved Arsenic (As)	11/30/2015	<0.00010		mg/L	
		Dissolved Barium (Ba)	11/30/2015	<0.0010		mg/L	
		Dissolved Beryllium (Be)	11/30/2015	<0.00010		mg/L	
		Dissolved Bismuth (Bi)	11/30/2015	<0.0010		mg/L	
		Dissolved Boron (B)	11/30/2015	<0.050		mg/L	
		Dissolved Cadmium (Cd)	11/30/2015	<0.000010		mg/L	
		Dissolved Chromium (Cr)	11/30/2015	<0.0010		mg/L	
		Dissolved Cobalt (Co)	11/30/2015	<0.00050		mg/L	
		Dissolved Copper (Cu)	11/30/2015	<0.00020		mg/L	
		Dissolved Iron (Fe)	11/30/2015	<0.0050		mg/L	
		Dissolved Lead (Pb)	11/30/2015	<0.00020		mg/L	
		Dissolved Lithium (Li)	11/30/2015	<0.0050		mg/L	
		Dissolved Manganese (Mn)	11/30/2015	<0.0010		mg/L	
		Dissolved Mercury (Hg)	11/30/2015	<0.000050		mg/L	
		Dissolved Molybdenum (Mo)	11/30/2015	<0.0010		mg/L	
		Dissolved Nickel (Ni)	11/30/2015	<0.0010		mg/L	
		Dissolved Phosphorus (P)	11/30/2015	<0.010		mg/L	
		Dissolved Selenium (Se)	11/30/2015	<0.00010		mg/L	
		Dissolved Silicon (Si)	11/30/2015	<0.10		mg/L	
		Dissolved Silver (Ag)	11/30/2015	<0.000020		mg/L	
		Dissolved Strontium (Sr)	11/30/2015	<0.0010		mg/L	
		Dissolved Thallium (Tl)	11/30/2015	<0.000050		mg/L	
		Dissolved Tin (Sn)	11/30/2015	<0.0050		mg/L	
		Dissolved Titanium (Ti)	11/30/2015	<0.0050		mg/L	
		Dissolved Uranium (U)	11/30/2015	<0.00010		mg/L	
		Dissolved Vanadium (V)	11/30/2015	<0.0050		mg/L	
		Dissolved Zinc (Zn)	11/30/2015	<0.0050		mg/L	
		Dissolved Zirconium (Zr)	11/30/2015	<0.00050		mg/L	
8127324	RPD	Dissolved Arsenic (As)	11/30/2015	NC		%	20
		Dissolved Barium (Ba)	11/30/2015	NC		%	20
		Dissolved Cadmium (Cd)	11/30/2015	NC		%	20
		Dissolved Chromium (Cr)	11/30/2015	NC		%	20
		Dissolved Copper (Cu)	11/30/2015	NC		%	20
		Dissolved Lead (Pb)	11/30/2015	NC		%	20
		Dissolved Zinc (Zn)	11/30/2015	NC		%	20

Notes:
Job Number: B5A5258
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresses:	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

REPORTING	
Global Project No:	1522
Report Version:	2
Pages (Including Cover):	4
Report Title:	COA 79 KZK Samples (rec'd 27-Jun16)
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

RESULTS		
Reported To:	**1**	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
	4	Jane Capp (jane@omipl.com.au)
Date Reported:		Version 1: July 29, 2016 (Friday); Final (V2): August 3, 2016.

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kellib@bmcminerals.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
cc:	BMC Accounts (accounts@bmcminerals.com)
Global Invoice No:	ARD1522-0716B
Date Submitted:	July 29, 2016 (Friday)

NOTES
All samples are stored at no charge for 90 days except on-going HCT head client samples.
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

PAGE: 2 of 4
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	BMC Sample ID	Geodomain	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes:	
1	Q930112	AK RHYv	Rock	4.28	Dry		
2	Q930118	AK RHYv	Rock	3.54	Dry		
3	Q930141	AK RHYv	Rock	3.92	Dry		
4	Q930113	CA CL MAF	Rock	3.56	Dry		
5	Q930127	CA CL MAF	Rock	3.60	Damp		
6	Q930128	CA CL MAF	Rock	3.52	Dry		
7	Q930129	CA CL MAF	Rock	3.38	Dry		
8	Q930130	CA CL MAF	Rock	3.54	Dry		
9	Q930132	CA CL MAF	Rock	3.74	Damp		
10	Q930133	CA CL MAF	Rock	3.74	Damp		
11	Q930134	MU PY RHY	Rock	3.54	Damp		
12	Q930135	CA CL MAF	Rock	3.42	Damp		
13	Q930137	CA CL MAF	Rock	3.30	Dry		
14	Q930143	CA CL MAF	Rock	3.62	Dry		
15	Q930144	MU PY RHY	Rock	4.48	Damp		
16	Q930145	CA CL MAF	Rock	3.80	Damp		
17	Q930147	CA CL MAF	Rock	4.20	Dry		
18	Q930120	CARB MDS/RHY	Rock	3.38	Damp		
19	Q930123	CARB MDS/RHY	Rock	3.60	Damp		
20	Q930101	MDS	Rock	3.54	Dry	Crush to Column Particle Size	1
21	Q930102	MDS	Rock	3.42	Damp	Crush to Column Particle Size	2
22	Q930103	MDS	Rock	2.92	Damp	Crush to Column Particle Size	3
23	Q930104	MDS	Rock	2.92	Damp	Crush to Column Particle Size	4
24	Q930105	MDS	Rock	3.26	Dry	Crush to Column Particle Size	5
25	Q930106	MDS	Rock	3.80	Dry	Crush to Column Particle Size	6
26	Q930107	MDS	Rock	3.78	Dry	Crush to Column Particle Size	7
27	Q930108	MDS	Rock	3.92	Dry	Crush to Column Particle Size	8
28	Q930109	MDS	Rock	4.68	Damp	Crush to Column Particle Size	9
29	Q930110	MDS	Rock	3.80	Damp	Crush to Column Particle Size	10
30	Q930111	MDS	Rock	3.74	Dry	Crush to Column Particle Size	11
31	Q930148	MDS	Rock	4.46	Dry	Crush to Column Particle Size	12
32	Q930149	MDS	Rock	3.80	Damp	Crush to Column Particle Size	13
33	Q930150	MDS	Rock	4.20	Dry	Crush to Column Particle Size	14
34	Q930151	MDS	Rock	4.08	Dry	Crush to Column Particle Size	15
35	Q930152	MDS	Rock	3.76	Damp	Crush to Column Particle Size	16
36	Q930153	MDS	Rock	3.32	Damp	Crush to Column Particle Size	17
37	Q930154	MDS	Rock	3.42	Damp	Crush to Column Particle Size	18
38	Q930155	MDS	Rock/Fines	3.44	Dry	Crush to Column Particle Size	19
39	Q930156	MDS	Rock	3.44	Damp	Crush to Column Particle Size	20
40	Q930157	MDS	Rock	3.70	Damp	Crush to Column Particle Size	21
41	Q930158	MDS	Rock	4.08	Dry	Crush to Column Particle Size	22
42	Q930159	MDS	Rock/Fines	3.82	Damp	Crush to Column Particle Size	23
43	Q930160	MDS	Rock	3.82	Dry	Crush to Column Particle Size	24
44	Q930161	MDS	Rock	3.44	Damp	Crush to Column Particle Size	25
45	Q930162	MDS	Rock	3.52	Dry	Crush to Column Particle Size	26

Sample Receipt Info:	
Date Sample Received:	June 27, 2016 (Monday)
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Chris Hughes (ChrisH@equityexploration.com)
	By Email/COC.
Date Instruction Received:	June 24, 2016 (Friday)

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	BMC Sample ID	Geodomain	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes:	
46	Q930163	MDS	Rock	3.42	Damp	Crush to Column Particle Size	27
47	Q930164	MDS	Rock	4.40	Dry	Crush to Column Particle Size	28
48	Q930165	AK RHYv	Rock	3.58	Damp		
49	Q930166	AK RHYv	Rock	3.20	Damp		
50	Q930167	MDS	Rock	3.56	Damp	Crush to Column Particle Size	29
51	Q930168	MDS	Rock	4.10	Damp	Crush to Column Particle Size	30
52	Q930169	MDS	Rock	4.54	Damp	Crush to Column Particle Size	31
53	Q930170	AK RHYv	Rock	3.38	Damp		
54	Q930171	CARB MDS/RHY	Rock	4.00	Damp		
55	Q930172	MDS	Rock	3.58	Dry	Crush to Column Particle Size	32
56	Q930173	MDS	Rock	3.58	Dry	Crush to Column Particle Size	33
57	Q930174	MDS	Rock	3.96	Damp	Crush to Column Particle Size	34
58	Q930175	MDS	Rock	3.40	Dry	Crush to Column Particle Size	35
59	Q930176	MDS	Rock	3.40	Dry	Crush to Column Particle Size	36
60	Q930114	MU PY RHY	Rock	3.24	Dry		
61	Q930115	MU PY RHY	Rock	4.12	Dry		
62	Q930122	MU PY RHY	Rock	3.46	Damp		
63	Q930136	MU PY RHY	Rock	3.32	Dry		
64	Q930138	MU PY RHY	Rock	3.48	Damp		
65	Q930146	MU PY RHY	Rock	3.60	Damp		
66	Q930116	PY AK RHYv	Rock	3.54	Damp		
67	Q930117	PY AK RHYv	Rock	4.14	Dry		
68	Q930119	PY AK RHYv	Rock	3.38	Dry		
69	Q930121	PY AK RHYv	Rock	4.32	Dry		
70	Q930124	PY AK RHYv	Rock	3.52	Dry		
71	Q930125	PY AK RHYv	Rock	3.64	Dry		
72	Q930126	PY AK RHYv	Rock	3.36	Dry		
73	Q930131	PY AK RHYv	Rock	3.72	Dry		
74	Q930139	MU PY RHY	Rock	3.82	Dry		
75	Q930140	PY AK RHYv	Rock	3.78	Dry		
76	Q930142	PY AK RHYv	Rock	3.48	Dry		
77	Q930177	CA CL MAF	Rock	3.82	Damp		
78	Q930178	PY AK RHYv	Rock	3.42	Dry		
79	Q930179	CA CL MAF	Rock	3.38	Dry		

Sample Receipt Info:

Total wt. of sample rec'd (kg): **290.9**

Notes:

Due to the possibility of a further trickle leach column using the MDS geodomain material, just the MDS samples (indicated in red, total 36 samples) were crushed to the same size as the other trickle leach columns - i.e. 80% passing 2 inch. Email from Andrew Gault dated June 28, 2016).

Remaining samples were all crushed to regular 85% passing 1/4 inch (6.3 mm).

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Mod. ABA NP	NNP*4	NPR*5
	Units:	pH Units		wt.%	wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne			
	Reported Detection Limit:	*0.01*		0.01	*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*		
1	Q930112	9.6	Strong	0.71	0.57	47.5	0.17	<0.01	0.17	5.3	46.0	40.7	8.7
2	Q930118	9.0	Strong	1.25	0.86	71.7	0.06	<0.01	0.06	1.9	70.7	68.8	37.7
3	Q930141	9.7	Strong	1.04	0.73	60.8	0.35	<0.01	0.35	10.9	69.4	58.5	6.3
4	Q930113	9.0	Strong	0.57	0.55	45.8	0.10	0.02	0.08	2.5	67.4	64.9	27.0
5	Q930127	9.6	Strong	1.26	1.22	101.7	0.07	0.02	0.05	1.6	106.8	105.2	68.4
6	Q930128	8.9	Strong	1.04	1.00	83.3	0.01	0.02	<0.01	<0.3	138.9	138.9	N/A
7	Q930129	8.7	Strong	2.87	2.74	228.3	0.01	0.01	<0.01	<0.3	204.5	204.5	N/A
8	Q930130	9.4	Strong	0.25	0.23	19.2	0.02	0.02	<0.01	<0.3	28.8	28.8	N/A
9	Q930132	9.6	Strong	0.66	0.64	53.3	0.02	0.02	<0.01	<0.3	59.3	59.3	N/A
10	Q930133	9.2	Strong	1.1	1.08	90.0	0.01	<0.01	0.01	0.3	93.2	92.9	298.2
11	Q930134	9.3	None	0.04	<0.02	<1.7	1.27	<0.01	1.27	39.7	1.5	-38.2	0.0
12	Q930135	9.0	Strong	1.48	1.44	120.0	0.06	0.03	0.03	0.9	123.5	122.6	131.7
13	Q930137	9.2	Strong	1.17	1.10	91.7	0.02	0.02	<0.01	<0.3	102.0	102.0	N/A
14	Q930143	9.1	Strong	0.47	0.42	35.0	0.19	<0.01	0.19	5.9	36.1	30.2	6.1
15	Q930144	9.7	Strong	0.32	0.27	22.5	0.86	<0.01	0.86	26.9	26.3	-0.6	1.0
16	Q930145	8.9	Strong	2.13	2.02	168.3	0.13	0.03	0.10	3.1	168.2	165.1	53.8
17	Q930147	9.4	Strong	1.01	0.96	80.0	0.11	0.03	0.08	2.5	92.7	90.2	37.1
18	Q930120	9.2	Moderate	0.9	0.49	40.8	0.19	<0.01	0.19	5.9	46.7	40.8	7.9
19	Q930123	7.8	Slight	0.46	0.10	8.3	3.68	0.02	3.66	114.4	9.6	-104.8	0.1
20	Q930101	9.0	Strong	2.58	2.46	205.0	0.11	0.02	0.09	2.8	198.2	195.4	70.5
21	Q930102	8.6	Strong	3.72	3.22	268.3	0.13	<0.01	0.13	4.1	281.3	277.2	69.2
22	Q930103	8.8	Strong	4.57	3.69	307.5	0.10	<0.01	0.10	3.1	291.4	288.3	93.2
23	Q930104	8.4	Moderate	2.07	0.44	36.7	0.69	0.01	0.68	21.3	37.4	16.2	1.8
24	Q930105	9.4	Strong	1.41	0.90	75.0	0.23	0.02	0.21	6.6	81.8	75.2	12.5
25	Q930106	9.1	Strong	3.62	3.21	267.5	0.13	<0.01	0.13	4.1	256.9	252.8	63.2
26	Q930107	9.1	Strong	3	2.50	208.3	0.27	0.02	0.25	7.8	192.1	184.3	24.6
27	Q930108	9.0	Moderate	2.14	0.61	50.8	0.42	<0.01	0.42	13.1	30.1	17.0	2.3
28	Q930109	9.4	Strong	3.8	3.66	305.0	0.02	<0.01	0.02	0.6	286.1	285.5	457.8
29	Q930110	8.9	Strong	1.62	0.98	81.7	0.06	<0.01	0.06	1.9	79.3	77.4	42.3
30	Q930111	8.2	Moderate	1.88	0.38	31.7	0.58	0.02	0.56	17.5	36.6	19.1	2.1
31	Q930148	8.6	Strong	1	0.65	54.2	0.91	0.02	0.89	27.8	71.8	44.0	2.6
32	Q930149	8.6	Moderate	0.44	0.08	6.7	0.35	0.03	0.32	10.0	12.6	2.6	1.3
33	Q930150	8.6	Slight	1	0.42	35.0	0.22	<0.01	0.22	6.9	38.0	31.1	5.5
34	Q930151	8.5	Slight	0.76	0.23	19.2	0.30	0.03	0.27	8.4	25.0	16.6	3.0
35	Q930152	8.6	Strong	1.62	1.38	115.0	0.59	0.03	0.56	17.5	119.6	102.1	6.8
36	Q930153	8.9	Moderate	1.53	1.15	95.8	0.28	0.02	0.26	8.1	91.4	83.3	11.2
37	Q930154	9.3	Strong	2.68	2.10	175.0	0.37	<0.01	0.37	11.6	168.8	157.2	14.6
38	Q930155	8.9	Strong	3.86	3.11	259.2	0.18	<0.01	0.18	5.6	258.0	252.4	45.9
39	Q930156	9.0	Strong	7.25	6.84	570.0	0.18	<0.01	0.18	5.6	548.8	543.2	97.6

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Mod. ABA NP	NNP*4	NPR*5
	Units:	pH Units		wt.%	wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne			
	Reported Detection Limit:	*0.01*		0.01	*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*		
40	Q930157	7.3	Strong	2.41	0.80	66.7	2.11	0.22	1.89	59.1	82.8	23.7	1.4
41	Q930158	9.4	Strong	4.1	3.59	299.2	0.18	<0.01	0.18	5.6	287.6	282.0	51.1
42	Q930159	8.3	Strong	2.05	1.66	138.3	0.37	0.03	0.34	10.6	139.1	128.5	13.1
43	Q930160	9.3	Moderate	0.84	0.26	21.7	0.33	<0.01	0.33	10.3	29.5	19.2	2.9
44	Q930161	9.0	Moderate	2.31	0.98	81.7	0.65	0.01	0.64	20.0	97.0	77.0	4.9
45	Q930162	8.4	Strong	1.94	1.59	132.5	0.74	0.04	0.70	21.9	145.2	123.3	6.6
46	Q930163	8.2	Strong	2.09	1.81	150.8	0.24	0.04	0.20	6.3	159.2	153.0	25.5
47	Q930164	9.2	Strong	4.54	3.86	321.7	0.05	0.02	0.03	0.9	304.8	303.9	325.1
48	Q930165	8.9	Strong	1.77	1.57	130.8	0.71	<0.01	0.71	22.2	131.1	108.9	5.9
49	Q930166	9.1	Strong	1.02	0.88	73.3	0.18	<0.01	0.18	5.6	63.9	58.3	11.4
50	Q930167	8.5	Moderate	1.53	0.88	73.3	0.61	0.02	0.59	18.4	78.5	60.1	4.3
51	Q930168	8.8	Strong	3.19	2.73	227.5	0.03	0.01	0.02	0.6	208.7	208.1	333.9
52	Q930169	9.1	Strong	3.6	3.05	254.2	0.05	<0.01	0.05	1.6	234.5	232.9	150.1
53	Q930170	8.0	Strong	0.64	0.49	40.8	0.36	0.11	0.25	7.8	57.3	49.5	7.3
54	Q930171	8.3	Strong	1.13	0.28	23.3	0.10	0.03	0.07	2.2	38.1	35.9	17.4
55	Q930172	8.8	Strong	2.91	2.46	205.0	0.28	0.02	0.26	8.1	200.7	192.6	24.7
56	Q930173	7.7	None	0.53	0.09	7.5	0.40	0.04	0.36	11.3	3.8	-7.5	0.3
57	Q930174	8.4	Strong	5.30	4.64	386.7	0.46	0.02	0.44	13.8	341.1	327.4	24.8
58	Q930175	8.8	Strong	2.59	2.18	181.7	0.01	<0.01	0.01	0.3	177.5	177.2	568.0
59	Q930176	7.9	Slight	1.41	0.03	2.5	0.09	0.02	0.07	2.2	11.4	9.2	5.2
60	Q930114	9.0	Strong	0.3	0.24	20.0	0.70	<0.01	0.70	21.9	21.0	-0.9	1.0
61	Q930115	9.8	Strong	0.19	0.13	10.8	1.09	<0.01	1.09	34.1	14.4	-19.7	0.4
62	Q930122	8.7	Strong	1.15	0.97	80.8	0.82	<0.01	0.82	25.6	88.1	62.5	3.4
63	Q930136	9.7	Slight	0.09	0.05	4.2	0.80	<0.01	0.80	25.0	6.1	-18.9	0.2
64	Q930138	9.5	Strong	0.36	0.26	21.7	0.81	<0.01	0.81	25.3	26.5	1.2	1.0
65	Q930146	9.6	Strong	0.5	0.39	32.5	0.63	<0.01	0.63	19.7	38.1	18.4	1.9
66	Q930116	9.5	Strong	0.8	0.66	55.0	0.09	<0.01	0.09	2.8	57.6	54.8	20.5
67	Q930117	9.2	Strong	0.45	0.19	15.8	2.43	<0.01	2.43	75.9	30.1	-45.8	0.4
68	Q930119	9.3	Strong	1.04	0.85	70.8	1.32	<0.01	1.32	41.3	72.7	31.5	1.8
69	Q930121	9.5	Strong	0.54	0.42	35.0	0.19	0.02	0.17	5.3	37.6	32.3	7.1
70	Q930124	9.6	Strong	0.99	0.70	58.3	0.38	<0.01	0.38	11.9	63.1	51.2	5.3
71	Q930125	9.6	Slight	0.15	0.11	9.2	0.60	<0.01	0.60	18.8	11.4	-7.4	0.6
72	Q930126	9.1	Slight	0.1	0.08	6.7	0.27	<0.01	0.27	8.4	9.1	0.7	1.1
73	Q930131	9.6	Moderate	0.41	0.29	24.2	0.82	<0.01	0.82	25.6	30.3	4.7	1.2
74	Q930139	9.2	Strong	1.09	0.92	76.7	1.01	<0.01	1.01	31.6	76.0	44.4	2.4
75	Q930140	9.7	Strong	0.93	0.76	63.3	1.03	<0.01	1.03	32.2	56.1	23.9	1.7
76	Q930142	9.5	Strong	0.77	0.51	42.5	0.22	<0.01	0.22	6.9	45.5	38.6	6.6
77	Q930177	9.2	Strong	2.54	2.52	210.0	0.03	<0.01	0.03	0.9	215.2	214.3	229.5
78	Q930178	10.0	Moderate	0.55	0.47	39.2	0.30	<0.01	0.30	9.4	37.1	27.7	4.0
79	Q930179	9.3	Strong	1.39	1.37	114.2	0.05	<0.01	0.05	1.6	115.9	114.3	74.2

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon	Total Inorganic C	$CaCO_3$ Equivalents[*1]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur[*2]	AP[*3]	Mod. ABA NP	NNP[*4]	NPR[*5]
	Units:	pH Units		wt.%	wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne			
	Reported Detection Limit:	*0.01*		*0.01*	*0.02*	*1.7*	*0.01*	*0.01*	*0.01*	*0.3*	*0.5*		
	QUALITY ASSURANCE / QUALITY CONTROL												
Replicates:													
1	Q930112				0.57	47.5							
1 R	Q930112 (Rep)				0.56	46.7							
2	Q930118			1.25			0.06						
2 R	Q930118 (Rep)			1.25			0.06						
4	Q930113			0.57	0.55	45.8					67.4		
4 R	Q930113 (Rep)			0.56	0.54	45.0					65.4		
7	Q930129										204.5		
7 R	Q930129 (Rep)										219.6		
10	Q930133	9.2	Strong					<0.01			93.2		
10 R	Q930133 (Rep)	9.2	Strong					0.01			93.9		
20	Q930101	9.0	Strong					0.02			198.2		
20 R	Q930101 (Rep)	9.1	Strong					0.02			197.7		
21	Q930102										281.3		
21 R	Q930102 (Rep)										265.2		
22	Q930103										291.4		
22 R	Q930103 (Rep)										299.5		
28	Q930109										286.1		
28 R	Q930109 (Rep)										287.1		
30	Q930111	8.2	Moderate					0.02			36.6		
30 R	Q930111 (Rep)	8.1	Moderate					0.02			36.1		
38	Q930155										258.0		
38 R	Q930155 (Rep)										250.6		
39	Q930156				6.84	570.0							
39 R	Q930156 (Rep)				6.82	568.3							
40	Q930157	7.3	Strong					0.22			82.8		
40 R	Q930157 (Rep)	7.4	Strong					0.23			82.3		
50	Q930167	8.5	Moderate					0.02			78.5		
50 R	Q930167 (Rep)	8.5	Moderate					0.03			77.8		
57	Q930174			5.30			0.46						
57 R	Q930174 (Rep)			5.28			0.44						
60	Q930114	9.0	Strong					<0.01			21.0		
60 R	Q930114 (Rep)	9.0	Strong					<0.01			20.5		
70	Q930124	9.6	Strong					<0.01			63.1		
70 R	Q930124 (Rep)	9.5	Strong					<0.01			62.4		
74	Q930139				0.92	76.7							
74 R	Q930139 (Rep)				0.87	72.5							
76	Q930142			0.77			0.22						
76 R	Q930142 (Rep)			0.78			0.23						
Certified Reference Material (CRM) Analysis:													
Certified Reference Material		KZK-1		1) OREAS 24b 2) OREAS 504	SY-4		1) OREAS 24b 2) OREAS 504	RTS-3a			1) KZK-1 (Slight) 2) KZK-1 (Moderate)		
CRM True Value		**8.80**		**1) 0.189 2) 0.47**	**0.96**		**1) 0.190 2) 1.30**	**1.10**			**1) 58.9 2) 61.6**		
Reference Material Results		8.81 / 8.84		1) 0.19 2) 0.49 / 0.46	0.92 / 0.93 / 0.92		1) 0.200 2) 1.37 / 1.36				1) 55.8 2) 60.0		
Tolerance (+/-) or Acceptance Range:		***0.09***		***1) 0.179 - 0.198 2) NR in COA***	***0.03***		***1) 0.179 - 0.201 2) NR in COA***	***0.20***			***1) 1.1 2) 3.4***		
Method Blank Analysis:													
Method Blank Results				*<0.01 / <0.01 / <0.01*	*<0.02 / <0.02 / <0.02*		*<0.01 / <0.01 / <0.01*						
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*LECO*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*ARD-013 (HCl Leach)*	*Calc.*	*Calc.*	*ARD-005*	*Calc.*	*Calc.*

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon	Total Inorganic C	$CaCO_3$ Equivalents[*1]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur[*2]	AP[*3]	Mod. ABA NP	NNP[*4]	NPR[*5]
	Units:	pH Units		wt.%	wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne			
	Reported Detection Limit:	0.01		0.01	0.02	1.7	0.01	0.01	0.01	0.3	0.5		

NOTES:

Date of Analysis (24h): 1-40: July 11/12, 2016; 41-79: July 12/13, 2016.

pH of DI water (pH Units): 5.69; 5.72.

EC of DI water (µS/cm): 0.29; 0.31.

For STD SY-4, the TIC results are evaluated against the COA CO2 (3.5%) value calculated as carbon - i.e. 0.96%. The COA 95% Confidence Interval then calculates to 0.03%.

METHODS:

Total sulphur by LECO, total inorganic carbon by HCl leach followed by Leco analysis. Job No: MA0124-JUN16.

ABBREVIATIONS:

R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)

D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request.

NP = Neutralization Potential

Calc. = Calculation

NR = Not Reported

COA = Certificate Of Analysis

IND = Indeterminate

CALCULATIONS:

*1 $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)

*2 Sulphide-Sulphur: Total-sulphur - sulphate-sulphur

*3 AP (Acid Potential): Sulphide-sulphur x 31.25

*4 NNP (Net Neutralization Potential): NP - AP

*5 NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:

Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)

ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).

Modified ABA (Sobek) NP: MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).

Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

PAGE: 4a of 4
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Analyte	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Method	IMS-130																									
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
		Sample Type																										
1	Q930112	Rock Pulp	0.05	0.30	<0.1	<0.005	<10	75	0.21	0.14	1.61	0.05	37.14	3.6	47	0.13	4.5	0.84	1.14	0.10	0.11	<0.01	0.006	0.30	17.6	1.6	0.25	499
2	Q930118	Rock Pulp	<0.01	0.37	<0.1	<0.005	<10	91	0.30	0.04	2.81	0.17	65.64	3.7	41	0.91	5.4	1.58	1.34	0.14	0.06	<0.01	0.008	0.36	31.3	2.6	0.18	953
3	Q930141	Rock Pulp	0.01	0.72	<0.1	<0.005	<10	123	0.35	0.01	2.52	0.17	37.64	4.3	57	1.66	5.5	2.38	2.51	0.10	0.09	<0.01	0.011	0.66	17.8	7.3	0.37	1011
4	Q930113	Rock Pulp	0.24	3.14	300.9	<0.005	<10	258	0.37	0.03	2.07	0.23	3.6	36.7	238	1.19	56.4	4.87	5.20	0.16	0.02	<0.01	0.006	0.39	1.6	24.3	3.48	636
5	Q930127	Rock Pulp	2.24	4.37	787.7	<0.005	<10	1183	0.72	0.23	4.03	0.34	4.6	46.1	193	10.39	17.4	6.21	7.32	0.20	<0.02	<0.01	0.013	3.74	2.1	45.8	4.08	940
6	Q930128	Rock Pulp	0.55	3.18	91.1	<0.005	<10	881	0.42	0.04	3.55	0.27	4.51	42.9	265	1.62	48.5	4.84	7.02	0.18	0.03	0.03	0.012	0.57	2.0	26.8	3.86	758
7	Q930129	Rock Pulp	0.53	3.11	72.4	0.008	<10	1643	0.91	0.02	6.73	0.3	16.08	37.6	253	5.05	61.8	6.63	6.84	0.11	0.03	0.04	0.044	1.02	6.9	26.2	3.53	1225
8	Q930130	Rock Pulp	0.27	2.90	80.6	0.006	<10	784	0.48	<0.01	1.16	0.13	3.27	43.0	245	1.15	37.5	3.85	5.02	0.18	0.03	<0.01	<0.005	0.75	1.4	25.5	3.05	544
9	Q930132	Rock Pulp	0.18	3.54	75.3	<0.005	<10	726	0.86	<0.01	2.46	0.09	3.29	39.9	189	6.91	19.4	4.53	4.42	0.19	0.03	<0.01	0.006	2.71	1.4	42.3	3.56	655
10	Q930133	Rock Pulp	0.35	2.39	85.9	0.005	<10	154	0.21	0.02	3.69	0.43	2.95	34.6	258	0.47	33.8	3.95	4.30	0.12	<0.02	<0.01	<0.005	0.24	1.3	13.3	2.25	761
11	Q930134	Rock Pulp	2.07	0.25	17.1	0.013	<10	170	0.14	0.55	0.13	0.35	71.73	1.6	76	0.22	13.0	1.15	1.25	0.16	0.21	0.06	0.007	0.18	35.1	1.5	0.03	27
12	Q930135	Rock Pulp	0.47	4.10	75.0	0.006	<10	1700	0.90	0.03	4.70	0.59	6.89	40.8	285	2.56	42.3	6.94	8.51	0.20	0.03	0.36	0.015	0.60	3.0	32.4	3.94	1150
13	Q930137	Rock Pulp	0.40	4.45	59.8	<0.005	<10	1024	0.85	0.01	3.72	0.16	6.5	43.9	295	2.85	41.2	6.54	11.37	0.23	<0.02	<0.01	0.016	1.10	2.8	39.2	4.78	868
14	Q930143	Rock Pulp	0.28	0.26	4.6	<0.005	<10	330	0.12	0.18	1.35	0.06	79.48	1.6	74	0.33	3.2	0.47	1.37	0.15	0.20	0.03	<0.005	0.20	37.9	2.1	0.05	471
15	Q930144	Rock Pulp	3.61	0.22	266.9	0.013	<10	139	0.14	0.43	0.92	1.47	81.66	1.6	68	0.31	17.6	0.85	1.16	0.18	0.33	0.09	0.012	0.17	39.6	1.3	0.04	188
16	Q930145	Rock Pulp	0.38	3.60	42.9	<0.005	<10	1070	0.48	0.06	5.95	0.2	14.54	33.1	178	4.87	38.1	6.01	6.58	0.12	0.03	0.10	0.024	1.30	6.2	35.8	3.36	1182
17	Q930147	Rock Pulp	0.14	3.46	646.7	<0.005	<10	911	0.65	<0.01	3.38	0.19	2.97	40.0	228	4.59	48.5	5.46	4.72	0.18	<0.02	0.01	0.006	2.26	1.3	32.1	3.29	867
18	Q930120	Rock Pulp	0.08	0.46	0.9	<0.005	<10	141	0.35	0.29	1.56	0.15	104.82	4.0	53	0.99	4.1	1.61	1.90	0.24	0.10	<0.01	0.011	0.34	49.9	4.2	0.32	636
19	Q930123	Rock Pulp	1.20	0.15	76.8	<0.005	<10	51	0.08	0.78	0.24	25.87	8.26	1.0	108	0.09	44.0	2.94	0.53	0.09	0.10	1.37	0.103	0.12	3.9	0.6	0.1	121
20	Q930101	Rock Pulp	0.02	3.30	44.5	<0.005	<10	93	0.22	<0.01	7.02	0.39	16.53	40.1	146	0.14	10.6	5.82	6.64	0.10	<0.02	<0.01	0.013	0.18	7.0	21.7	2.95	991
21	Q930102	Rock Pulp	0.05	0.96	11.2	<0.005	<10	145	0.15	0.08	9.22	0.29	53.55	9.5	68	1.23	12.0	2.03	2.55	0.10	0.10	<0.01	0.008	0.26	26.9	6.0	0.92	529
22	Q930103	Rock Pulp	0.06	0.61	16.7	<0.005	<10	136	0.13	0.09	9.63	0.38	32.16	11.6	80	0.46	14.1	2.21	1.50	0.07	0.06	<0.01	0.006	0.18	17.5	3.7	1.23	771
23	Q930104	Rock Pulp	0.32	0.27	0.6	<0.005	<10	239	0.19	0.44	1.20	0.2	31.5	8.1	102	0.31	26.0	1.47	0.96	0.09	0.08	<0.01	<0.005	0.21	17.9	0.9	0.28	247
24	Q930105	Rock Pulp	0.02	0.72	0.5	<0.005	<10	132	0.34	0.03	2.63	0.16	149.38	5.3	60	2.15	8.3	2.88	3.26	0.26	0.06	<0.01	0.015	0.57	72.9	5.6	0.58	867
25	Q930106	Rock Pulp	0.03	0.75	3.5	<0.005	<10	125	0.13	0.04	7.80	0.37	50.47	8.8	50	0.29	14.5	2.58	1.90	0.10	0.08	<0.01	0.006	0.22	26.5	4.6	1.44	640
26	Q930107	Rock Pulp	0.23	0.47	0.7	<0.005	<10	144	0.18	0.03	5.33	0.16	81.23	8.7	61	0.18	30.6	2.76	1.47	0.15	0.06	<0.01	0.006	0.29	41.2	2.4	1.4	634
27	Q930108	Rock Pulp	0.39	0.24	0.3	<0.005	<10	241	0.16	0.37	1.02	0.59	21.31	4.8	97	0.34	13.3	1.11	0.79	0.07	0.07	<0.01	0.006	0.17	12.4	0.7	0.2	162
28	Q930109	Rock Pulp	0.03	0.85	6.7	<0.005	<10	166	0.22	0.10	9.52	0.45	31.19	6.2	44	0.47	1.8	2.02	2.19	0.07	0.06	<0.01	0.006	0.39	16.1	5.4	1.11	1479
29	Q930110	Rock Pulp	0.04	1.13	14.2	<0.005	<10	141	0.26	0.02	2.37	0.39	67.88	17.5	40	0.29	32.1	2.29	3.06	0.14	0.19	<0.01	0.009	0.31	37.0	7.8	1.14	513
30	Q930111	Rock Pulp	0.18	0.26	50.8	<0.005	<10	152	0.21	0.22	1.10	0.24	32.78	6.5	111	0.32	15.6	1.30	0.97	0.09	0.09	<0.01	0.005	0.20	18.6	0.9	0.29	244
31	Q930148	Rock Pulp	0.06	1.42	1.3	<0.005	<10	174	0.19	0.16	2.69	0.23	56.85	19.0	53	0.57	76.1	3.23	4.01	0.15	0.21	<0.01	0.007	0.54	31.9	8.4	1.09	708
32	Q930149	Rock Pulp	0.06	1.62	2.7	<0.005	<10	138	0.19	0.05	0.44	0.04	62.6	16.0	41	0.12	46.5	3.32	4.66	0.17	0.08	<0.01	<0.005	0.21	34.5	11.9	1.3	363
33	Q930150	Rock Pulp	0.07	1.06	2.2	<0.005	<10	121	0.17	0.10	0.99	0.06	63.3	13.4	49	0.75	36.2	3.29	3.37	0.16	0.05	<0.01	0.006	0.20	33.5	6.8	1.08	329
34	Q930151	Rock Pulp	0.09	1.95	0.5	<0.005	<10	195	0.26	0.06	0.88	0.1	61.52	13.2	54	0.12	141.5	4.49	5.44	0.17	0.09	<0.01	0.006	0.23	33.8	13.3	1.44	438
35	Q930152	Rock Pulp	0.17	1.88	1.6	<0.005	<10	110	0.17	0.24	4.40	0.45	62.67	23.1	56	0.29	114.9	4.17	5.47	0.14	0.07	<0.01	0.011	0.19	34.0	12.3	1.44	1196
36	Q930153	Rock Pulp	0.09	1.42	5.1	<0.005	<10	168	0.28	0.03	2.45	0.11	71.38	10.8	47	0.46	22.2	3.18	3.69	0.14	0.06	<0.01	0.008	0.24	37.6	9.1	1.71	474
37	Q930154	Rock Pulp	0.16	0.27	0.5	<0.005	<10	182	0.16	0.19	4.83	0.37	56.51	5.0	50	0.19	22.4	2.06	1.02	0.11	0.07	<0.01	0.006	0.23	28.8	1.0	0.95	843
38	Q930155	Rock Pulp	0.09	0.78	8.8	<0.005	<10	260	0.24	0.09	8.35	0.3	53.29	9.7	60	0.85	15.4	2.75	2.38	0.10	0.08	<0.01	0.011	0.20	25.5	4.4	1.12	739
39	Q930156	Rock Pulp	0.07	0.23	1.6	<0.005	<10	268	0.09	0.06	18.32	0.55	19.76	4.5	39	0.24	12.5	1.86	0.65	0.05	0.04	<0.01	0.006	0.11	10.0	1.0	0.8	1172
40	Q930157	Rock Pulp	2.78	2.63	1.1	<0.005	<10	125	0.18	3.78	3.12	36.58	75.34	37.4	66	0.38	689.1	8.37	7.02	0.20	0.05	0.12	0.219	0.13	37.5	14.8	2.3	1074
41	Q930158	Rock Pulp	0.39	0.35	65.1	<0.005	<10	201	0.19	0.67	8.18	0.32	74.89	22.4	29	0.14	29.9	2.37	1.14	0.12	0.07	<0.01	0.006	0.27	40.0	1.6	1.58	911
42	Q930159	Rock Pulp	0.54	1.77	13.4	<0.005	12	155	0.25	0.97	4.93	0.32	54.3	21.1	76	0.51	66.7	3.94	4.55	0.12	0.10	<0.01	0.012	0.20	26.6	10.5	1.48	749
43	Q930160	Rock Pulp	0.10	0.52	4.1	<0.005	<10	185	0.24	0.03	0.86	0.06	40.39	11.7	68	0.27	29.9	2.13	1.65	0.11	0.08	<0.01	0.006	0.26	19.1	2.9	0.45	172
44	Q930161	Rock Pulp	0.12	0.31	1.2	<0.005	10	135	0.27	0.05	2.74	1.61	74.85	13.1	70	0.28	38.1	2.83	1.35	0.15	0.09	<0.01	0.014	0.28	36.6	1.1	0.71	620
45	Q930162	Rock Pulp	0.14	3.17	0.4	<0.005	<10	69	0.19	0.02	5.29	0.22	59.45	31.5	54	1.12	22.1	8.46	13.53	0.18	0.03	<0.01	0.057	0.12	25.4	18.7	2	899
46	Q930163	Rock Pulp	0.15	3.39	0.5	<0.005	16	98	0.44	0.02	5.03	0.36	118.2	24.9	27	0.41	29.1	10.10	11.66	0.30	0.03	0.01	0.098	0.06	50.1	26.6	1.98	855
47	Q930164	Rock Pulp	0.09	0.57	9.3	<0.005	11	229	0.17	0.11	9.88	0.27	58.46	7.0	38	0.56	8.4	1.92	1.62	0.09	0.06	<0.01	0.006	0.24	28.9	3.2	1.28	618
48	Q930165	Rock Pulp	0.11	0.32	8.3	<0.005	<10	63	0.18	0.16	4.24	0.11	20.73	2.1	95	0.12	3.1	1.38	0.84	0.05	0.22	0.01	0.009	0.20	9.2	2.2	0.5	1341
49	Q930166	Rock Pulp	0.12	0.71	1.2	<0.005	<10	85	0.28	0.21	2.16	0.13	47.39	3.4	66	0.98	7.0	2.05	1.89	0.10	0.09	<0.01	0.009	0.33	22.0	4.7	0.47	776
50	Q930167	Rock Pulp	0.61	0.50	0.3	<0.005	<10	231	0.23	0.42	1.97	1	51.01	7.3	61	0.42	26.5	2.48	1.19	0.11	0.12	0.01	0.009	0.20	25.2	3.9	0.74	427
51	Q930168	Rock Pulp	0.08	0.55	3.0	<0.005	<10	108	0.19	0.07	6.50	0.27	58.31	8.8	44	0.29	12.5	1.94	1.50	0.10	0.16	<0.01	0.006	0.26	30.0	3.3	1.08	781
52	Q930169	Rock Pulp	0.06	1.19	6.0	<0.005	<10	99	0.19	0.05	8.21	0.23	59.11	10.8	34	0.64	8.4	2.80	3.05	0.11	0.12	<0.01	0.007	0.27	31.0	7.3	1.35	585
53	Q930170	Rock Pulp	0.65	1.47	<0.1	<0.005	13	412	0.22	0.93	2.16	0.43	46.98	16.2	79	1.79	271.1	3.80	3.86	0.17	0.06	<0.01	0.016	0.90	23.1	8.4	0.94	722
54	Q930171	Rock Pulp	0.18	1.11	1.7	<0.005	<10	204	0.19	0.06	1.28	0.33	44.58	11.6	120	0.36	142.3	2.33	2.91	0.12	0.12	<0.01	0.006	0.30	24.5	6.3	0.74	371
55	Q930172	Rock Pulp	0.13	1.08	0.4	<0.005	<10	93	0.17	0.11	6.41	0.22	54.07	9.5	37	0.16	48.5	2.79	2.73	0.12	0.06	<0.01	0.006	0.22	27.5	6.2	1.35	636
56	Q930173	Rock Pulp	0.20	1.85	7.1	<0.005	<10	112	0.24	0.05	0.13	0.02	124.99	20.4	25	0.20	60.9	4.72	5.81	0.28	0.12	<0.01	0.010	0.23	56.6	11.1	0.9	291
57	Q930174	Rock Pulp	0.19	0.20	<0.1	<0.005	12	120	0.12	0.03	12.03	0.3	34.23	5.7	36	0.14	9.6	1.90	0.60	0.09	0.03	<0.01	<0.005	0.16	17.0	0.9	1.09	549
58	Q930175	Rock Pulp	0.34	0.74	1.2	<0.005	<10	104	0.16	0.67	5.76	0.31	48.57	10.5	38	0.47	80.1	2.66	1.81	0.10	0.15	<0.01	0.006	0.19	25.7	4.4	0.78	1048
59	Q930176	Rock Pulp	0.17	0.31	3.0	<0.005	14	253	0.24	0.11	0.42	0.68	40.88	8.0	72	0.40	30.9	1.70	1.14	0.12	0.14	<0.01	0.008	0.21	22.2	1.3	0.12	139
60	Q930114	Rock Pulp	0.55	0.25	242.8	0.019	<10	120	0.14	0.53	0.85	0.14	71.88	2.6	80	0.17	48.4	0.72	1.00	0.12	0.05	0.13	<0.005	0.17	33.1	0.9	0.04	185

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Analyte / Sample Type	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Method	IMS-130																									
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
61	Q930115	Rock Pulp	0.20	0.23	68.2	<0.005	12	44	0.15	0.46	0.52	0.03	82.53	1.5	52	0.08	6.7	0.95	1.23	0.16	0.09	0.05	<0.005	0.19	38.7	1.4	0.02	115
62	Q930122	Rock Pulp	0.61	0.22	13.8	0.006	<10	170	0.15	0.34	3.26	0.19	89.48	2.0	56	0.25	10.1	1.01	1.14	0.15	0.18	0.03	<0.005	0.18	42.6	1.6	0.05	553
63	Q930136	Rock Pulp	0.67	0.25	50.8	0.008	<10	130	0.13	1.54	0.26	1.25	96.4	2.0	71	0.09	78.5	0.76	1.42	0.18	0.09	0.07	0.023	0.18	44.2	1.3	0.03	56
64	Q930138	Rock Pulp	0.28	0.23	13.1	<0.005	<10	81	0.14	0.52	0.95	0.47	49.52	1.3	54	0.08	43.8	0.79	0.92	0.09	0.12	0.03	0.007	0.20	23.1	0.9	0.02	214
65	Q930146	Rock Pulp	1.65	0.22	338.3	0.026	<10	130	0.12	1.81	1.41	0.64	89.73	1.3	57	0.07	38.8	0.60	1.20	0.14	0.07	0.05	0.011	0.17	41.3	0.7	0.02	238
66	Q930116	Rock Pulp	0.06	0.38	1.5	<0.005	<10	86	0.27	0.05	2.08	0.1	49.57	3.6	61	0.41	6.4	0.82	1.38	0.10	0.08	<0.01	0.007	0.32	22.8	3.4	0.13	719
67	Q930117	Rock Pulp	0.36	0.28	5.8	<0.005	<10	61	0.24	1.19	1.12	0.15	19.78	6.2	45	0.27	12.0	2.64	0.91	0.08	0.08	0.01	0.005	0.27	8.4	2.4	0.07	337
68	Q930119	Rock Pulp	0.11	0.31	3.4	<0.005	<10	101	0.15	0.39	2.14	0.18	33.53	5.0	49	0.35	9.0	1.96	1.04	0.08	0.12	<0.01	0.009	0.22	15.5	1.4	0.43	551
69	Q930121	Rock Pulp	0.11	0.31	0.2	<0.005	<10	1704	0.26	0.13	1.34	0.06	46.71	2.0	54	0.72	11.8	0.66	1.04	0.09	0.07	<0.01	<0.005	0.32	21.5	2.4	0.09	339
70	Q930124	Rock Pulp	0.11	0.44	0.2	<0.005	<10	92	0.28	0.24	1.98	0.05	45.68	3.4	57	1.23	5.1	1.76	1.60	0.10	0.15	<0.01	0.011	0.36	21.0	3.2	0.4	692
71	Q930125	Rock Pulp	0.11	0.18	2.2	<0.005	<10	120	0.23	0.27	0.44	0.02	54.19	1.5	77	0.22	3.3	0.79	1.10	0.12	0.30	<0.01	0.005	0.19	24.8	1.6	0.04	183
72	Q930126	Rock Pulp	0.09	0.20	1.7	<0.005	<10	114	0.22	0.25	0.31	0.05	62.72	1.2	75	0.43	2.7	0.42	1.05	0.12	0.17	<0.01	<0.005	0.21	27.8	1.8	0.03	87
73	Q930131	Rock Pulp	0.24	0.36	2.6	<0.005	<10	63	0.25	0.36	1.12	0.75	36.68	4.5	61	0.52	6.6	1.52	1.26	0.09	0.16	<0.01	0.008	0.31	16.7	2.4	0.14	525
74	Q930139	Rock Pulp	0.50	0.37	7.2	<0.005	<10	85	0.18	1.38	2.38	0.1	54.56	8.9	62	0.41	62.2	1.91	1.28	0.10	0.17	<0.01	0.011	0.21	25.2	1.7	0.57	520
75	Q930140	Rock Pulp	0.08	0.32	3.4	<0.005	<10	76	0.20	0.31	1.72	0.08	29.14	4.8	57	0.28	7.4	2.23	0.95	0.08	0.13	<0.01	0.008	0.29	13.1	1.7	0.42	811
76	Q930142	Rock Pulp	0.21	0.90	0.2	<0.005	<10	88	0.34	0.56	1.58	0.14	79.51	4.8	70	0.85	6.4	2.77	2.94	0.15	0.14	<0.01	0.016	0.40	37.0	7.4	0.59	922
77	Q930177	Rock Pulp	1.95	3.41	6.9	0.005	<10	1842	0.25	0.04	7.48	0.28	16.45	35.1	163	22.05	49.0	6.10	7.30	0.18	<0.02	0.03	0.027	2.81	7.0	42.7	3.31	1156
78	Q930178	Rock Pulp	0.07	0.32	0.7	<0.005	<10	81	0.20	0.19	1.25	0.07	40.86	4.6	48	0.18	9.7	1.01	1.09	0.08	0.13	<0.01	0.007	0.28	18.5	1.2	0.22	334
79	Q930179	Rock Pulp	0.94	3.48	53.7	0.01	<10	4076	0.39	0.05	4.61	0.38	5.74	38.9	165	11.22	30.5	5.10	7.03	0.18	0.03	0.04	0.013	2.65	2.5	37.1	3.79	883
QUALITY ASSURANCE / QUALITY CONTROL																												
Pulp Replicates:																												
1	Q930112	Rock Pulp	0.05	0.30	<0.1	<0.005	<10	75	0.21	0.14	1.61	0.05	37.14	3.6	47	0.13	4.5	0.84	1.14	0.10	0.11	<0.01	0.006	0.30	17.6	1.6	0.25	499
1 R	Q930112	Rock Pulp - Rep	0.05	0.31	0.2	<0.005	<10	75	0.22	0.14	1.59	0.05	37.53	3.9	48	0.13	4.6	0.84	1.13	0.09	0.10	<0.01	0.007	0.30	17.8	1.5	0.25	499
36	Q930153	Rock Pulp	0.09	1.42	5.1	<0.005	<10	168	0.28	0.03	2.45	0.11	71.38	10.8	47	0.46	22.2	3.18	3.69	0.14	0.06	<0.01	0.008	0.24	37.6	9.1	1.71	474
36 R	Q930153	Rock Pulp - Rep	0.09	1.42	5.1	<0.005	<10	169	0.27	0.03	2.42	0.10	69.65	10.3	47	0.46	21.5	3.15	3.61	0.14	0.06	<0.01	0.007	0.25	36.6	8.7	1.69	470
74	Q930139	Rock Pulp	0.5	0.37	7.2	<0.005	<10	85	0.18	1.38	2.38	0.10	54.56	8.9	62	0.41	62.2	1.91	1.28	0.10	0.17	<0.01	0.011	0.21	25.2	1.7	0.57	520
74 R	Q930139	Rock Pulp - Rep	0.5	0.39	7.7	<0.005	<10	89	0.18	1.44	2.60	0.11	53.31	8.8	66	0.38	63.3	2.06	1.22	0.10	0.16	<0.01	0.011	0.22	24.4	1.7	0.6	551
Certified Reference Material - 1																												
STD OREAS 24b - 1			0.060	3.18	7.80	<0.005	<10	144	1.69	0.70	0.46	0.060	63.3	15.9	103	9.25	38.2	3.89	11.08	0.21	0.56	<0.01	0.051	1.20	31.1	48.6	1.37	347
STD OREAS 24b - 2			0.090	3.13	7.60	<0.005	10	141	1.69	0.73	0.45	0.050	64.4	16.1	105	9.20	36.3	3.86	10.83	0.23	0.55	<0.01	0.048	1.19	30.8	47.1	1.35	342
True Value STD OREAS 24b			**0.058**	**3.15**	**7.96**	**0.002**	**6.23**	**146**	**1.65**	**0.73**	**0.461**	**0.046**	**61.0**	**15.7**	**106**	**9.15**	**36.4**	**3.93**	**10.80**	**0.26**	**0.52**	**<0.01**	**0.048**	**1.17**	**29.2**	**45.6**	**1.36**	**350**
% Difference - 1			3.4	1.0	-2.0			-1.4	2.4	-4.1	-0.2	30.4	3.7	1.3	-2.8	1.1	4.9	-1.0	2.6	-19.2	7.7		6.2	2.6	6.5	6.6	0.7	-0.9
% Difference - 2			55.2	-0.6	-4.5			-3.4	2.4	0.0	-2.4	8.7	5.6	2.5	-0.9	0.5	-0.3	-1.8	0.3	-11.5	5.8		0.0	1.7	5.5	3.3	-0.7	-2.3
Tolerance (%)			***NR***	***0.2***	***0.95***	***NR***	***NR***	***12***	***NR***	***0.13***	***0.030***	***NR***	***NR***	***1.9***	***9***	***0.56***	***3.3***	***0.21***	***1.1***	***NR***	***NR***	***NR***	***NR***	***0.07***	***NR***	***3.5***	***0.07***	***20***
Reference Materials - 2																												
STD GBM908-10			3.12		54.2									13.6			3682											
True Value STD GBM908-10			**2.90**	**N/A**	**56.0**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**23.0**	**N/A**	**N/A**	**3601**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
% Difference			7.6		-3.2									-40.9			2.3											
Tolerance (%)			***0.06***		***1.0***									***1.1***			***21.2***											
Method Blank:																												
Method Blank - 1			<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5
Method Blank - 2			<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5
Method Blank - 3			<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5

Notes:

Job No: MA0124-JUN16.

Analytical Methods (IMS-130):

A 0.5 g of pulp sample is leached in hot (95°C) 3:1 aqua regia digestion followed by ICP Mass Spec analysis.
Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5 g).
Refractory and graphitic samples can limit Au solubility.

Abbreviations:

R / Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)
D / Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a second split of the original client sample received)
MDL = Measurable Detection Limit
IND = Indeterminate

On Cerfified Reference Material and Tolerance:

Any one element in a run reporting outside tolerance limits does not constitute failure of the standard.
As per Certificate of Analysis (COA): All values indicated are Certified. Values indicated in green are indicative only.
NR = Not Reported (in the Certificate Of Analysis).

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Method / Analyte / Unit / MDL / Sample Type	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
1	Q930112	Rock Pulp	2.04	0.01	0.08	4.9	828	6.5	10.7	<0.001	0.18	0.12	0.9	<0.2	<0.2	22.9	<0.01	0.01	9.76	<0.005	0.08	1.18	2	0.10	8.68	9	4.6
2	Q930118	Rock Pulp	2.07	0.01	0.07	5.5	786	5.0	15.9	<0.001	0.09	<0.05	1.1	0.4	0.2	65.1	<0.01	0.02	17.33	<0.005	0.1	1.27	3	<0.05	12.59	34	2.9
3	Q930141	Rock Pulp	2.30	0.02	0.33	5.6	673	3.1	35.1	<0.001	0.38	0.06	1.4	0.3	0.4	56.3	<0.01	0.02	12.95	0.037	0.27	1.24	4	0.08	10.99	33	3.9
4	Q930113	Rock Pulp	0.46	0.03	0.13	70.9	551	27.2	18.0	<0.001	0.10	2.02	3	0.3	<0.2	27.8	<0.01	0.02	0.54	0.2	2.45	<0.05	56	0.08	3.08	98	0.6
5	Q930127	Rock Pulp	0.76	0.12	0.09	82.5	616	219.3	188.3	0.001	0.09	1.02	6.4	0.8	0.2	41.9	<0.01	0.02	0.47	0.387	14.95	0.58	115	1.07	4.83	179	<0.5
6	Q930128	Rock Pulp	0.54	0.08	0.16	87.6	565	30.5	23.9	<0.001	0.02	1.88	6.6	0.3	0.2	77.1	<0.01	0.01	0.33	0.259	2.51	<0.05	86	0.19	4.69	87	0.7
7	Q930129	Rock Pulp	0.59	0.12	0.05	75.5	527	18.4	42.6	0.002	0.07	7.04	24.9	0.5	0.3	271.8	<0.01	0.02	0.94	0.126	2.85	0.11	107	0.06	17.50	91	<0.5
8	Q930130	Rock Pulp	0.45	0.07	0.15	80.0	595	4.1	32.6	<0.001	0.01	0.77	2.4	0.2	<0.2	18.9	<0.01	0.01	<0.2	0.258	2.81	<0.05	66	0.13	2.95	126	0.7
9	Q930132	Rock Pulp	0.55	0.09	0.09	71.8	595	1.9	118.5	<0.001	0.02	1.11	4.7	0.3	<0.2	32.5	<0.01	0.01	<0.2	0.369	4.59	0.05	78	0.23	3.20	88	0.8
10	Q930133	Rock Pulp	0.64	0.03	0.15	46.8	518	16.1	9.5	<0.001	0.02	0.88	2.6	0.3	<0.2	37.2	<0.01	0.01	<0.2	0.251	0.71	<0.05	47	0.12	2.90	117	<0.5
11	Q930134	Rock Pulp	3.11	0.02	0.11	2.6	83	106.3	5.9	<0.001	1.25	6.29	0.4	1.1	0.4	6.9	<0.01	<0.01	28.93	<0.005	0.76	3.81	<1	0.07	10.72	48	7.3
12	Q930135	Rock Pulp	0.63	0.13	0.08	93.2	580	25.3	30.3	0.001	0.08	1.14	5.3	1.4	0.2	78	<0.01	0.01	1.12	0.192	4.24	0.99	100	0.06	5.25	171	0.7
13	Q930137	Rock Pulp	0.48	0.09	0.08	88.4	493	7.4	53.6	0.001	0.03	0.60	12.2	0.6	0.2	56.7	<0.01	0.01	0.5	0.214	5.71	0.07	136	0.05	7.24	91	0.5
14	Q930143	Rock Pulp	3.55	0.03	0.09	2.9	136	11.6	7.3	<0.001	0.23	0.59	0.5	<0.2	0.3	51.1	<0.01	<0.01	21.53	<0.005	1.59	1.57	1	0.10	7.42	17	7.4
15	Q930144	Rock Pulp	2.49	0.02	0.06	2.5	68	236.6	6.0	0.001	0.89	15.10	0.5	21.1	0.3	16.2	<0.01	<0.01	28.72	<0.005	0.83	3.01	<1	0.06	11.35	196	13.8
16	Q930145	Rock Pulp	0.57	0.09	<0.05	79.4	556	26.9	63.3	0.001	0.16	2.70	7.6	0.9	0.2	112.6	<0.01	0.01	1.57	0.113	6.91	4.55	77	<0.05	14.07	281	1.1
17	Q930147	Rock Pulp	0.56	0.08	0.09	74.8	578	6.0	99.2	<0.001	0.13	1.09	3.8	0.3	<0.2	37.6	<0.01	0.01	0.4	0.318	4.08	<0.05	71	0.25	2.64	117	0.5
18	Q930120	Rock Pulp	2.26	0.02	0.08	5.3	866	28.4	13.0	<0.001	0.22	0.26	1.5	0.3	0.2	43.9	<0.01	<0.01	20.67	<0.005	0.14	0.83	3	<0.05	16.68	44	5.0
19	Q930123	Rock Pulp	12.90	<0.01	0.11	31.5	21	215.8	4.5	0.024	3.43	14.92	0.5	16.6	0.3	4.1	<0.01	0.01	5.35	<0.005	0.23	2.17	22	0.29	1.00	2938	3.4
20	Q930101	Rock Pulp	0.88	0.02	<0.05	67.8	572	10.2	6.5	0.002	0.14	0.68	4.7	0.9	<0.2	207.4	<0.01	0.02	0.99	0.014	0.05	0.6	56	0.09	19.69	233	1.0
21	Q930102	Rock Pulp	1.01	0.02	<0.05	21.4	336	16.0	13.9	0.001	0.15	0.14	1.5	0.7	<0.2	291.8	<0.01	0.02	11.24	0.009	0.1	0.57	8	0.08	17.78	41	4.7
22	Q930103	Rock Pulp	1.15	0.02	<0.05	31.2	422	16.2	7.0	0.002	0.13	0.15	1.3	<0.2	<0.2	277.3	<0.01	0.02	6.8	<0.005	0.06	0.41	5	<0.05	19.27	42	2.6
23	Q930104	Rock Pulp	13.64	0.02	0.05	72.7	808	43.7	7.3	0.023	0.71	1.01	1	2.7	<0.2	28	<0.01	0.03	6.82	<0.005	0.09	6.94	29	0.12	6.56	44	3.4
24	Q930105	Rock Pulp	2.83	0.02	0.29	7.6	806	3.7	28.9	<0.001	0.24	0.11	1.6	<0.2	0.4	57.8	<0.01	0.02	27.18	0.016	0.22	1.11	4	0.06	11.54	41	2.7
25	Q930106	Rock Pulp	0.60	0.02	0.05	21.0	449	10.9	7.8	<0.001	0.13	<0.05	1.2	0.2	<0.2	207.7	<0.01	0.02	11.21	0.005	0.06	0.84	6	<0.05	14.44	58	3.5
26	Q930107	Rock Pulp	0.62	0.02	<0.05	26.8	763	8.5	9.1	<0.001	0.31	0.05	1.3	0.5	<0.2	135.2	<0.01	0.02	16.21	<0.005	0.07	0.84	4	<0.05	8.52	46	2.9
27	Q930108	Rock Pulp	14.31	0.02	<0.05	57.2	684	53.8	6.0	0.018	0.42	0.32	0.8	1.6	<0.2	25.4	<0.01	0.02	4.55	<0.005	0.07	4.33	28	0.05	5.45	113	3.1
28	Q930109	Rock Pulp	0.80	0.02	0.07	13.5	430	19.2	21.1	0.002	<0.01	0.10	1.3	0.2	<0.2	324.7	<0.01	0.03	6.98	0.024	0.16	0.56	8	<0.05	22.36	34	2.2
29	Q930110	Rock Pulp	0.63	0.02	<0.05	30.6	488	4.8	13.7	0.001	0.06	0.10	1.2	0.4	<0.2	71.1	<0.01	0.01	14.43	0.009	0.11	0.56	8	<0.05	5.68	144	8.5
30	Q930111	Rock Pulp	11.39	0.02	<0.05	50.7	839	34.3	6.9	0.026	0.56	0.34	0.9	3.6	<0.2	26.1	<0.01	<0.01	6.23	<0.005	0.07	4.34	29	0.13	6.20	39	3.6
31	Q930148	Rock Pulp	6.20	0.03	<0.05	43.4	1000	3.7	30.0	0.008	0.93	0.10	1.5	2.2	<0.2	84.6	<0.01	0.02	12.45	0.042	0.22	3.89	24	0.06	16.89	66	8.3
32	Q930149	Rock Pulp	0.69	0.02	<0.05	37.8	462	1.0	7.0	0.002	0.31	<0.05	1.2	0.7	<0.2	18.8	<0.01	0.01	12.54	<0.005	0.04	1.2	12	<0.05	7.13	110	3.2
33	Q930150	Rock Pulp	0.45	0.02	<0.05	28.9	373	2.7	8.0	<0.001	0.20	<0.05	1.3	0.6	<0.2	44.1	<0.01	0.01	14.05	<0.005	0.05	1.29	9	<0.05	9.79	101	2.2
34	Q930151	Rock Pulp	6.70	0.02	<0.05	26.7	633	1.9	7.6	0.009	0.32	0.05	1.5	0.4	<0.2	27.2	<0.01	0.01	13.31	<0.005	0.06	2.05	30	<0.05	9.49	172	3.8
35	Q930152	Rock Pulp	0.57	0.02	<0.05	38.6	507	8.4	7.0	0.002	0.60	<0.05	1.6	0.5	<0.2	120.6	<0.01	0.02	12.7	0.009	0.05	1.04	16	<0.05	21.18	72	3.1
36	Q930153	Rock Pulp	0.61	0.02	<0.05	26.4	356	3.9	9.3	0.001	0.29	0.22	1.4	1	<0.2	81.5	<0.01	0.01	13.64	<0.005	0.08	0.69	8	0.08	7.33	104	3.1
37	Q930154	Rock Pulp	1.02	0.02	<0.05	14.2	537	14.1	7.5	0.001	0.37	0.12	1.1	1.1	<0.2	110.1	<0.01	0.01	9.89	<0.005	0.06	0.77	4	0.07	13.10	57	3.0
38	Q930155	Rock Pulp	0.75	0.03	<0.05	21.9	536	13.1	8.2	0.002	0.21	<0.05	1.8	0.8	<0.2	251.3	<0.01	0.02	10.65	<0.005	0.05	0.89	10	0.11	17.92	66	4.1
39	Q930156	Rock Pulp	0.34	0.03	<0.05	15.7	165	27.4	4.1	0.002	0.25	0.10	1.3	1	<0.2	609.2	<0.01	0.03	3	<0.005	0.03	0.61	4	0.06	29.85	26	1.5
40	Q930157	Rock Pulp	24.73	0.02	<0.05	82.2	1769	328.3	5.1	0.009	2.15	0.06	3.9	8.7	<0.2	101.9	<0.01	0.05	6.96	0.006	0.04	4.66	56	0.08	17.34	5619	4.1
41	Q930158	Rock Pulp	0.95	0.03	<0.05	31.2	645	47.4	9.2	0.001	0.21	0.19	1.3	0.9	<0.2	261.4	<0.01	0.04	13.97	<0.005	0.07	1.1	6	0.10	8.71	25	3.0
42	Q930159	Rock Pulp	1.69	0.02	<0.05	42.7	482	59.1	7.8	0.002	0.41	<0.05	2	1.4	<0.2	126.7	<0.01	0.03	10.25	<0.005	0.06	1.1	21	0.08	13.01	134	4.8
43	Q930160	Rock Pulp	0.86	0.02	0.12	35.6	760	1.9	9.1	0.001	0.33	0.07	1.1	0.7	<0.2	22.3	<0.01	0.02	9.29	<0.005	0.09	2.02	11	0.08	7.08	107	3.5
44	Q930161	Rock Pulp	4.75	0.02	<0.05	39.5	643	3.7	8.8	0.006	0.68	6.10	1.9	3.6	0.3	63	<0.01	0.02	12.6	<0.005	0.08	1.3	28	0.12	6.40	157	4.2
45	Q930162	Rock Pulp	2.07	0.02	<0.05	12.1	1964	9.7	6.0	0.002	0.76	<0.05	9.8	0.2	0.3	172.1	<0.01	0.02	5.85	0.009	0.07	0.34	159	0.10	24.82	305	3.0
46	Q930163	Rock Pulp	1.92	0.02	<0.05	9.4	5184	8.2	2.6	0.004	0.27	1.76	16.7	1	0.2	118.9	0.01	0.02	6.67	0.007	0.05	0.33	113	0.12	51.32	193	0.6
47	Q930164	Rock Pulp	0.44	0.03	<0.05	18.9	359	16.1	9.9	<0.001	0.09	0.13	1.3	0.5	<0.2	353.8	<0.01	0.02	10.59	0.006	0.08	0.69	5	0.06	13.72	29	2.6
48	Q930165	Rock Pulp	2.43	0.01	0.06	4.3	58	11.3	5.9	<0.001	0.76	0.57	0.7	0.3	0.3	97.4	<0.01	0.01	14.01	<0.005	0.15	3.29	1	0.08	10.71	7	6.5
49	Q930166	Rock Pulp	2.49	0.02	0.17	4.9	836	14.1	14.1	<0.001	0.19	0.54	1	<0.2	0.2	39.9	<0.01	0.01	13.24	0.007	0.14	1.08	3	0.18	7.78	31	4.1
50	Q930167	Rock Pulp	1.85	0.03	<0.05	27.6	774	60.5	7.2	0.001	0.60	3.63	1	1.5	<0.2	51	<0.01	0.03	10.11	<0.005	0.09	2.12	9	0.09	5.91	143	5.2
51	Q930168	Rock Pulp	0.47	0.02	<0.05	17.5	371	14.9	10.2	0.002	0.05	0.11	1.1	0.5	<0.2	216.2	<0.01	0.02	10.8	0.007	0.08	0.5	5	0.05	13.07	53	7.5
52	Q930169	Rock Pulp	0.31	0.02	0.06	24.6	531	14.0	12.5	0.001	0.07	<0.05	1.3	0.5	<0.2	284.6	<0.01	0.02	11.28	0.013	0.12	1	9	0.06	16.46	76	4.6
53	Q930170	Rock Pulp	2.88	0.04	0.46	44.4	2032	15.2	44.4	0.004	0.36	0.42	2.6	3	0.4	87.2	<0.01	0.01	5.98	0.111	0.4	1.72	59	0.12	17.00	168	6.5
54	Q930171	Rock Pulp	7.37	0.03	0.16	33.4	698	6.1	12.6	0.011	0.11	<0.05	1.2	0.5	0.2	46.4	<0.01	<0.01	7.52	0.015	0.1	1.64	28	0.09	8.28	161	5.1
55	Q930172	Rock Pulp	0.76	0.02	<0.05	26.6	500	8.1	7.4	0.001	0.28	<0.05	1.2	0.5	<0.2	192.6	<0.01	0.01	10.57	<0.005	0.05	1.13	7	0.37	8.10	65	2.4
56	Q930173	Rock Pulp	1.80	0.02	0.07	46.3	519	1.1	8.2	0.001	0.43	<0.05	1.7	0.4	<0.2	11.7	<0.01	0.06	20.28	<0.005	0.06	2.86	11	0.10	7.93	107	4.6
57	Q930174	Rock Pulp	0.97	0.02	<0.05	18.6	328	17.5	5.5	0.003	0.55	0.21	1.1	1.6	<0.2	267.5	<0.01	0.04	6.55	<0.005	0.09	1.31	3	0.10	25.44	32	1.4
58	Q930175	Rock Pulp	0.97	0.02	<0.05	24.1	367	28.4	8.0	0.001	<0.01	0.16	1.2	0.5	<0.2	134.2	<0.01	0.03	7.77	0.005	0.06	0.44	7	0.06	11.37	69	7.2
59	Q930176	Rock Pulp	7.80	0.03	<0.05	58.4	1170	11.6	8.0	0.003	0.11	0.55	1	1.2	<0.2	16.8	<0.01	0.02	6.65	<0.005	0.08	1.88	27	0.10	7.32	180	7.0
60	Q930114	Rock Pulp	4.20	0.02	0.47	2.9	51	16.3	6.5	<0.001	0.72	4.55	0.5	1.3	0.2	40	0.01	0.02	22.07	<0.005	0.24	4.09	1	0.28	11.04	8	1.6

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Method / Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
		Sample Type																									
61	Q930115	Rock Pulp	3.00	0.01	1.10	2.2	66	15.8	7.6	0.002	1.05	1.54	0.5	0.4	0.3	18.3	0.01	0.02	25.19	<0.005	0.2	3.58	<1	0.53	19.23	2	3.2
62	Q930122	Rock Pulp	2.28	0.02	0.61	4.4	215	85.3	8.3	0.003	0.84	3.74	0.5	1.9	0.4	121.2	0.01	0.01	33.16	<0.005	0.33	8.89	2	0.22	22.50	54	6.9
63	Q930136	Rock Pulp	3.59	0.02	0.85	2.5	74	70.1	6.8	0.002	0.77	5.52	0.5	2.7	0.4	8	0.01	<0.01	27.91	<0.005	0.33	5.83	<1	0.77	16.85	181	2.9
64	Q930138	Rock Pulp	4.51	0.01	0.37	1.9	30	25.5	8.8	<0.001	0.79	3.74	0.4	4.5	0.3	39.9	<0.01	<0.01	21.11	<0.005	0.23	4.68	<1	0.21	6.05	48	4.3
65	Q930146	Rock Pulp	3.05	0.02	0.91	2.6	67	61.3	6.1	0.002	0.59	12.88	0.4	4.1	0.3	32.9	0.01	<0.01	22.97	<0.005	0.31	3.69	<1	0.79	21.20	87	2.2
66	Q930116	Rock Pulp	2.70	0.01	0.25	5.4	575	4.6	11.6	<0.001	0.09	0.22	0.9	0.6	0.2	39.1	<0.01	<0.01	12.37	<0.005	0.1	1.24	2	0.20	8.03	18	3.6
67	Q930117	Rock Pulp	4.65	0.01	0.21	5.9	576	54.0	10.0	<0.001	2.37	0.07	0.7	0.2	<0.2	22.7	<0.01	<0.01	13.03	<0.005	0.4	2.02	2	0.12	7.01	19	3.3
68	Q930119	Rock Pulp	2.23	0.02	0.11	6.3	726	8.9	6.6	<0.001	1.35	0.29	0.9	0.2	<0.2	54	<0.01	<0.01	6.59	<0.005	0.22	0.73	2	0.11	6.51	37	5.2
69	Q930121	Rock Pulp	1.99	0.10	0.11	3.5	482	6.0	11.7	<0.001	0.19	<0.05	0.6	<0.2	<0.2	38.1	<0.01	<0.01	11.33	<0.005	0.11	0.7	1	0.12	6.58	13	2.7
70	Q930124	Rock Pulp	2.09	0.02	0.21	4.8	593	13.2	13.0	<0.001	0.38	<0.05	1.3	0.2	0.3	46	<0.01	<0.01	9.06	0.007	0.11	1.14	2	0.10	7.67	13	6.2
71	Q930125	Rock Pulp	1.84	0.02	0.21	2.6	78	7.3	7.3	<0.001	0.64	0.31	0.6	<0.2	0.5	7.4	<0.01	<0.01	22	<0.005	0.06	3.97	<1	0.12	5.12	4	9.1
72	Q930126	Rock Pulp	1.47	0.02	0.41	2.5	104	10.6	7.7	<0.001	0.30	0.09	0.5	0.2	0.4	6.3	<0.01	<0.01	24.04	<0.005	0.05	3.09	<1	0.12	7.67	9	5.1
73	Q930131	Rock Pulp	2.73	0.02	0.20	5.4	623	80.6	11.5	<0.001	0.85	0.08	0.9	0.2	0.3	27.8	<0.01	<0.01	10.16	0.006	0.09	1.67	2	0.09	6.69	98	6.5
74	Q930139	Rock Pulp	2.39	0.02	0.10	6.0	757	51.5	6.7	<0.001	1.07	0.36	1.3	0.6	0.4	56.6	<0.01	<0.01	11.14	<0.005	0.11	1.28	3	0.12	10.23	14	7.0
75	Q930140	Rock Pulp	2.34	0.01	0.12	5.6	745	11.8	9.6	<0.001	1.10	0.17	1.2	<0.2	0.2	39.1	<0.01	<0.01	5.2	<0.005	0.1	0.43	2	0.08	6.23	13	5.3
76	Q930142	Rock Pulp	2.71	0.02	0.32	6.5	797	28.7	14.4	<0.001	0.26	2.02	1.8	0.6	0.5	32.8	<0.01	<0.01	14.4	0.015	0.18	0.61	4	0.11	8.35	51	5.9
77	Q930177	Rock Pulp	2.24	0.14	0.16	69.1	568	259.4	215.1	0.002	0.09	2.29	12.9	0.6	0.4	351.6	<0.01	0.01	1.33	0.339	70.23	0.06	108	0.08	11.42	177	<0.5
78	Q930178	Rock Pulp	2.69	0.02	0.11	5.5	803	8.2	9.1	<0.001	0.35	0.05	1	1.1	0.2	22.2	<0.01	<0.01	7.73	<0.005	0.19	0.75	2	0.09	6.15	14	4.9
79	Q930179	Rock Pulp	0.88	0.29	0.12	72.8	591	133.4	138.1	0.001	0.08	2.35	8.3	0.9	0.4	92.3	<0.01	<0.01	0.6	0.409	47.35	0.69	102	0.17	5.61	268	0.9
QUALITY ASSURANCE / QUALITY CONTROL																											
Pulp Replicates:																											
1	Q930112	Rock Pulp	2.04	0.01	0.08	4.9	828	6.5	10.7	<0.001	0.18	0.12	0.9	<0.2	<0.2	22.9	<0.01	0.01	9.8	<0.005	0.08	1.18	2	0.10	8.68	9	4.6
1 R	Q930112	Rock Pulp - Rep	2.23	0.01	0.10	5.0	815	6.3	10.3	<0.001	0.19	0.10	0.9	0.4	<0.2	22.3	<0.01	<0.01	9.8	<0.005	0.08	1.18	2	0.07	8.94	9	4.3
36	Q930153	Rock Pulp	0.61	0.02	<0.05	26.4	356	3.9	9.3	0.001	0.29	0.22	1.4	1	<0.2	81.5	<0.01	0.01	13.6	<0.005	0.08	0.69	8	0.08	7.33	104	3.1
36 R	Q930153	Rock Pulp - Rep	0.53	0.02	<0.05	25.2	367	3.6	9.2	<0.001	0.28	0.17	1.3	0.4	<0.2	80.1	<0.01	0.02	13.3	<0.005	0.07	0.67	8	0.06	7.22	100	2.8
74	Q930139	Rock Pulp	2.39	0.02	0.10	6.0	757	51.5	6.7	<0.001	1.07	0.36	1.3	0.6	0.4	56.6	<0.01	<0.01	11.1	<0.005	0.11	1.28	3	0.12	10.23	14	7.0
74 R	Q930139	Rock Pulp - Rep	2.17	0.02	0.07	6.0	782	52.0	6.4	0.001	1.17	0.39	1.3	0.6	0.3	59.8	<0.01	<0.01	10.7	<0.005	0.14	1.25	3	0.11	9.83	14	6.5
Certified Reference Material - 1																											
STD OREAS 24b - 1			3.92	0.11	0.34	58.8	614	8.70	113.5	<0.001	0.20	0.46	9.70	<0.2	2.30	29.2	<0.01	0.02	14.8	0.205	0.70	1.78	78	1.19	12.56	95	25.2
STD OREAS 24b - 2			3.90	0.11	0.20	58.9	608	8.80	113.4	<0.001	0.20	0.37	9.80	0.30	2.30	30.0	<0.01	0.02	14.5	0.199	0.68	1.74	78	1.09	12.47	93	25.8
True Value STD OREAS 24b			**3.86**	**IND**	**0.31**	**57.0**	**620**	**9.23**	**114**	**<0.001**	**0.20**	**0.48**	**9.51**	**0.42**	**2.26**	**29.0**	**<0.05**	**<0.02**	**14.3**	**0.198**	**0.66**	**1.74**	**79**	**1.19**	**12.30**	**93**	**24.5**
% Difference - 1			1.6		9.7	3.2	-1.0	-5.7	-0.4	0.0	0.0	-4.2	2.0		1.8	0.7			3.5	3.5	6.1	2.3	-1.3	0.0	2.1	2.2	2.9
% Difference - 2			1.0		-35.5	3.3	-1.9	-4.7	-0.5	0.0	0.0	-22.9	3.0		1.8	3.4			1.6	0.5	3.0	0.0	-1.3	-8.4	1.4	0.0	5.3
Tolerance (%)			***0.37***	***NR***	***N/B***	***5***	***NR***	***1.29***	***15***	***NR***	***0.02***	***NR***	***1.39***	***NR***	***0.30***	***NR***	***NR***	***NR***	***1.1***	***0.017***	***0.08***	***0.26***	***5***	***NR***	***1.7***	***6***	***3.2***
Reference Materials - 2																											
STD GBM908-10						2161		2020																		957	
True Value STD GBM908-10			**N/A**	**N/A**	**N/A**	**2241**	**N/A**	**2049**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**1045**	**N/A**
% Difference						-3.6		-1.4																		-8.4	
Tolerance (%)						***17.0***		***21.0***																		***7.8***	
Method Blank:																											
Method Blank - 1			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5
Method Blank - 2			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5
Method Blank - 3			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresses:	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

REPORTING	
Global Project No:	1522
Report Version:	1
Pages (Including Cover):	4
Report Title:	COA SFE Results 11 (of 79) KZK Samples (instruc. rec'd 4-Aug16)
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

RESULTS		
Reported To:	**1**	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
	4	Jane Capp (jane@omipl.com.au)
Date Reported:		August 19, 2016 (Friday)

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kellib@bmcminerals.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
cc:	BMC Accounts (accounts@bmcminerals.com)
Global Invoice No:	ARD1522-0816B
Date Submitted:	August 19, 2016 (Friday)

NOTES
All samples are stored at no charge for 90 days except on-going HCT head client samples.
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

S. No.	BMC Sample ID	Geodomain	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes:	
1	Q930112	AK RHYv	Rock	4.28	Dry		
2	Q930118	AK RHYv	Rock	3.54	Dry		
3	Q930141	AK RHYv	Rock	3.92	Dry		
4	Q930113	CA CL MAF	Rock	3.56	Dry		
5	Q930127	CA CL MAF	Rock	3.60	Damp		
6	**Q930128**	CA CL MAF	Rock	3.52	Dry		
7	Q930129	CA CL MAF	Rock	3.38	Dry		
8	Q930130	CA CL MAF	Rock	3.54	Dry		
9	Q930132	CA CL MAF	Rock	3.74	Damp		
10	Q930133	CA CL MAF	Rock	3.74	Damp		
11	Q930134	MU PY RHY	Rock	3.54	Damp		
12	Q930135	CA CL MAF	Rock	3.42	Damp		
13	**Q930137**	CA CL MAF	Rock	3.30	Dry		
14	Q930143	CA CL MAF	Rock	3.62	Dry		
15	Q930144	MU PY RHY	Rock	4.48	Damp		
16	Q930145	CA CL MAF	Rock	3.80	Damp		
17	Q930147	CA CL MAF	Rock	4.20	Dry		
18	Q930120	CARB MDS/RHY	Rock	3.38	Damp		
19	Q930123	CARB MDS/RHY	Rock	3.60	Damp		
20	Q930101	MDS	Rock	3.54	Dry	Crush to Column Particle Size	1
21	Q930102	MDS	Rock	3.42	Damp	Crush to Column Particle Size	2
22	Q930103	MDS	Rock	2.92	Damp	Crush to Column Particle Size	3
23	Q930104	MDS	Rock	2.92	Damp	Crush to Column Particle Size	4
24	Q930105	MDS	Rock	3.26	Dry	Crush to Column Particle Size	5
25	**Q930106**	MDS	Rock	3.80	Dry	Crush to Column Particle Size	6
26	Q930107	MDS	Rock	3.78	Dry	Crush to Column Particle Size	7
27	Q930108	MDS	Rock	3.92	Dry	Crush to Column Particle Size	8
28	Q930109	MDS	Rock	4.68	Damp	Crush to Column Particle Size	9
29	Q930110	MDS	Rock	3.80	Damp	Crush to Column Particle Size	10
30	Q930111	MDS	Rock	3.74	Dry	Crush to Column Particle Size	11
31	Q930148	MDS	Rock	4.46	Dry	Crush to Column Particle Size	12
32	**Q930149**	MDS	Rock	3.80	Damp	Crush to Column Particle Size	13
33	Q930150	MDS	Rock	4.20	Dry	Crush to Column Particle Size	14
34	**Q930151**	MDS	Rock	4.08	Dry	Crush to Column Particle Size	15
35	**Q930152**	MDS	Rock	3.76	Damp	Crush to Column Particle Size	16
36	Q930153	MDS	Rock	3.32	Damp	Crush to Column Particle Size	17
37	Q930154	MDS	Rock	3.42	Damp	Crush to Column Particle Size	18
38	Q930155	MDS	Rock/Fines	3.44	Dry	Crush to Column Particle Size	19
39	Q930156	MDS	Rock	3.44	Damp	Crush to Column Particle Size	20
40	Q930157	MDS	Rock	3.70	Damp	Crush to Column Particle Size	21
41	Q930158	MDS	Rock	4.08	Dry	Crush to Column Particle Size	22
42	**Q930159**	MDS	Rock/Fines	3.82	Damp	Crush to Column Particle Size	23
43	Q930160	MDS	Rock	3.82	Dry	Crush to Column Particle Size	24
44	Q930161	MDS	Rock	3.44	Damp	Crush to Column Particle Size	25
45	**Q930162**	MDS	Rock	3.52	Dry	Crush to Column Particle Size	26

Sample Receipt Info:	
Date Sample Received:	June 27, 2016 (Monday)
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Andrew Gault (agault@alexcoresource.com) By Email/COC.
Date Instruction Received:	August 4, 2016 (Thursday)

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

S. No.	BMC Sample ID	Geodomain	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes:	
46	Q930163	MDS	Rock	3.42	Damp	Crush to Column Particle Size	27
47	Q930164	MDS	Rock	4.40	Dry	Crush to Column Particle Size	28
48	Q930165	AK RHYv	Rock	3.58	Damp		
49	Q930166	AK RHYv	Rock	3.20	Damp		
50	Q930167	MDS	Rock	3.56	Damp	Crush to Column Particle Size	29
51	Q930168	MDS	Rock	4.10	Damp	Crush to Column Particle Size	30
52	Q930169	MDS	Rock	4.54	Damp	Crush to Column Particle Size	31
53	Q930170	AK RHYv	Rock	3.38	Damp		
54	Q930171	CARB MDS/RHY	Rock	4.00	Damp		
55	Q930172	MDS	Rock	3.58	Dry	Crush to Column Particle Size	32
56	Q930173	MDS	Rock	3.58	Dry	Crush to Column Particle Size	33
57	Q930174	MDS	Rock	3.96	Damp	Crush to Column Particle Size	34
58	Q930175	MDS	Rock	3.40	Dry	Crush to Column Particle Size	35
59	Q930176	MDS	Rock	3.40	Dry	Crush to Column Particle Size	36
60	Q930114	MU PY RHY	Rock	3.24	Dry		
61	Q930115	MU PY RHY	Rock	4.12	Dry		
62	Q930122	MU PY RHY	Rock	3.46	Damp		
63	Q930136	MU PY RHY	Rock	3.32	Dry		
64	**Q930138**	MU PY RHY	Rock	3.48	Damp		
65	Q930146	MU PY RHY	Rock	3.60	Damp		
66	Q930116	PY AK RHYv	Rock	3.54	Damp		
67	Q930117	PY AK RHYv	Rock	4.14	Dry		
68	**Q930119**	PY AK RHYv	Rock	3.38	Dry		
69	Q930121	PY AK RHYv	Rock	4.32	Dry		
70	Q930124	PY AK RHYv	Rock	3.52	Dry		
71	Q930125	PY AK RHYv	Rock	3.64	Dry		
72	Q930126	PY AK RHYv	Rock	3.36	Dry		
73	Q930131	PY AK RHYv	Rock	3.72	Dry		
74	Q930139	MU PY RHY	Rock	3.82	Dry		
75	Q930140	PY AK RHYv	Rock	3.78	Dry		
76	**Q930142**	PY AK RHYv	Rock	3.48	Dry		
77	Q930177	CA CL MAF	Rock	3.82	Damp		
78	Q930178	PY AK RHYv	Rock	3.42	Dry		
79	Q930179	CA CL MAF	Rock	3.38	Dry		

Sample Receipt Info:

Total wt. of sample rec'd (kg): **290.9**

Notes:

Due to the possibility of a further trickle leach column using the MDS geodomain material, just the MDS samples (indicated in red, total 36 samples) were crushed to the same size as the other trickle leach columns - i.e. 80% passing 2 inch. Email from Andrew Gault dated June 28, 2016).

Remaining samples were all crushed to regular 85% passing 1/4 inch (6.3 mm).

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ MEND-SHAKE FLASK EXTRACTION RESULTS

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

Parameter	Method	Unit	MRL	6	13	25	32	34	35	42	45	64	68	76	76 D	Method Blank
				Sample ID												
				Q930128	Q930137	Q930106	Q930149	Q930151	Q930152	Q930159	Q930162	Q930138	Q930119	Q930142	Q930142 (Dup)	
Weight of dry sample used	Weighing Scale	g	0.01	250	250	250	250	250	250	250	250	250	250	250	250	N/A
Volume of DI water used	Graduated Cylinder	mL	0.50	750	750	750	750	750	750	750	750	750	750	750	750	750
On filtered samples using 0.45 micron filter paper																
pH	pH Meter	pH units	0.01	8.89	8.99	8.72	7.64	8.35	8.49	7.11	7.54	8.95	9.04	9.04	9.02	5.52
EC	EC Meter	µS/cm	0.5	71.0	36.0	78.0	120.0	123.0	111.0	276.0	288.0	92.0	78.9	80.0	83.0	0.5
Acidity (to pH 8.3)	Titration/Calc.	mg $CaCO_3$/L	0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	4.0	5.0	<0.5	<0.5	<0.5	<0.5	1.0
Alkalinity (to pH 4.5)	Titration/Calc.	mg $CaCO_3$/L	0.5	24.0	25.0	25.0	28.0	24.5	25.0	13.0	25.0	16.0	21.0	24.0	24.5	0.5
Dissolved Sulphate (SO4)	Turbidimetry	mg/L	0.50	3.45	2.54	5.16	20.7	27.5	17.8	112.0	108	15.8	8.88	7.01	6.99	<0.5
Fluoride (F)	SIE	mg/L	0.010	0.056	0.058	0.076	0.094	0.140	0.120	0.065	0.120	0.060	0.052	0.098		
Dissolved Metals Analysis by ICP-MS:																
Hardness, Total (as CaCO3)	ICP-MS	mg/L	0.1	23.0	19.0	28.0	42.0	42.0	27.0	114.0	71.0	23.0	24.0	21.0		<0.1
Aluminum, dissolved	ICP-MS	mg/L	0.001	0.101	0.208	0.332	0.242	0.257	0.455	0.047	0.049	0.257	0.238	0.308		<0.001
Antimony, dissolved	ICP-MS	mg/L	0.00005	0.00206	0.00167	0.00019	0.00037	0.00014	0.00027	0.00014	0.00053	0.01120	0.00388	0.02890		<0.00005
Arsenic, dissolved	ICP-MS	mg/L	0.00005	0.01150	0.00494	0.00058	0.00073	0.00011	0.00064	0.00379	0.00025	0.00067	0.00126	0.00013		<0.00005
Barium, dissolved	ICP-MS	mg/L	0.0001	0.1650	0.2400	0.0054	0.0066	0.0074	0.0041	0.0203	0.0732	0.0025	0.0324	0.0042		<0.0001
Beryllium, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001
Bismuth, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001
Boron, dissolved	ICP-MS	mg/L	0.001	0.003	0.002	0.004	0.004	0.003	0.004	0.005	0.008	0.002	0.002	0.002		<0.001
Cadmium, dissolved	ICP-MS	mg/L	0.000002	0.000009	0.000009	0.000005	0.000009	0.000006	0.000007	0.000022	0.000042	0.000004	0.000003	<0.000002		<0.000002
Calcium, dissolved	ICP-MS	mg/L	0.04	5.47	4.89	8.84	12.40	10.80	8.66	32.30	22.30	8.15	5.82	6.17		<0.040
Chromium, dissolved	ICP-MS	mg/L	0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.0001	<0.0001	<0.0001	0.0002	<0.0001		<0.0001
Cobalt, dissolved	ICP-MS	mg/L	0.000005	0.000030	0.000024	0.000011	0.000051	0.000228	0.000057	0.000770	0.000248	0.000013	0.000032	0.000014		<0.000005
Copper, dissolved	ICP-MS	mg/L	0.0001	0.0007	0.0010	0.0011	0.0018	0.0013	0.0028	0.0043	0.0056	0.0012	0.0012	0.0011		0.0008
Iron, dissolved	ICP-MS	mg/L	0.002	0.006	0.007	<0.002	0.005	0.006	0.034	0.018	0.013	0.007	0.007	0.007		<0.002
Lead, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00006	0.00006	<0.00005	0.00046	<0.00005	<0.00005		<0.00005
Lithium, dissolved	ICP-MS	mg/L	0.00005	0.00034	0.00038	0.00061	0.00111	0.00137	0.00059	0.00125	0.00185	0.00115	0.00069	0.00132		<0.00005
Magnesium, dissolved	ICP-MS	mg/L	0.01	2.15	1.65	1.35	2.78	3.76	1.20	8.08	3.72	0.74	2.29	1.47		<0.005
Manganese, dissolved	ICP-MS	mg/L	0.00005	0.00055	0.00045	0.00096	0.01540	0.01310	0.00508	0.01650	0.01450	0.00495	0.00310	0.00603		0.0002
Mercury, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001
Molybdenum, dissolved	ICP-MS	mg/L	0.00001	0.00025	0.00028	0.00081	0.00279	0.00858	0.00087	0.00201	0.00220	0.00100	0.00135	0.00052		<0.00001
Nickel, dissolved	ICP-MS	mg/L	0.00002	0.00009	0.00006	0.00010	0.00042	0.00203	0.00099	0.00160	0.00063	0.00004	0.00006	0.00010		<0.00002
Phosphorus, dissolved	ICP-MS	mg/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	<0.010	<0.010	0.01		<0.010
Potassium, dissolved	ICP-MS	mg/L	0.01	2.93	3.60	3.69	3.22	3.59	4.65	3.98	5.15	4.45	3.45	6.96		<0.010
Selenium, dissolved	ICP-MS	mg/L	0.0001	0.0001	<0.0001	0.0006	0.0005	0.0006	0.0005	0.0022	0.0005	0.0043	<0.0001	<0.0001		<0.0001
Silicon, dissolved	ICP-MS	mg/L	0.05	1.33	1.31	0.96	0.97	0.83	1.16	0.38	0.66	0.96	0.89	1.33		<0.050
Silver, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001
Sodium, dissolved	ICP-MS	mg/L	0.01	2.13	2.24	0.55	2.77	2.64	6.96	4.80	23.10	3.09	1.32	1.02		<0.010
Strontium, dissolved	ICP-MS	mg/L	0.0001	0.1050	0.0848	0.0321	0.0499	0.0353	0.0212	0.0854	0.0698	0.0310	0.0913	0.0337		<0.0001
Sulphur, dissolved	ICP-MS	mg/L	0.50	0.79	1.12	2.70	7.78	8.95	6.31	37.70	30.90	5.84	5.15	4.25		<0.500
Tellurium, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005
Thallium, dissolved	ICP-MS	mg/L	0.000004	0.000065	0.000121	0.000007	0.000006	0.000015	0.000007	0.000006	0.000008	0.000079	0.000024	0.000014		<0.000004
Thorium, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	0.00001	0.00001	0.00029	0.00014	0.00001	0.00061	0.00002	0.00002		<0.00001
Tin, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00005	<0.00005	0.00016	<0.00005	0.00005	0.00007		<0.00005
Titanium, dissolved	ICP-MS	mg/L	0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	0.0009	0.0007	0.0004	0.0002	0.0006	0.0002		<0.0002
Uranium, dissolved	ICP-MS	mg/L	0.000001	0.000001	0.000007	0.000580	0.001270	0.000736	0.001830	0.001510	0.001130	0.022600	0.002690	0.000458		<0.000001
Vanadium, dissolved	ICP-MS	mg/L	0.0002	0.0101	0.0080	0.0003	<0.0002	0.0003	0.0004	<0.0002	0.0002	<0.0002	<0.0002	<0.0002		<0.0002
Zinc, dissolved	ICP-MS	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001		<0.001
Zirconium, dissolved	ICP-MS	mg/L	0.00002	<0.00002	<0.00002	<0.00002	0.00024	0.00015	0.00369	0.00125	0.00104	0.00027	0.00031	0.00003		<0.00002
Ion Balance																
Major Anions	Calc.	meq/L		0.55	0.56	0.61	1.00	1.07	0.88	2.60	2.76	0.65	0.61	0.63	0.64	
Major Cations	Calc.	meq/L		0.63	0.60	0.71	1.08	1.09	1.01	2.60	2.57	0.75	0.65	0.69	0.69	
Difference	Calc.	meq/L		-0.08	-0.04	-0.10	-0.08	-0.02	-0.13	0.00	0.19	-0.09	-0.05	-0.06	-0.05	
Balance (%)	Calc.	%		-6.7%	-3.7%	-7.4%	-4.1%	-0.7%	-6.9%	0.0%	3.6%	-6.7%	-3.7%	-4.3%	-3.5%	
			SFE ID for Anions:	*PF9960*	*PF9961*	*PF9962*	*PF9963*	*PF9964*	*PF9965*	*PF9966*	*PF9967*	*PF9968*	*PF9969*	*PF9970*		
			SFE ID for Cations:	*6080980-01*	*6080980-02*	*6080980-03*	*6080980-04*	*6080980-05*	*6080980-06*	*6080980-07*	*6080980-08*	*6080980-09*	*6080980-10*	*6080980-11*		*6080980-12*

Notes:
Job Nos: Anions: B667582; Cations: 6080980.
If small weights are used (instead of regular 250 g) - it is due to limited sample availability.
Reported Detection Limit (RDL) may be higher than the Method Reporting Limit (MRL) due to various factors such as dilutions, limited sample volume, high moisture, or interferences.

Date of Analysis (24 h): August 9/10, 2016.
pH of DI water used (pH Units): 5.60
EC of DI water used (μS/cm): 0.61

Abbreviations:
R / Rep = Replicate (which involves the analysis of the same Shake Flask Extract aliquot).
D / Dup = Duplicate (which involves the analysis of a separate SF extract, produced by processing a secopnd split of the original client sample received).
EC = Electrical Conductivity
NA = Not Applicable.
NR = Not Reported.
mg/L = Milligrams per Litre

Method Reference: Prediction Manual for Drainage Chemistry from Sulphidic Geologic Material, MEND Report 1.20.1; Version 0 - Dec. 2009. Section 11.5; P 11 (8-9).
Extraction Method used: Using gyratory shaker for 24h (± 2h; gentle agitation).
Liquid: Solid ratio used: 3: 1; L: S; 750 mL DI H_2O: 250 g of crushed sample (85% passing 1/4 inch - i.e. 6.3 mm)

ICP-MS Method Reference Descriptions (APHA): Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation.

CERTIFICATE OF ANALYSIS ▪ MEND-SFE QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

SFE - Sulphate & Fluoride:

QA/QC Batch	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
8362028	Spiked Blank	Dissolved Sulphate (SO4)	2016/08/12		90	%	80 - 120
8362028	Method Blank	Dissolved Sulphate (SO4)	2016/08/12	<0.50		mg/L	
8362028	RPD [PF9966-01]	Dissolved Sulphate (SO4)	2016/08/12	1.1		%	20
8362035	Matrix Spike	Dissolved Sulphate (SO4)	2016/08/12		NC	%	80 - 120
8362035	Spiked Blank	Dissolved Sulphate (SO4)	2016/08/12		100	%	80 - 120
8362035	Method Blank	Dissolved Sulphate (SO4)	2016/08/12	<0.50		mg/L	
8362035	RPD	Dissolved Sulphate (SO4)	2016/08/12	1.7		%	20
8363769	Matrix Spike	Fluoride (F)	2016/08/15		104	%	80 - 120
8363769	Spiked Blank	Fluoride (F)	2016/08/15		106	%	80 - 120
8363769	Method Blank	Fluoride (F)	2016/08/15	<0.010		mg/L	
8363769	RPD [PF9969-01]	Fluoride (F)	2016/08/15	1.9		%	20
8363769	RPD	Fluoride (F)	2016/08/15	0		%	20
8364640	Spiked Blank	Dissolved Sulphate (SO4)	2016/08/15		102	%	80 - 120
8364640	Method Blank	Dissolved Sulphate (SO4)	2016/08/15	<0.50		mg/L	

Notes:

Job No: B667582

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

Dissolved Metals by ICP-MS:

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6080980_B6H1236-BLK1	Aluminum dissolved	<	0.001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.001	mg/L		
6080980_B6H1236-BLK1	Antimony dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L		
6080980_B6H1236-BLK1	Arsenic dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L		
6080980_B6H1236-BLK1	Barium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0001	mg/L		
6080980_B6H1236-BLK1	Beryllium dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00001	mg/L		
6080980_B6H1236-BLK1	Bismuth dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00001	mg/L		
6080980_B6H1236-BLK1	Boron dissolved	<	0.001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.001	mg/L		
6080980_B6H1236-BLK1	Cadmium dissolved	<	0.000002	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.000002	mg/L		
6080980_B6H1236-BLK1	Calcium dissolved	<	0.04	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.04	mg/L		
6080980_B6H1236-BLK1	Chromium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0001	mg/L		
6080980_B6H1236-BLK1	Cobalt dissolved	<	0.000005	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.000005	mg/L		
6080980_B6H1236-BLK1	Copper dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0001	mg/L		
6080980_B6H1236-BLK1	Iron dissolved	<	0.002	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.002	mg/L		
6080980_B6H1236-BLK1	Lead dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L		
6080980_B6H1236-BLK1	Lithium dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L		
6080980_B6H1236-BLK1	Magnesium dissolved	<	0.005	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.005	mg/L		
6080980_B6H1236-BLK1	Manganese dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L		
6080980_B6H1236-BLK1	Mercury dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00001	mg/L		
6080980_B6H1236-BLK1	Molybdenum dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00001	mg/L		
6080980_B6H1236-BLK1	Nickel dissolved	<	0.00002	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00002	mg/L		
6080980_B6H1236-BLK1	Phosphorus dissolved	<	0.01	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.01	mg/L		
6080980_B6H1236-BLK1	Potassium dissolved	<	0.01	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.01	mg/L		
6080980_B6H1236-BLK1	Selenium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0001	mg/L		
6080980_B6H1236-BLK1	Silicon dissolved	<	0.05	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.05	mg/L		
6080980_B6H1236-BLK1	Silver dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00001	mg/L		
6080980_B6H1236-BLK1	Sodium dissolved	<	0.01	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.01	mg/L		
6080980_B6H1236-BLK1	Strontium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0001	mg/L		
6080980_B6H1236-BLK1	Sulfur dissolved	<	0.5	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.5	mg/L		
6080980_B6H1236-BLK1	Tellurium dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L		
6080980_B6H1236-BLK1	Thallium dissolved	<	0.000004	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.000004	mg/L		
6080980_B6H1236-BLK1	Thorium dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00001	mg/L		
6080980_B6H1236-BLK1	Tin dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L		
6080980_B6H1236-BLK1	Titanium dissolved	<	0.0002	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0002	mg/L		
6080980_B6H1236-BLK1	Uranium dissolved	<	0.000001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.000001	mg/L		
6080980_B6H1236-BLK1	Vanadium dissolved	<	0.0002	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0002	mg/L		
6080980_B6H1236-BLK1	Zinc dissolved	<	0.001	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.001	mg/L		
6080980_B6H1236-BLK1	Zirconium dissolved	<	0.00002	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00002	mg/L		

Dissolved Metals by ICP-MS:

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6080980_B6H1236-MS1	Antimony dissolved		0.0478	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L	114	81
6080980_B6H1236-MS1	Arsenic dissolved		0.0329	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L	115	89
6080980_B6H1236-MS1	Barium dissolved		0.271	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0001	mg/L	115	86
6080980_B6H1236-MS1	Beryllium dissolved		0.0108	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00001	mg/L	124	77
6080980_B6H1236-MS1	Cadmium dissolved		0.0105	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.000002	mg/L	126	82
6080980_B6H1236-MS1	Chromium dissolved		0.0423	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0001	mg/L	117	85
6080980_B6H1236-MS1	Cobalt dissolved		0.0424	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.000005	mg/L	131	76
6080980_B6H1236-MS1	Copper dissolved		0.0441	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0001	mg/L	113	88
6080980_B6H1236-MS1	Iron dissolved		0.224	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.002	mg/L	115	80
6080980_B6H1236-MS1	Lead dissolved		0.0214	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L	121	84
6080980_B6H1236-MS1	Manganese dissolved		0.0423	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00005	mg/L	135	75
6080980_B6H1236-MS1	Nickel dissolved		0.0426	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00002	mg/L	121	83
6080980_B6H1236-MS1	Selenium dissolved		0.0106	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0001	mg/L	122	91
6080980_B6H1236-MS1	Silver dissolved		0.00913	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.00001	mg/L	120	74
6080980_B6H1236-MS1	Thallium dissolved		0.0108	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.000004	mg/L	119	79
6080980_B6H1236-MS1	Vanadium dissolved		0.0555	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.0002	mg/L	115	80
6080980_B6H1236-MS1	Zinc dissolved		0.064	mg/L	F	Metals	APHA 3125 B	19-Aug-16	0.001	mg/L	123	89
6080980_B6H1236-SRM1	Aluminum dissolved		106	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	142	58
6080980_B6H1236-SRM1	Antimony dissolved		122	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	125	75
6080980_B6H1236-SRM1	Arsenic dissolved		111	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	119	81
6080980_B6H1236-SRM1	Barium dissolved		107	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	117	83
6080980_B6H1236-SRM1	Beryllium dissolved		111	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	120	80
6080980_B6H1236-SRM1	Boron dissolved		97	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	117	74
6080980_B6H1236-SRM1	Cadmium dissolved		109	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	117	83
6080980_B6H1236-SRM1	Calcium dissolved		111	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	124	76
6080980_B6H1236-SRM1	Chromium dissolved		107	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	119	81
6080980_B6H1236-SRM1	Cobalt dissolved		110	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	124	76
6080980_B6H1236-SRM1	Copper dissolved		112	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	116	84
6080980_B6H1236-SRM1	Iron dissolved		108	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	126	74
6080980_B6H1236-SRM1	Lead dissolved		111	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	128	72
6080980_B6H1236-SRM1	Lithium dissolved		109	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	140	60
6080980_B6H1236-SRM1	Magnesium dissolved		107	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	119	81
6080980_B6H1236-SRM1	Manganese dissolved		107	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	116	84
6080980_B6H1236-SRM1	Molybdenum dissolved		116	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	117	83
6080980_B6H1236-SRM1	Nickel dissolved		110	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	126	74
6080980_B6H1236-SRM1	Phosphorus dissolved		116	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	132	68
6080980_B6H1236-SRM1	Potassium dissolved		108	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	126	74
6080980_B6H1236-SRM1	Selenium dissolved		115	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	130	70
6080980_B6H1236-SRM1	Sodium dissolved		104	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	128	72
6080980_B6H1236-SRM1	Strontium dissolved		105	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	113	84
6080980_B6H1236-SRM1	Thallium dissolved		107	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	143	57
6080980_B6H1236-SRM1	Uranium dissolved		107	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	115	85
6080980_B6H1236-SRM1	Vanadium dissolved		105	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	113	87
6080980_B6H1236-SRM1	Zinc dissolved		112	%	F	Metals	APHA 3125 B	19-Aug-16	1	%	128	72

Notes:

Job No: 6080980

EQL = Estimated Quantitation Limits

PQL = Practical Quantitation Limits

UCL = Upper Control Limit

LCL = Lower Control Limit

SRM = Standard Reference Materials

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresses:	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

RESULTS		
Reported To:	**1**	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
cc:		N/A
Date Reported:		V-1: ABA/Metals - Feb. 29, 2016 (Monday); V-2: SFE - April 13, 2016 (Wednesday); V-3: Modified Sobek NP - April 26, 2016 (Tuesday).

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kdbergh@gmail.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
cc:	BMC Accounts (accounts@bmcminerals.com)
Global Invoice No:	ABA/Metals: ARD1522-0216B; SFE: ARD1522-0416B; Mod. Sobek NP: ARD1522-0416A
Date Submitted:	ABA/Metals: Feb. 29, 2016 (Monday); SFE: April 13, 2016 (Wednesday); Mod. Sobek NP: to be invoice.

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

REPORTING	
Global Project No:	1522
Report Version:	3
Pages (Including Cover):	6
Report Title:	COA 12 BMC-KZK Samples (rec'd 24-Dec15) V3
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

NOTES
All samples are stored at no charge for 90 days except on-going HCT head client samples.
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes (if any)
1	B00293251	Drill Core	7.02	Dry	
2	B00293252	Drill Core	6.58	Dry	
3	B00293253	Drill Core	7.28	Dry	
4	B00293254	Drill Core	7.86	Dry	
5	B00293255	Drill Core	7.88	Dry	
6	B00293256	Drill Core	7.86	Dry	
7	B00293257	Drill Core	7.96	Dry	
8	B00293258	Drill Core	8.50	Dry	
9	B00293259	Drill Core	7.72	Dry	
10	B00293260	Drill Core	7.46	Dry	
11	B00293261	Drill Core	8.48	Dry	
12	B00293262	Drill Core	6.08	Damp	

Note: Highlighted samples requested for 24h MEND-SFE.

Total wt. of sample rec'd (kg): **91**

Sample Receipt Info:	
Date Sample Received:	Dec. 24, 2015
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Andrew Gault (agault@alexcoresource.com)
	By Email/COC.
Date Instruction Received:	ABA Metals: January 29, 2016 (Friday)
	SFE: March 29, 2016 (Monday)
	Mod. Sobek NP: April 13, 2016 (Wednesday)

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Siderite Corrected NP	NNP*4	NPR*5	Mod. ABA NP
	Units:	**pH Units**		**wt %**	**kg CaCO3/tonne**	**wt.%**	**wt.%**	**wt.%**		**kg CaCO3/tonne**			**kg CaCO3/tonne**
	Reported Detection Limit:	***0.01***		***0.02***	***1.7***	**0.01**	**0.01**	**0.01**	**0.3**	***0.5***			***0.5***
1	B00293251	9.3	Moderate	0.16	13.3	0.84	0.05	0.79	24.7	28.1	3.4	1.1	19.0
2	B00293252	9.3	Moderate	0.09	7.5	1.71	0.04	1.67	52.2	20.7	-31.5	0.4	16.2
3	B00293253	9.4	Strong	0.56	46.7	0.76	0.04	0.72	22.5	69.3	46.8	3.1	52.0
4	B00293254	9.1	Slight	0.05	4.2	1.04	0.03	1.01	31.6	11.8	-19.8	0.4	8.2
5	B00293255	9.6	Moderate	0.05	4.2	0.95	0.05	0.90	28.1	10.1	-18.0	0.4	9.9
6	B00293256	9.7	Strong	0.25	20.8	0.59	0.03	0.56	17.5	55.7	38.2	3.2	25.5
7	B00293257	9.8	Moderate	0.24	20.0	0.48	0.04	0.44	13.8	35.3	21.6	2.6	24.7
8	B00293258	9.6	Slight	0.05	4.2	0.94	0.03	0.91	28.4	13.1	-15.3	0.5	9.6
9	B00293259	9.7	Strong	0.68	56.7	0.18	0.04	0.14	4.4	78.1	73.7	17.9	63.5
10	B00293260	9.3	None	<0.02	<1.7	0.69	0.08	0.61	19.1	7.8	-11.3	0.4	5.6
11	B00293261	9.2	None	<0.02	<1.7	1.18	0.04	1.14	35.6	5.5	-30.1	0.2	2.9
12	B00293262	8.9	Slight	0.15	12.5	0.59	0.03	0.56	17.5	22.0	4.5	1.3	17.0
	QUALITY ASSURANCE / QUALITY CONTROL												
Replicates:													
1	B00293251			0.16	13.3	0.84							
1 R	B00293251 (Rep)			0.16	13.3	0.84							
10	B00293260	9.3	None				0.08			7.8			5.6
10 R	B00293260 (Rep)	9.3	None				0.08			8.1			5.1
Certified Reference Material (CRM) Analysis:										**as STD Sobek NP** (no CRM available for Sid. Corr. NP)			
Certified Reference Material		KZK-1		SY-4		OREAS 24b	RTS-3a			1) KZK-1 (Slight) 2) KZK-1 (Moderate)			1) KZK-1 (Slight) 2) KZK-1 (Moderate)
CRM True Value		**8.80**		**0.96**		**0.190**	**1.10**			**1) 59.0 2) 64.8**			**1) 58.9 2) 61.6**
Reference Material Results		8.83		0.91		0.180	1.16			1) 57.6 / 56.8 2) 63.6			1) 56.7 2) N/A
Tolerance (+/-)		***0.09***		***0.03***		***IND***	***0.20***			***1) 2.8 2) 5.8***			***1) 1.1 2) 3.4***
Method Blank Analysis:													
Method Blank Results				<0.02		<0.01	<0.01						
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*ARD-013 (HCl Leach)*	*Calc.*	*Calc.*	*ARD-008*	*Calc.*	*Calc.*	*ARD-005*

NOTES:

Date of Analysis: Feb. 22, 2016; Modified Sobek NP: April 17/18, 2016.

pH of DI water (pH Units): 5.74 / 5.65

EC of DI water (µS/cm): 0.34 / 0.38

For STD SY-4, the TIC results are evaluated against the COA CO2 (3.5%) value calculated as carbon - i.e. 0.96%. The COA 95% Confidence Interval then calculates to 0.03%.

METHODS:

Total sulphur by LECO, total inorganic carbon by HCl leach followed by Leco analysis. Job #: MA0048-FEB16.

ABBREVIATIONS:

R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)

D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request.

NP = Neutralization Potential

Calc. = Calculation

COA = Certificate Of Analysis

IND = Indeterminate

CALCULATIONS:

*1 $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)

*2 Sulphide-Sulphur: Total-sulphur - sulphate-sulphur

*3 AP (Acid Potential): Sulphide-sulphur x 31.25

*4 NNP (Net Neutralization Potential): NP - AP

*5 NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:

Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)

ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).

Peroxide Siderite Correction for Sobek NP: Skousen, J., Renton, J., Brown, H., Evans, P., Leavitt, B., Brady, K., Cohen, L. and Ziemkiewicz, P. (1997), Neutralization Potential of Overburden Samples containing Siderite, Journal of Environmental Quality, v26, n3, p673-681.

Modified ABA (Sobek) NP: MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).

Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

PAGE: 4a of 6
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Analyte	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)
		Method	**IMS-130**											
		Unit	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**%**	**ppm**	**ppm**	**ppm**
		MDL	**0.01**	**0.01**	**0.1**	**0.005**	**10**	**10**	**0.05**	**0.01**	**0.01**	**0.01**	**0.02**	**0.1**
		Sample Type												
1	B00293251	Rock Pulp	0.33	0.19	20.1	0.008	<10	148	0.10	0.37	0.76	3.31	56.46	2.0
2	B00293252	Rock Pulp	0.97	0.31	36.7	0.041	<10	121	0.33	0.58	0.60	0.08	92.65	3.5
3	B00293253	Rock Pulp	1.39	0.35	19.7	0.029	<10	107	0.36	1.51	2.02	0.21	42.8	2.2
4	B00293254	Rock Pulp	0.30	0.41	9.5	<0.005	<10	143	0.27	0.45	0.35	0.04	109.09	2.9
5	B00293255	Rock Pulp	0.63	0.19	24.2	0.017	<10	127	0.11	0.14	0.36	0.21	126.58	2.7
6	B00293256	Rock Pulp	4.46	0.30	62.8	0.013	<10	154	0.20	5.60	1.00	0.54	87.51	2.3
7	B00293257	Rock Pulp	0.37	0.21	13.1	<0.005	<10	98	0.17	0.08	0.98	0.05	100.56	2.6
8	B00293258	Rock Pulp	0.65	0.43	13.3	<0.005	<10	87	0.31	0.36	0.40	0.04	22.21	3.3
9	B00293259	Rock Pulp	0.49	0.43	19.7	0.007	<10	107	0.54	0.23	2.35	0.17	88.88	1.0
10	B00293260	Rock Pulp	0.55	0.19	10.5	0.008	<10	168	0.18	0.14	0.19	0.06	43.53	2.6
11	B00293261	Rock Pulp	0.77	0.17	16.6	0.039	<10	109	0.10	0.15	0.10	0.94	56.01	2.5
12	B00293262	Rock Pulp	0.38	0.30	4.1	<0.005	<10	100	0.19	0.44	0.72	0.02	89.39	2.3
QUALITY ASSURANCE / QUALITY CONTROL														
Pulp Replicates:														
1	B00293251	Rock Pulp	0.33	0.19	20.1	0.008	<10	148	0.10	0.37	0.76	3.31	56.46	2.0
1 R	B00293251 (Rep)	Rep	0.38	0.20	17.8	0.013	<10	151	0.11	0.49	0.76	3.54	69.36	1.9
Reference Material														
STD OREAS 24b			0.070	3.19	8.20	<0.005	<10	147	1.73	0.70	0.46	0.07	62.2	15.3
True Value STD OREAS 24b			0.058	**3.15**	**7.96**	0.002	6.23	**146**	1.65	**0.73**	**0.461**	0.046	61.0	**15.7**
% Difference			20.7	1.3	3.0			0.7	4.8	-4.1	-0.2	52.2	2.0	-2.5
Tolerance (%)			***NR***	***0.2***	***0.95***	***NR***	***NR***	***12***	***NR***	***0.13***	***0.030***	***NR***	***NR***	***1.9***
Method Blank:														
Method Blank			<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1

S. No.	Sample ID	Analyte	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Method	**IMS-130**													
		Unit	**ppm**	**ppm**	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**%**	**ppm**	**ppm**	**%**	**ppm**
		MDL	**1**	**0.05**	**0.2**	**0.01**	**0.05**	**0.05**	**0.02**	**0.01**	**0.005**	**0.01**	**0.2**	**0.1**	**0.01**	**5**
		Sample Type														
1	B00293251	Rock Pulp	92	0.08	17.9	0.88	0.74	0.08	0.30	0.16	0.016	0.26	27.7	0.7	0.01	174
2	B00293252	Rock Pulp	72	0.16	10.5	1.73	1.79	0.16	0.19	0.01	0.005	0.37	43.5	3.2	0.02	317
3	B00293253	Rock Pulp	56	0.20	5.1	0.83	1.38	0.10	0.08	0.01	<0.005	0.40	18.3	4.5	0.03	580
4	B00293254	Rock Pulp	72	0.14	5.6	1.12	1.71	0.20	0.24	0.07	<0.005	0.32	57.1	2.3	0.04	35
5	B00293255	Rock Pulp	80	0.09	38.1	0.97	1.36	0.21	0.43	0.03	<0.005	0.25	62.6	1.1	0.01	175
6	B00293256	Rock Pulp	56	0.08	19.1	0.62	1.41	0.13	0.12	0.04	0.014	0.29	38.7	0.9	0.02	224
7	B00293257	Rock Pulp	48	0.09	2.1	0.54	1.35	0.15	0.21	0.02	<0.005	0.27	44.5	0.9	<0.01	160
8	B00293258	Rock Pulp	42	0.11	9.1	0.98	1.20	0.07	0.21	0.03	<0.005	0.40	8.8	2.0	0.03	41
9	B00293259	Rock Pulp	69	0.24	3.8	0.43	1.90	0.16	0.19	0.03	<0.005	0.44	41.3	2.8	0.07	925
10	B00293260	Rock Pulp	85	0.15	9.2	0.86	1.04	0.08	0.11	0.01	0.008	0.24	19.5	0.9	0.02	58
11	B00293261	Rock Pulp	104	0.16	6.0	1.18	0.83	0.10	0.20	0.21	0.030	0.21	26.9	1.1	<0.01	19
12	B00293262	Rock Pulp	109	0.17	6.5	0.67	1.27	0.13	0.14	0.05	<0.005	0.24	35.5	9.9	0.03	59
QUALITY ASSURANCE / QUALITY CONTROL																
Pulp Replicates:																
1	B00293251	Rock Pulp	92	0.08	17.9	0.88	0.74	0.08	0.30	0.16	0.016	0.26	27.7	0.7	0.01	174
1 R	B00293251 (Rep)	Rep	93	0.11	19.1	0.89	0.81	0.10	0.42	0.23	0.021	0.26	28.4	1.0	0.01	173
Reference Material																
STD OREAS 24b			103	9.26	36.5	3.96	10.83	0.24	0.55	<0.01	0.051	1.21	26.7	45.6	1.41	337
True Value STD OREAS 24b			**106**	**9.15**	**36.4**	**3.93**	**10.80**	0.26	0.52	<0.01	0.048	**1.17**	29.2	**45.6**	**1.36**	**350**
% Difference			-2.8	1.2	0.3	0.8	0.3	-7.7	5.8		6.2	3.4	-8.6	0.0	3.7	-3.7
Tolerance (%)			***9***	***0.56***	***3.3***	***0.21***	***1.1***	***NR***	***NR***	***NR***	***NR***	***0.07***	***NR***	***3.5***	***0.07***	***20***
Method Blank:																
Method Blank			<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5

Notes:
Job: MA0048-FEB16
Analytical Methods (IMS-130):
A 0.5 g of pulp sample is leached in hot (95°C) 3:1 aqua regia digestion followed by ICP Mass Spec analysis.
Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5 g).
Refractory and graphitic samples can limit Au solubility.
Abbreviations:
R / Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)
D / Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a second split of the original client sample received)
MDL = Measurable Detection Limit
IND = Indeterminate
On Tolerance:
Any one element in a run reporting outside tolerance limits does not constitute failure of the standard.
As per Certificate of Analysis (COA): All values indicated in green are indicative values only, not certified.
NR = Not Reported in the Certificate Of Analysis.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Method											
		Analyte	**Molybdenum (Mo)**	**Sodium (Na)**	**Niobium (Nb)**	**Nickel (Ni)**	**Phosphorous (P)**	**Lead (Pb)**	**Rubidium (Rb)**	**Rhenium (Re)**	**Sulphur (S)**	**Antimony (Sb)**	**Scandium (Sc)**
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1
		Sample Type											
1	B00293251	Rock Pulp	1.97	0.01	0.14	4.9	163	53.0	6.9	<0.001	0.86	0.93	0.4
2	B00293252	Rock Pulp	4.35	0.01	1.50	4.6	168	59.4	17.6	<0.001	1.78	2.12	0.4
3	B00293253	Rock Pulp	2.26	0.01	1.20	2.3	158	94.6	21.6	<0.001	0.76	0.99	0.3
4	B00293254	Rock Pulp	2.16	0.02	0.27	3.3	190	16.2	11.2	<0.001	1.08	0.57	0.4
5	B00293255	Rock Pulp	3.05	0.01	0.76	4.5	126	85.0	7.7	<0.001	0.93	1.90	0.4
6	B00293256	Rock Pulp	4.31	0.01	1.59	3.2	165	159.7	10.5	0.001	0.58	9.10	0.3
7	B00293257	Rock Pulp	2.50	0.01	0.93	2.7	171	6.7	8.5	<0.001	0.53	1.12	0.4
8	B00293258	Rock Pulp	13.11	0.01	1.18	4.7	245	10.6	11.9	<0.001	0.97	1.28	0.3
9	B00293259	Rock Pulp	3.22	0.01	0.41	2.3	154	32.3	26.6	<0.001	0.20	0.80	0.4
10	B00293260	Rock Pulp	5.22	0.02	0.76	4.0	130	15.8	7.9	<0.001	0.74	4.55	0.4
11	B00293261	Rock Pulp	3.27	0.01	0.72	3.7	121	18.5	6.1	<0.001	1.19	2.07	0.3
12	B00293262	Rock Pulp	0.80	0.01	0.21	3.6	148	7.1	7.3	<0.001	0.61	1.43	0.3
QUALITY ASSURANCE / QUALITY CONTROL													
Pulp Replicates:													
1	B00293251	Rock Pulp	1.97	0.01	0.14	4.9	163	53.0	6.9	<0.001	0.86	0.93	0.4
1 R	B00293251 (Rep)	Rep	1.99	0.01	0.27	4.6	159	55.7	7.9	<0.001	0.87	1.32	0.4
Reference Material													
STD OREAS 24b			4.00	0.11	0.44	58.1	621	9.10	116.1	<0.001	0.19	0.52	9.90
True Value STD OREAS 24b			**3.86**	**IND**	**0.31**	**57.0**	**620**	**9.23**	**114**	**<0.001**	**0.20**	**0.48**	**9.51**
% Difference			3.6		41.9	1.9	0.2	-1.4	1.8	0.0	-5.0	8.3	4.1
Tolerance (%)			***0.37***	***NR***	***N/B***	***5***	***NR***	***1.29***	***15***	***NR***	***0.02***	***NR***	***1.39***
Method Blank:													
Method Blank			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1

S. No.	Sample ID	Method																	
		Analyte	**Selenium (Se)**	**Tin (Sn)**	**Stronium (Sr)**	**Tantalum (Ta)**	**Tellurium (Te)**	**Thorium (Th)**	**Titanium (Ti)**	**Thallium (Tl)**	**Uranium (U)**	**Vandium (V)**	**Tungsten (W)**	**Yttrium (Y)**	**Zinc (Zn)**	**Zirconium (Zr)**
		Unit	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
		Sample Type														
1	B00293251	Rock Pulp	<0.2	<0.2	41.1	<0.01	0.04	18.2	<0.005	0.19	1.85	1	0.09	7.48	575	21.1
2	B00293252	Rock Pulp	<0.2	0.4	19.7	<0.01	<0.01	26.3	0.006	0.23	4.21	2	0.62	14.61	41	9.1
3	B00293253	Rock Pulp	<0.2	0.3	59.2	0.01	<0.01	21	0.005	0.27	2.61	2	0.68	16.21	24	4.2
4	B00293254	Rock Pulp	<0.2	<0.2	15.3	<0.01	0.02	31	<0.005	0.38	2.25	2	0.11	10.29	10	17.2
5	B00293255	Rock Pulp	<0.2	<0.2	30.3	<0.01	0.02	27.2	<0.005	0.3	4.49	1	0.19	11.55	47	20.4
6	B00293256	Rock Pulp	1.0	0.2	28.1	<0.01	0.03	24.2	0.006	1.02	4.88	2	0.48	18.02	69	5.7
7	B00293257	Rock Pulp	1.1	0.3	18.7	<0.01	0.02	31.6	<0.005	0.54	4.91	1	0.07	14.21	24	10.2
8	B00293258	Rock Pulp	<0.2	<0.2	9.6	<0.01	<0.01	28.3	0.007	0.71	4.51	2	0.37	15.67	11	16.9
9	B00293259	Rock Pulp	<0.2	<0.2	128.2	0.01	<0.01	27.1	0.006	0.26	2.38	2	0.30	11.52	45	15.8
10	B00293260	Rock Pulp	1.0	0.2	7.4	<0.01	<0.01	21.1	<0.005	0.37	3.28	2	0.14	8.78	25	5.9
11	B00293261	Rock Pulp	<0.2	<0.2	5.6	<0.01	<0.01	19.1	<0.005	0.13	2.94	1	0.26	9.13	189	9.5
12	B00293262	Rock Pulp	<0.2	<0.2	25.5	<0.01	<0.01	25.9	<0.005	0.29	1.56	2	0.07	9.46	6	7.1
QUALITY ASSURANCE / QUALITY CONTROL																
Pulp Replicates:																
1	B00293251	Rock Pulp	<0.2	<0.2	41.1	<0.01	0.04	18.2	<0.005	0.19	1.85	1	0.09	7.48	575	21.1
1 R	B00293251 (Rep)	Rep	<0.2	<0.2	41.7	<0.01	<0.01	19.7	<0.005	0.26	2.13	1	0.10	8.32	579	20.7
Reference Material																
STD OREAS 24b			<0.2	2.40	29.7	0.01	<0.01	14.5	0.196	0.67	1.74	79	1.30	12.40	96	26.4
True Value STD OREAS 24b			**0.42**	**2.26**	**29.0**	**<0.05**	**<0.02**	**14.3**	**0.198**	**0.66**	**1.74**	**79**	**1.19**	**12.30**	**93**	**24.5**
% Difference				6.2	2.4			1.4	-1.0	1.5	0.0	0.0	9.2	0.8	3.2	7.8
Tolerance (%)			***NR***	***0.30***	***NR***	***NR***	***NR***	***1.1***	***0.017***	***0.08***	***0.26***	***5***	***NR***	***1.7***	***6***	***3.2***
Method Blank:																
Method Blank			<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5

CERTIFICATE OF ANALYSIS ▪ MEND-SHAKE FLASK EXTRACTION RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

Parameter	Method	Unit	RDL	1	6	10	11	11 R	Method Blank
				B00293251	B00293256	B00293260	B00293261	B00293261 (Rep)	
Weight of dry sample used	Weighing Scale	g	0.01	250	250	250	250		N/A
Volume of DI water used	Graduated Cylinder	mL	0.50	750	750	750	750		750
On filtered samples using 0.45 micron filter paper									
pH	pH Meter	pH units	0.01	9.1	9.2	8.4	8.5	8.5	5.7
EC	EC Meter	µS/cm	1	65	55	125	76	79	0.89
Acidity (to pH 8.3)	Titration/Calc.	mg CaCO3/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
Alkalinity (to pH 4.5)	Titration/Calc.	mg CaCO3/L	0.5	17.5	18.5	26.0	14.0	14.2	1.0
Dissolved Sulphate (SO4)	Turbidimetry	mg/L	1	6	5	30	18	19	<1
Dissolved Metals Analysis by ICP-MS:									
Hardness, Total (as CaCO3)	ICP-MS	mg/L	0.1	18	16	44	24		<0.1
Aluminum, dissolved	ICP-MS	mg/L	0.001	0.213	0.228	0.064	0.094		<0.001
Antimony, dissolved	ICP-MS	mg/L	0.00005	0.00857	0.00813	0.01	0.00373		<0.00005
Arsenic, dissolved	ICP-MS	mg/L	0.00005	0.00268	0.00364	0.00025	0.00088		<0.00005
Barium, dissolved	ICP-MS	mg/L	0.0001	0.0107	0.0054	0.0231	0.0177		<0.0001
Beryllium, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001
Bismuth, dissolved	ICP-MS	mg/L	0.00001	<0.00001	0.00002	<0.00001	<0.00001		<0.00001
Boron, dissolved	ICP-MS	mg/L	0.001	0.003	0.002	0.001	0.002		<0.001
Cadmium, dissolved	ICP-MS	mg/L	0.000002	0.000002	0.000003	0.000003	0.000003		<0.000002
Calcium, dissolved	ICP-MS	mg/L	0.04	6.66	5.76	12.6	6.78		<0.040
Chromium, dissolved	ICP-MS	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001
Cobalt, dissolved	ICP-MS	mg/L	0.000005	0.000008	0.00001	0.00047	0.000037		<0.000005
Copper, dissolved	ICP-MS	mg/L	0.0001	0.0005	0.000	0.001	0.001		<0.0001
Iron, dissolved	ICP-MS	mg/L	0.002	0.004	0.005	<0.002	0.002		<0.002
Lead, dissolved	ICP-MS	mg/L	0.00005	0.00049	0.00088	0.00014	0.00016		<0.00005
Lithium, dissolved	ICP-MS	mg/L	0.00005	0.00075	0.00061	0.00155	0.00155		<0.00005
Magnesium, dissolved	ICP-MS	mg/L	0.005	0.423	0.388	3	1.64		<0.005
Manganese, dissolved	ICP-MS	mg/L	0.00005	0.00522	0.00386	0.0286	0.00738		<0.00005
Mercury, dissolved	ICP-MS	mg/L	0.0002	<0.000004	<0.000004	<0.000004	<0.000004		<0.000004
Molybdenum, dissolved	ICP-MS	mg/L	0.00001	0.00068	0.00065	0.00054	0.0006		<0.00001
Nickel, dissolved	ICP-MS	mg/L	0.00002	0.00014	0.00009	0.00103	0.00029		<0.00002
Phosphorus, dissolved	ICP-MS	mg/L	0.01	<0.010	<0.010	<0.010	<0.010		<0.010
Potassium, dissolved	ICP-MS	mg/L	0.01	3.25	3.21	2.37	2.4		<0.010
Selenium, dissolved	ICP-MS	mg/L	0.0001	0.0023	0.0021	0.0005	0.0002		<0.0001
Silicon, dissolved	ICP-MS	mg/L	0.05	1.38	1.04000	0.54300	0.93700		<0.050
Silver, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	0.00001	<0.00001		<0.00001
Sodium, dissolved	ICP-MS	mg/L	0.01	0.375	0.171	0.249	0.255		<0.010
Strontium, dissolved	ICP-MS	mg/L	0.0001	0.0283	0.0177	0.092	0.0638		<0.0001
Sulphur, dissolved	ICP-MS	mg/L	0.5	2.76	1.87	8.68	5.48		<0.500
Tellurium, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005
Thallium, dissolved	ICP-MS	mg/L	0.000004	0.000045	0.000098	0.000335	0.000029		<0.000004
Thorium, dissolved	ICP-MS	mg/L	0.00001	0.00004	0.00004	<0.00001	<0.00001		<0.00001
Tin, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	0.00009	<0.00005		<0.00005
Titanium, dissolved	ICP-MS	mg/L	0.0002	0.0002	0.0002	<0.0002	<0.0002		<0.0002
Uranium, dissolved	ICP-MS	mg/L	0.000001	0.00177	0.000909	0.005470	0.001850		<0.000001
Vanadium, dissolved	ICP-MS	mg/L	0.0002	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002
Zinc, dissolved	ICP-MS	mg/L	0.001	<0.001	<0.001	<0.001	<0.001		<0.001
Zirconium, dissolved	ICP-MS	mg/L	0.00002	0.00003	0.00009	0.00004	0.00003		<0.00002
Ion Balance									
Major Anions	Calc.	meq/L		0.48	0.47	1.15	0.66	0.68	
Major Cations	Calc.	meq/L		0.49	0.44	0.96	0.56		
Difference	Calc.	meq/L		-0.02	0.04	0.19	0.10		
Balance (%)	Calc.	%		-1.7%	4.3%	8.9%	8.0%		
			Shake Flask Extract ID:	*6040077-01*	*6040077-02*	*6040077-03*	*6040077-04*		*6040077-05*

Notes:
Job No: 6040077
Date of Analysis (24h): 30/31-March, 2016.
pH of DI water used (pH Units): 5.60
EC of DI water used (µS/cm): 0.41

Abbreviations:
R / Rep = Replicate (which involves the analysis of the same Shake Flask Extract aliquot).
D / Dup = Duplicate (which involves the analysis of a 2nd SF extract, produced by processing a separate split of the original client sample received).
EC = Electrical Conductivity
ORP = Oxidation Reduction Potential
RDL = Reportable Detection Limit.
Calc. = Calculation

Method Reference: Prediction Manual for Drainage Chemistry from Sulphidic Geologic Material, MEND Report 1.20.1; Version 0 - Dec. 2009. Section 11.5; P 11 (8-9).
Extraction Method used: Using Gyratory Shaker for 24 h (± 2 h - gentle agitation).
Liquid:Solid ratio used: 3:1; 750 mL DI H_2O: 250 g of crushed <1/4 inch (<6.3 mm) material.

CERTIFICATE OF ANALYSIS ▪ MEND-SFE QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

Sulphate:

Parameter	Reference Material	% Recovery	Matrix Spike %	QC Limits
STD Mineral Water (10.5 mg/L)	10.2	97.1%		85 - 110
Method Blank + Spike Recovery (19.61 mg.L)	21.30		108.6%	85 - 110

Dissolved Metals by ICP-MS:

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6040077_B6D0347-BLK1	Aluminum dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.001	mg/L		
6040077_B6D0347-BLK1	Antimony dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040077_B6D0347-BLK1	Arsenic dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040077_B6D0347-BLK1	Barium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0001	mg/L		
6040077_B6D0347-BLK1	Beryllium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040077_B6D0347-BLK1	Bismuth dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040077_B6D0347-BLK1	Boron dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.001	mg/L		
6040077_B6D0347-BLK1	Cadmium dissolved	<	0.000002	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.000002	mg/L		
6040077_B6D0347-BLK1	Calcium dissolved	<	0.04	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.04	mg/L		
6040077_B6D0347-BLK1	Chromium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0001	mg/L		
6040077_B6D0347-BLK1	Cobalt dissolved	<	0.000005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.000005	mg/L		
6040077_B6D0347-BLK1	Copper dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0001	mg/L		
6040077_B6D0347-BLK1	Iron dissolved	<	0.002	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.002	mg/L		
6040077_B6D0347-BLK1	Lead dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040077_B6D0347-BLK1	Lithium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040077_B6D0347-BLK1	Magnesium dissolved	<	0.005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.005	mg/L		
6040077_B6D0347-BLK1	Manganese dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040077_B6D0347-BLK1	Mercury dissolved	<	0.000004	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.000004	mg/L		
6040077_B6D0347-BLK1	Molybdenum dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040077_B6D0347-BLK1	Nickel dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00002	mg/L		
6040077_B6D0347-BLK1	Phosphorus dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.01	mg/L		
6040077_B6D0347-BLK1	Potassium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.01	mg/L		
6040077_B6D0347-BLK1	Selenium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0001	mg/L		
6040077_B6D0347-BLK1	Silicon dissolved	<	0.05	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.05	mg/L		
6040077_B6D0347-BLK1	Silver dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040077_B6D0347-BLK1	Sodium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.01	mg/L		
6040077_B6D0347-BLK1	Strontium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0001	mg/L		
6040077_B6D0347-BLK1	Sulfur dissolved	<	0.5	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.5	mg/L		
6040077_B6D0347-BLK1	Tellurium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040077_B6D0347-BLK1	Thallium dissolved	<	0.000004	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.000004	mg/L		
6040077_B6D0347-BLK1	Thorium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040077_B6D0347-BLK1	Tin dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040077_B6D0347-BLK1	Titanium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0002	mg/L		
6040077_B6D0347-BLK1	Uranium dissolved	<	0.000001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.000001	mg/L		
6040077_B6D0347-BLK1	Vanadium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0002	mg/L		
6040077_B6D0347-BLK1	Zinc dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.001	mg/L		
6040077_B6D0347-BLK1	Zirconium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040077_B6D0347-SRM1	Aluminum dissolved		108	%	F	metals	APHA 3125 B	7-Apr-16	1	%	142	58
6040077_B6D0347-SRM1	Antimony dissolved		114	%	F	metals	APHA 3125 B	7-Apr-16	1	%	125	75
6040077_B6D0347-SRM1	Arsenic dissolved		102	%	F	metals	APHA 3125 B	7-Apr-16	1	%	119	81
6040077_B6D0347-SRM1	Barium dissolved		105	%	F	metals	APHA 3125 B	7-Apr-16	1	%	117	83
6040077_B6D0347-SRM1	Beryllium dissolved		101	%	F	metals	APHA 3125 B	7-Apr-16	1	%	120	80
6040077_B6D0347-SRM1	Boron dissolved		109	%	F	metals	APHA 3125 B	7-Apr-16	1	%	117	74
6040077_B6D0347-SRM1	Cadmium dissolved		102	%	F	metals	APHA 3125 B	7-Apr-16	1	%	117	83
6040077_B6D0347-SRM1	Calcium dissolved		107	%	F	metals	APHA 3125 B	7-Apr-16	1	%	124	76
6040077_B6D0347-SRM1	Chromium dissolved		101	%	F	metals	APHA 3125 B	7-Apr-16	1	%	119	81
6040077_B6D0347-SRM1	Cobalt dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	124	76
6040077_B6D0347-SRM1	Copper dissolved		109	%	F	metals	APHA 3125 B	7-Apr-16	1	%	116	84
6040077_B6D0347-SRM1	Iron dissolved		105	%	F	metals	APHA 3125 B	7-Apr-16	1	%	126	74
6040077_B6D0347-SRM1	Lead dissolved		109	%	F	metals	APHA 3125 B	7-Apr-16	1	%	128	72
6040077_B6D0347-SRM1	Lithium dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	140	60
6040077_B6D0347-SRM1	Magnesium dissolved		105	%	F	metals	APHA 3125 B	7-Apr-16	1	%	119	81
6040077_B6D0347-SRM1	Manganese dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	116	84
6040077_B6D0347-SRM1	Molybdenum dissolved		106	%	F	metals	APHA 3125 B	7-Apr-16	1	%	117	83
6040077_B6D0347-SRM1	Nickel dissolved		103	%	F	metals	APHA 3125 B	7-Apr-16	1	%	126	74
6040077_B6D0347-SRM1	Phosphorus dissolved		100	%	F	metals	APHA 3125 B	7-Apr-16	1	%	132	68
6040077_B6D0347-SRM1	Potassium dissolved		102	%	F	metals	APHA 3125 B	7-Apr-16	1	%	126	74
6040077_B6D0347-SRM1	Selenium dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	130	70
6040077_B6D0347-SRM1	Sodium dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	128	72
6040077_B6D0347-SRM1	Strontium dissolved		100	%	F	metals	APHA 3125 B	7-Apr-16	1	%	113	84
6040077_B6D0347-SRM1	Thallium dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	143	57
6040077_B6D0347-SRM1	Uranium dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	115	85
6040077_B6D0347-SRM1	Vanadium dissolved		100	%	F	metals	APHA 3125 B	7-Apr-16	1	%	113	87
6040077_B6D0347-SRM1	Zinc dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	128	72

Notes:
Job No: 6040077
BLK = Method Blank
EQL = Estimated Quantitation Limits
PQL = Practical Quantitation Limits
UCL = Upper Control Limit
LCL = Lower Control Limit
SRM = Standard Reference Materials

QUANTITATIVE PHASE ANALYSIS OF 20 POWDER SAMPLES USING THE RIETVELD METHOD AND X-RAY POWDER DIFFRACTION DATA.

Project: BMC-15-03 (COC-1 x203 New 2015 Core Samples)
Sample Received: Nov. 23, 2015

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February 26, 2016

EXPERIMENTAL METHOD

The twenty samples of **Project *BMC-15-03*** were reduced to the optimum grain-size range for quantitative X-ray analysis (<10 μm) by grinding under ethanol in a vibratory McCrone Micronising Mill for 10 minutes. Step-scan X-ray powder-diffraction data were collected over a range 3-80°2θ with CoKα radiation on a Bruker D8 Advance Bragg-Brentano diffractometer equipped with an Fe monochromator foil, 0.6 mm (0.3°) divergence slit, incident- and diffracted-beam Soller slits and a LynxEye-XE detector. The long fine-focus Co X-ray tube was operated at 35 kV and 40 mA, using a take-off angle of 6°.

RESULTS

The X-ray diffractograms were analyzed using the International Centre for Diffraction Database PDF-4 and Search-Match software by Bruker. X-ray powder-diffraction data of the samples were refined with Rietveld program Topas 4.2 (Bruker AXS). The results of quantitative phase analysis by Rietveld refinements are given in Table 1 (separate file, ***Global ARD Testing Services Results Feb 26 2016 – Project BMC-15-03 – 20 samples.xlsx***). These amounts represent the relative amounts of crystalline phases normalized to 100%. The Rietveld refinement plots are shown in Figures 1-20. Ideal formulae of the mineral phases present are shown in Table 2.

Table 2.

Mineral	**Ideal Formula**
Anatase	TiO_2
Ankerite-Dolomite	$Ca(Fe^{2+},Mg,Mn)(CO_3)_2/CaMg(CO_3)_2$
Arsenopyrite	FeAsS
Biotite	$K(Mg,Fe^{2+})_3AlSi_3O_{10}(OH)_2$
Calcite	$CaCO_3$
Clinochlore	$(Mg,Fe^{2+})_5Al(Si_3Al)O_{10}(OH)_8$
Galena	PbS
Grossular	$Ca_3Al_2(SiO_4)_3$
Hematite	α-Fe_2O_3
Ilmenite	$Fe^{2+}TiO_3$
Kaolinite	$Al_2Si_2O_5(OH)_4$
K-feldspar	$KAlSi_3O_8$
Marcasite	FeS_2
Muscovite 2M1	$KAl_2AlSi_3O_{10}(OH)_2$
Plagioclase	$NaAlSi_3O_8$ – $CaAl_2Si_2O_8$
Pyrite	FeS_2
Pyrrhotite	$Fe_{1-x}S$
Quartz	SiO_2
Rutile	TiO_2
Siderite	$Fe^{2+}CO_3$
Sphalerite	(Zn,Fe)S
Titanite	$CaTiSiO_5$

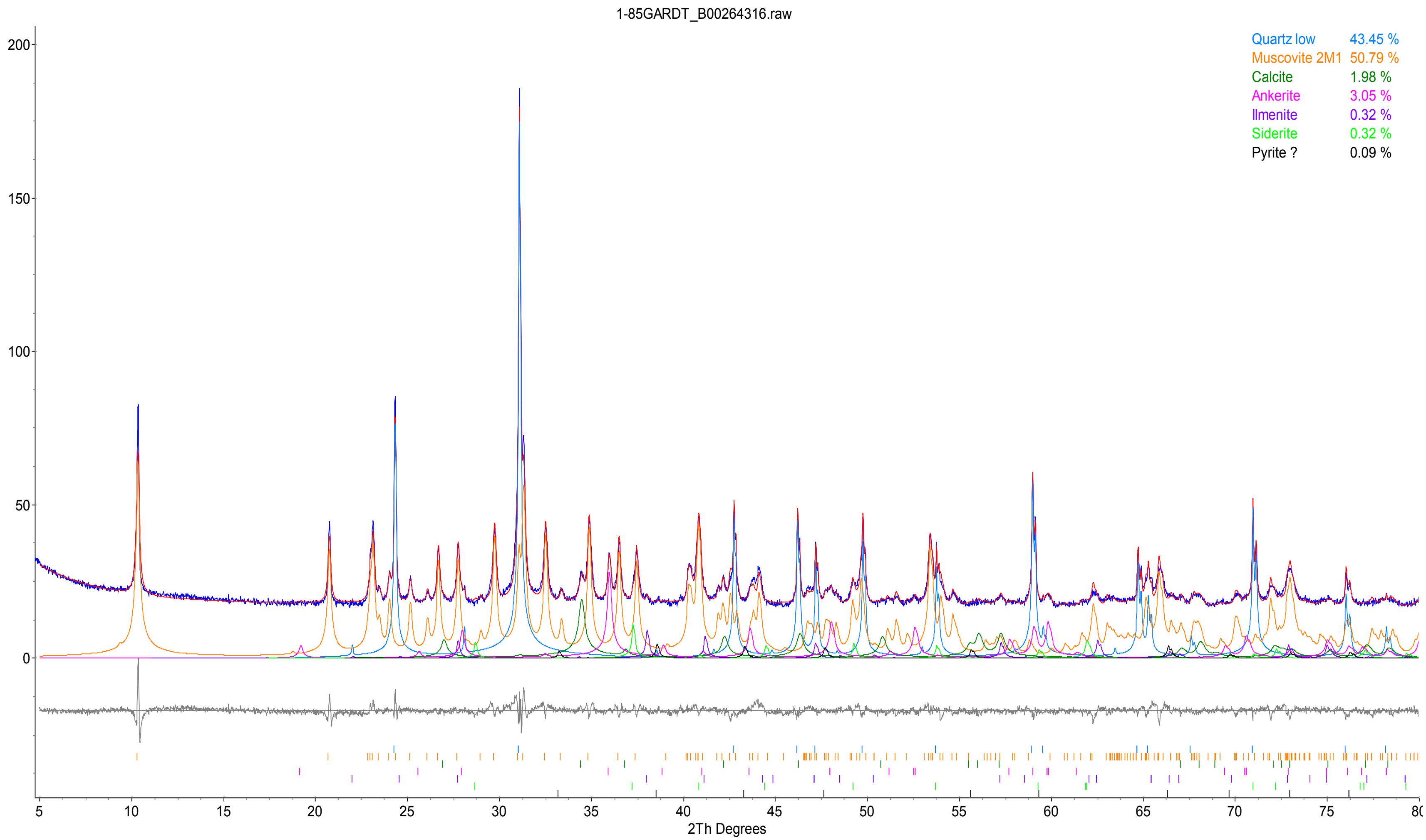

Figure 1. Rietveld refinement plot of sample **Global ARD Testing Services 85: B00264316** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

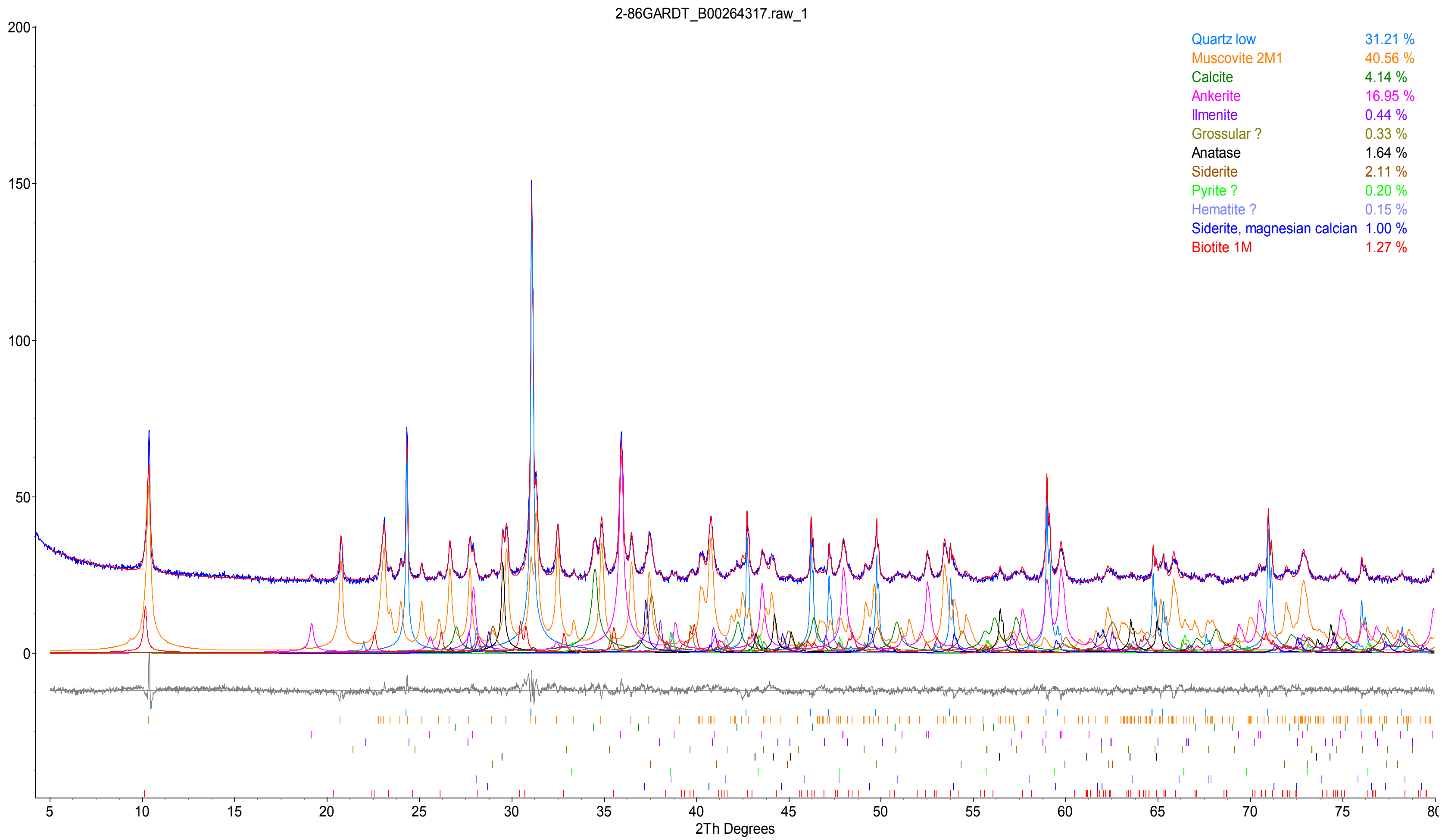

Figure 2. Rietveld refinement plot of sample **Global ARD Testing Services 86: B00264317** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

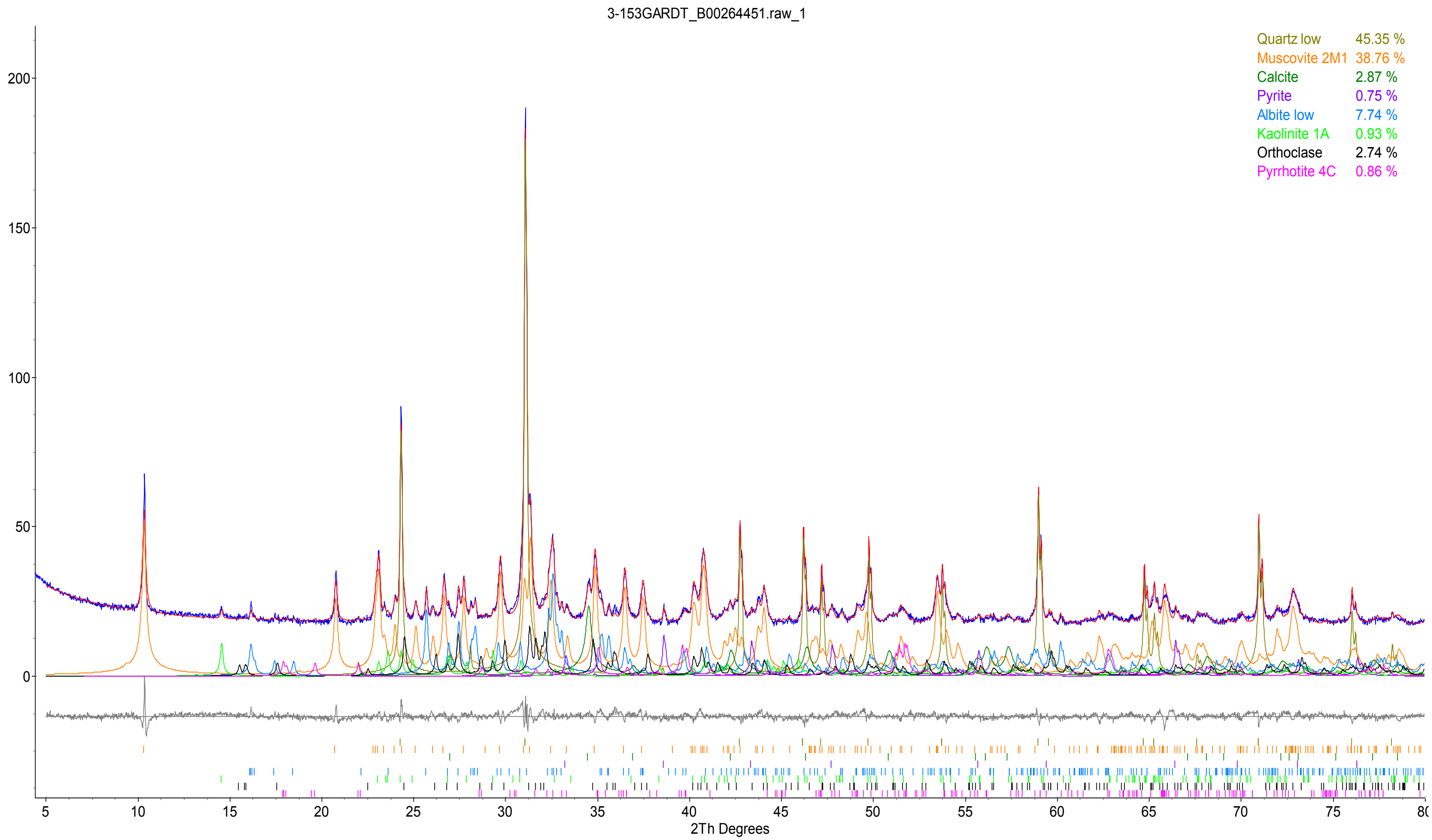

Figure 3. Rietveld refinement plot of sample **Global ARD Testing Services 153: B00264451** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

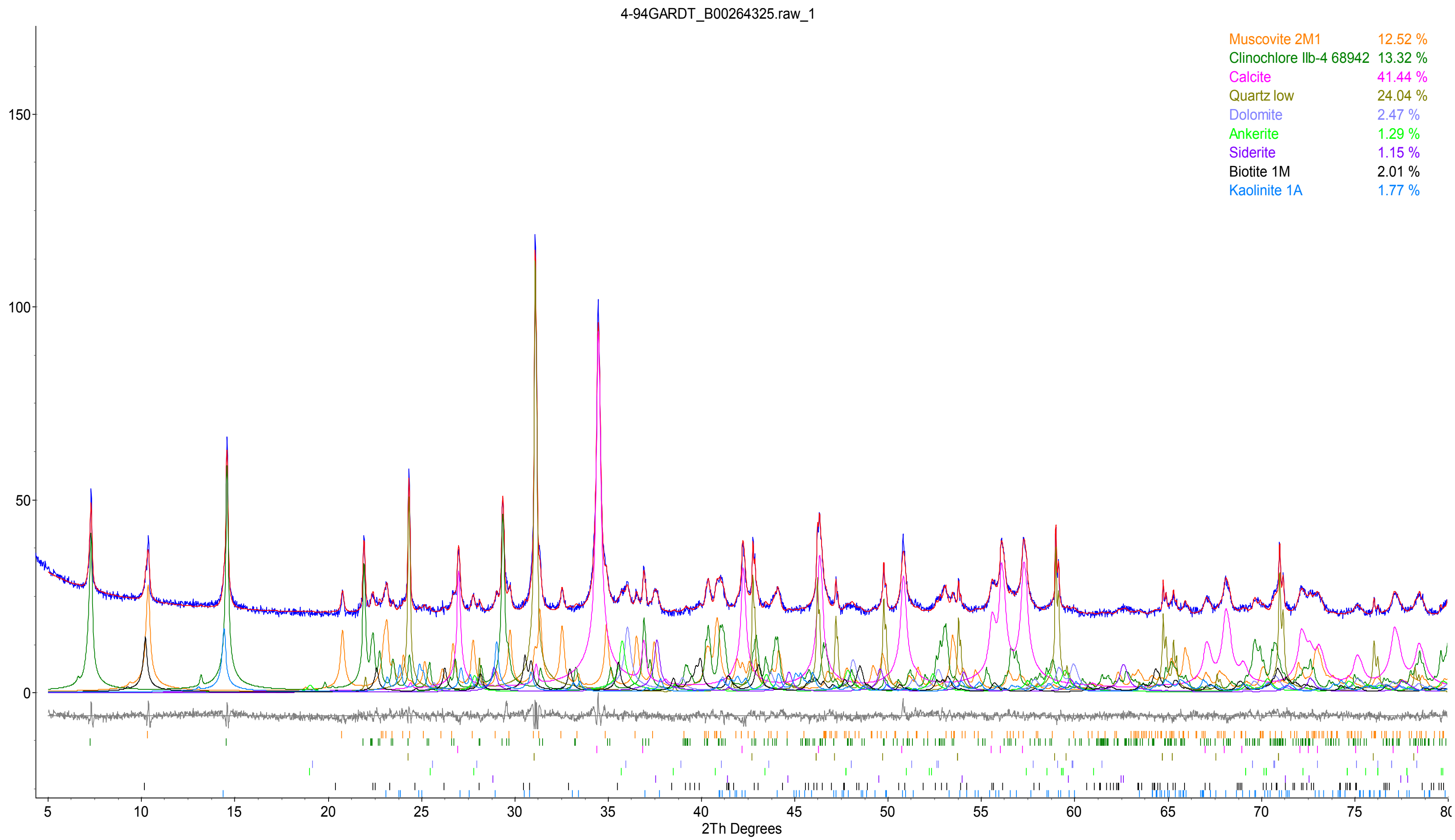

Figure 4. Rietveld refinement plot of sample **Global ARD Testing Services 94: B00264325** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

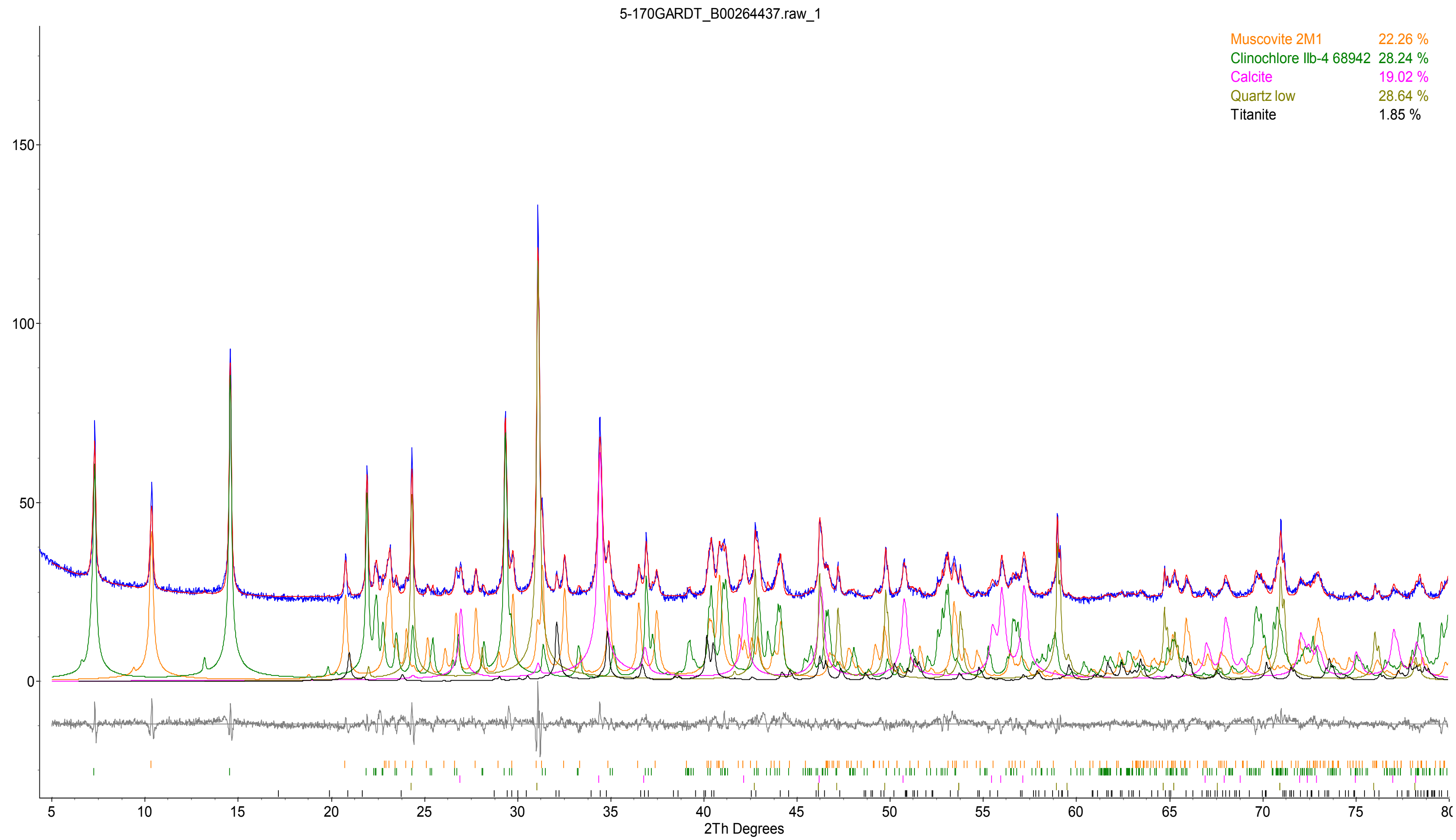

Figure 5. Rietveld refinement plot of sample **Global ARD Testing Services 170: B00264437** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

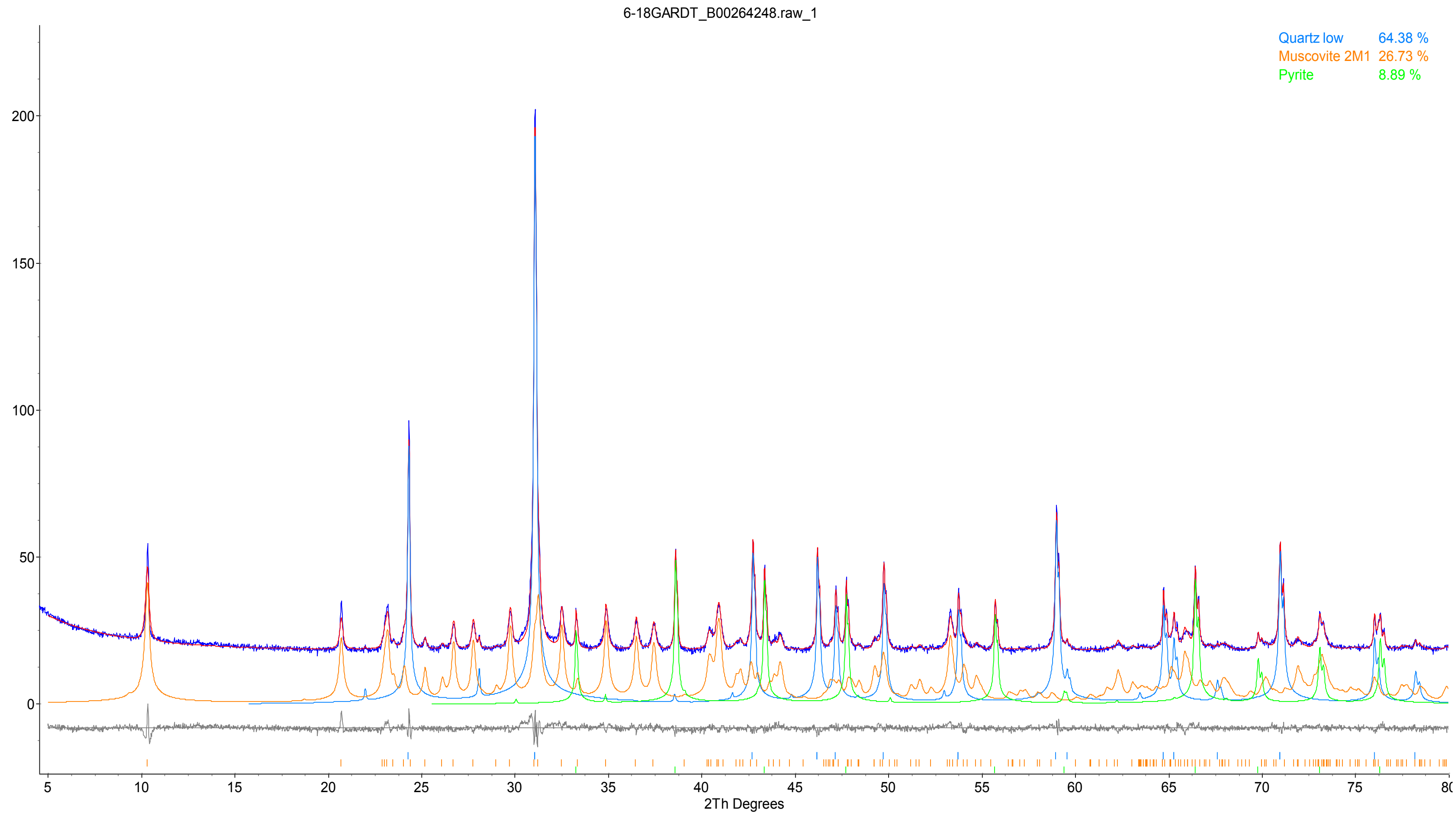

Figure 6. Rietveld refinement plot of sample **Global ARD Testing Services 18:** *B00264248* (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

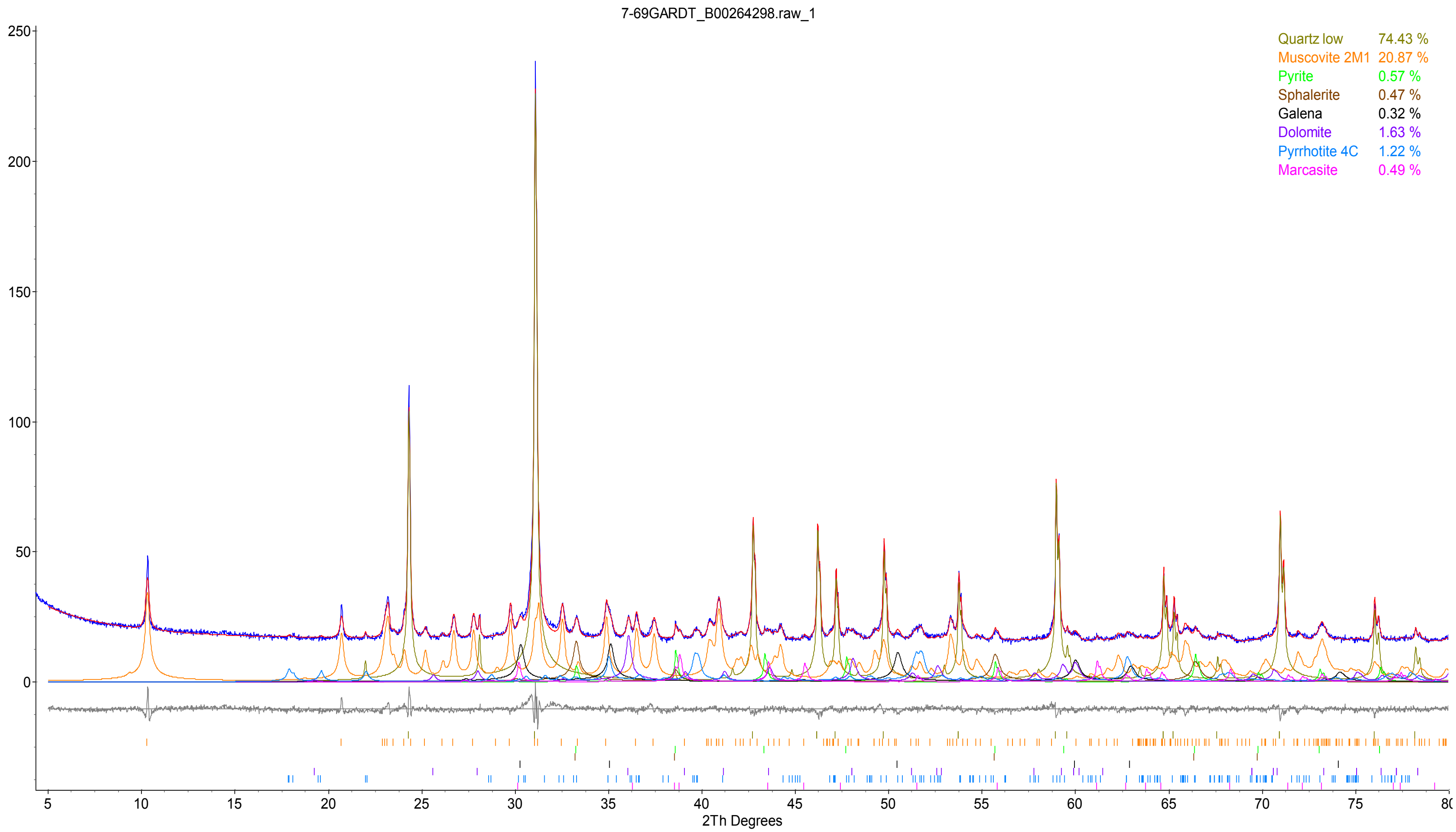

Figure 7. Rietveld refinement plot of sample **Global ARD Testing Services 69: B00264298** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

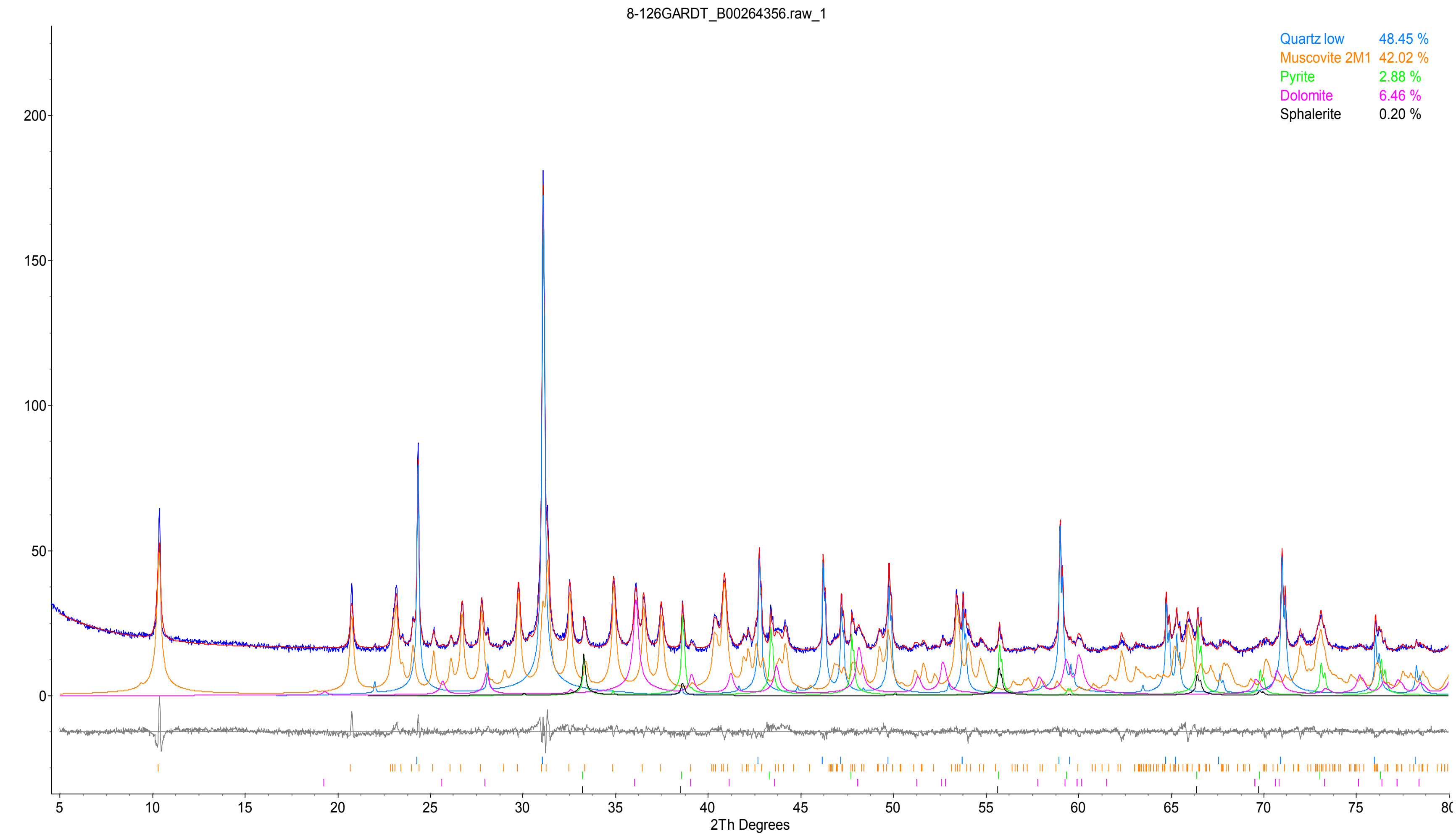

Figure 8. Rietveld refinement plot of sample **Global ARD Testing Services 126: B00264356** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

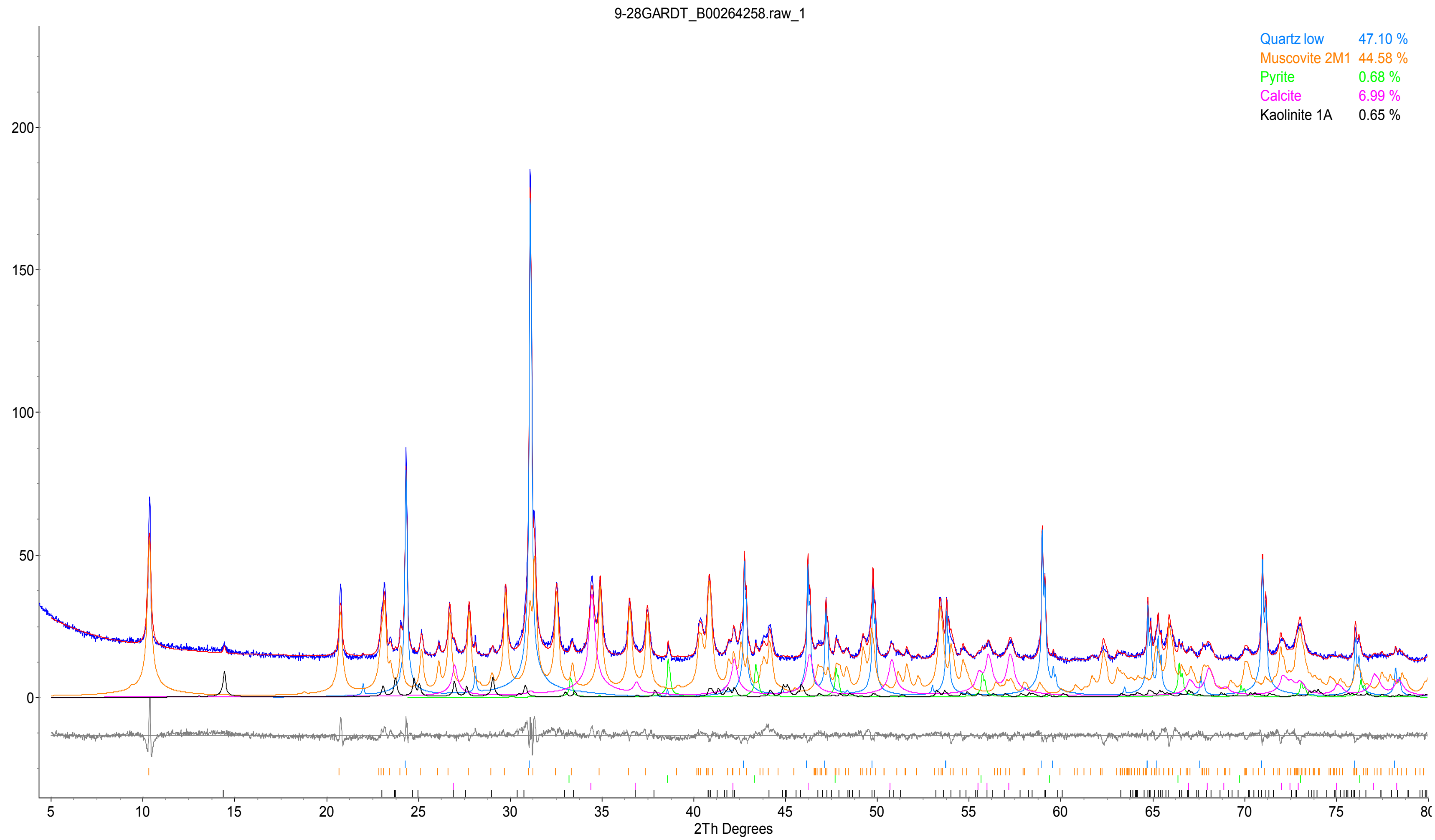

Figure 9. Rietveld refinement plot of sample **Global ARD Testing Services 28: B00264258** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

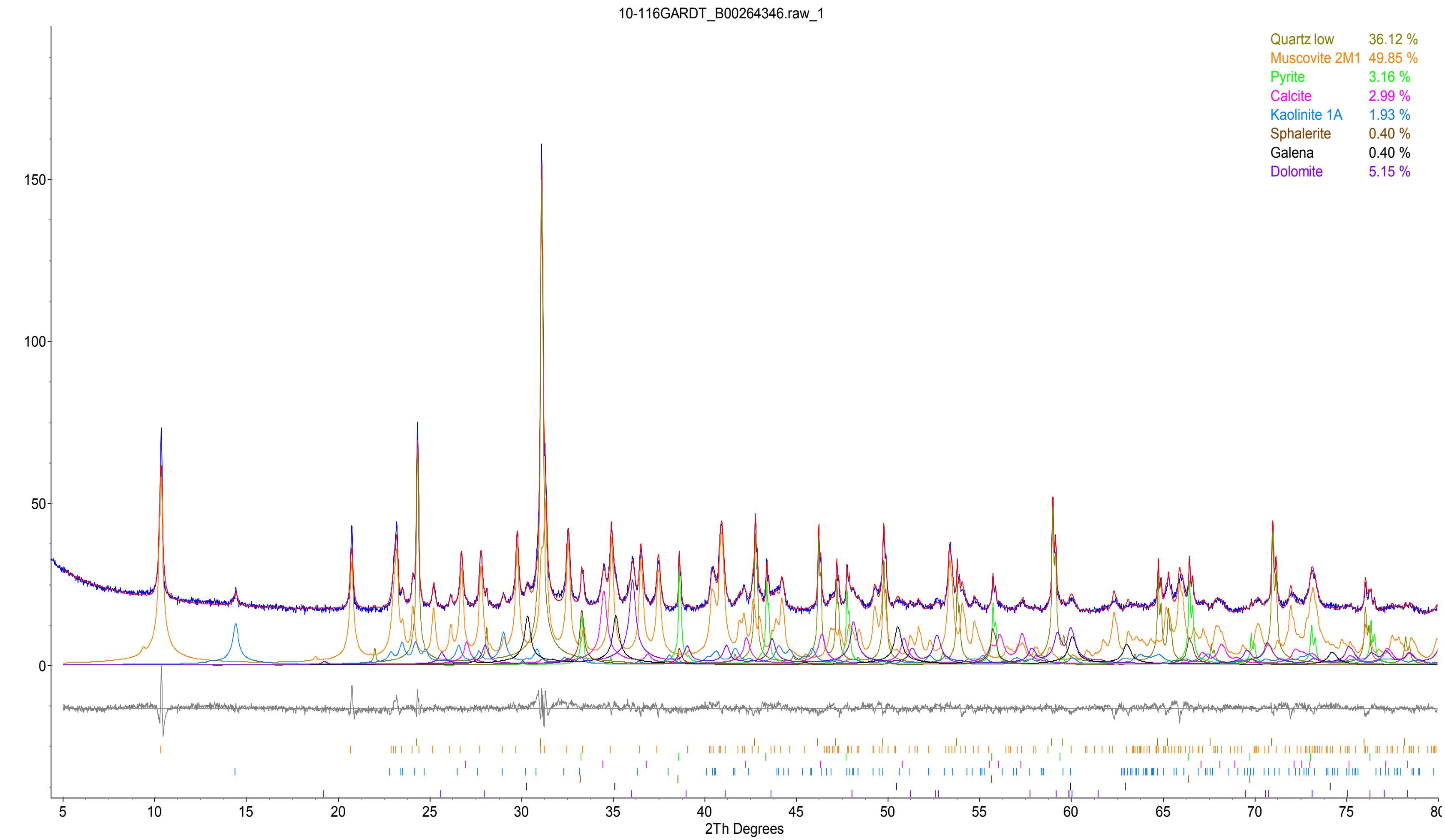

Figure 10. Rietveld refinement plot of sample **Global ARD Testing Services 116: B00264346** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

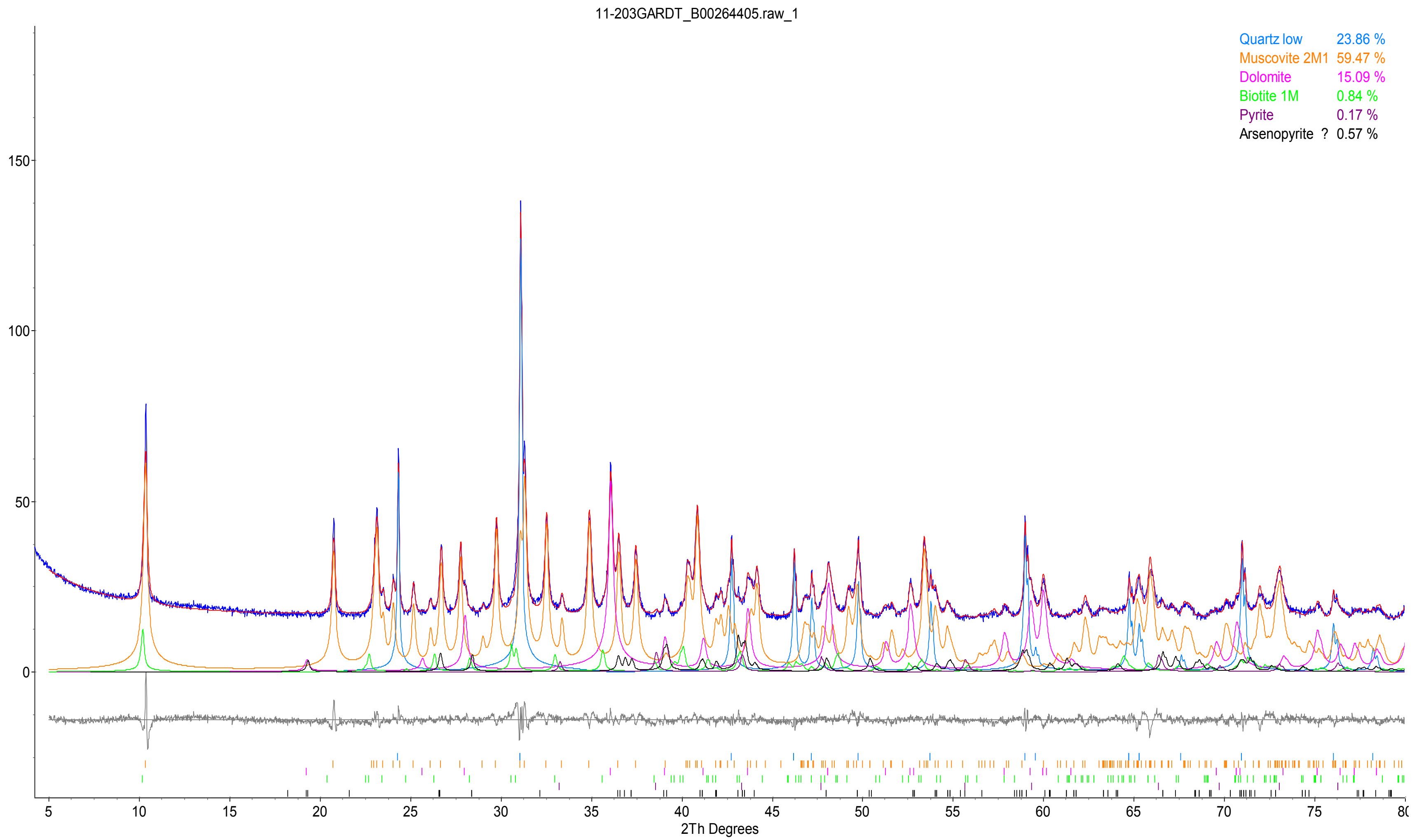

Figure 11. Rietveld refinement plot of sample **Global ARD Testing Services 203: B00264405** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

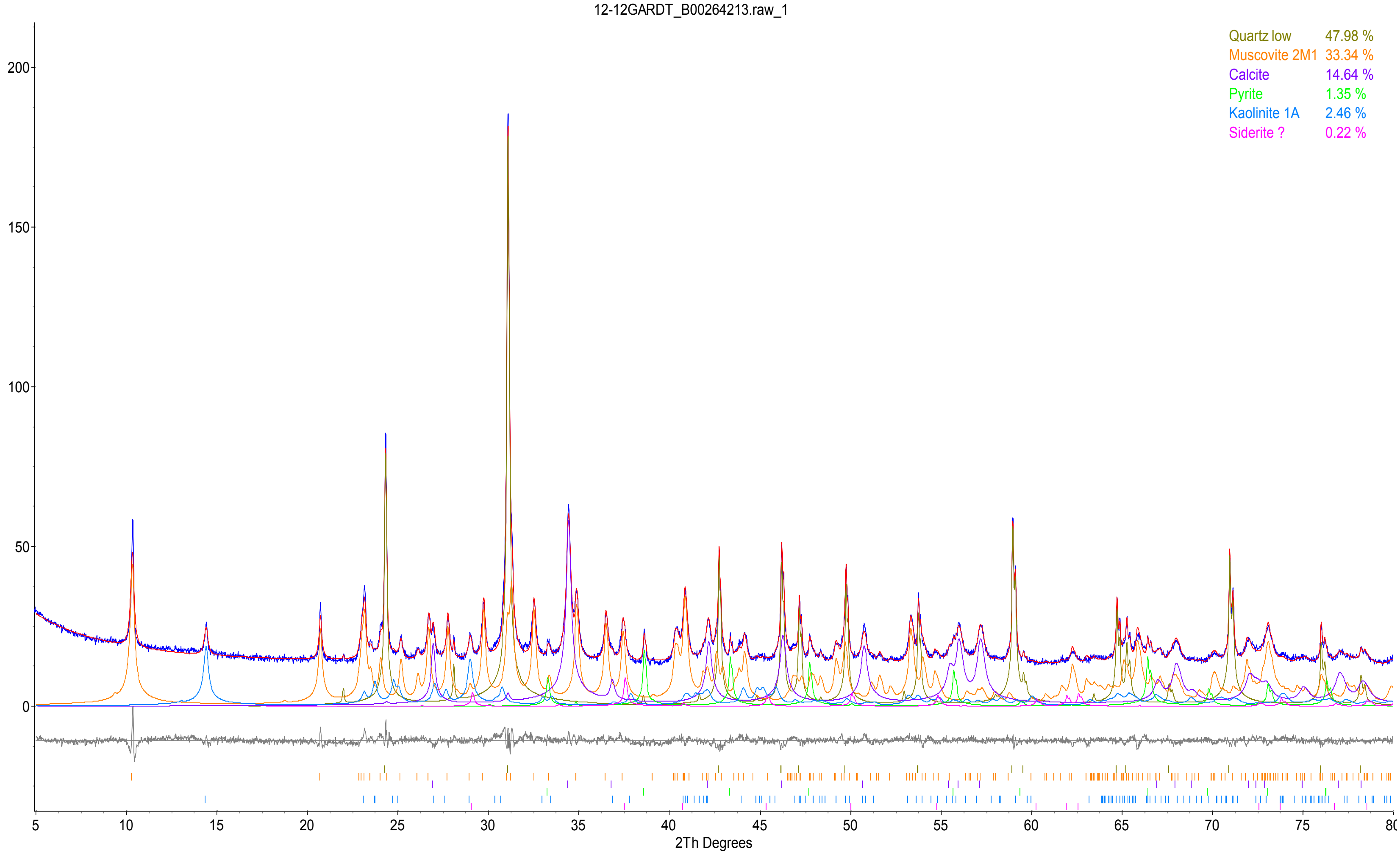

Figure 12. Rietveld refinement plot of sample **Global ARD Testing Services 12: B00264213** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

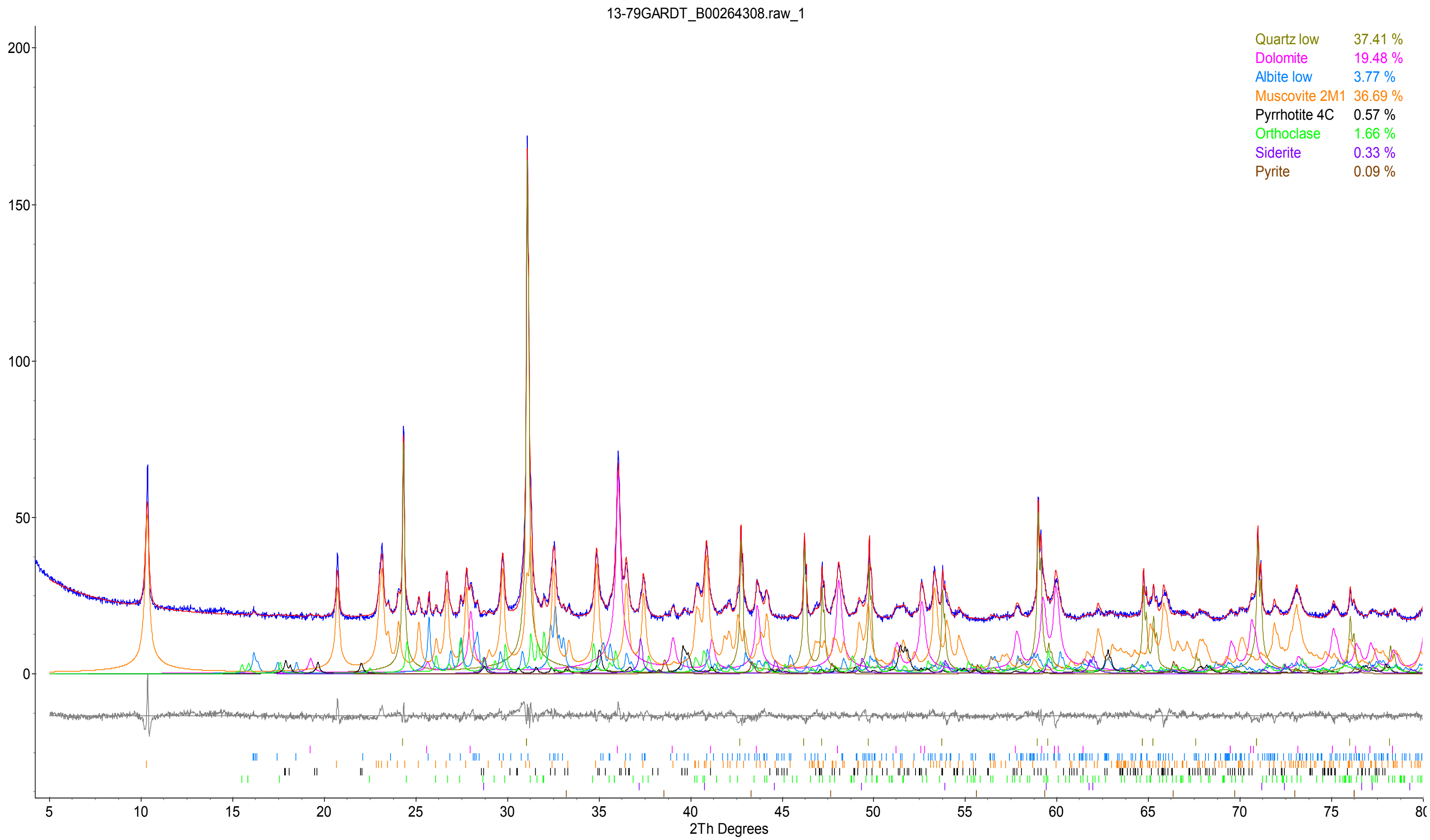

Figure 13. Rietveld refinement plot of sample **Global ARD Testing Services 79: B00264308** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

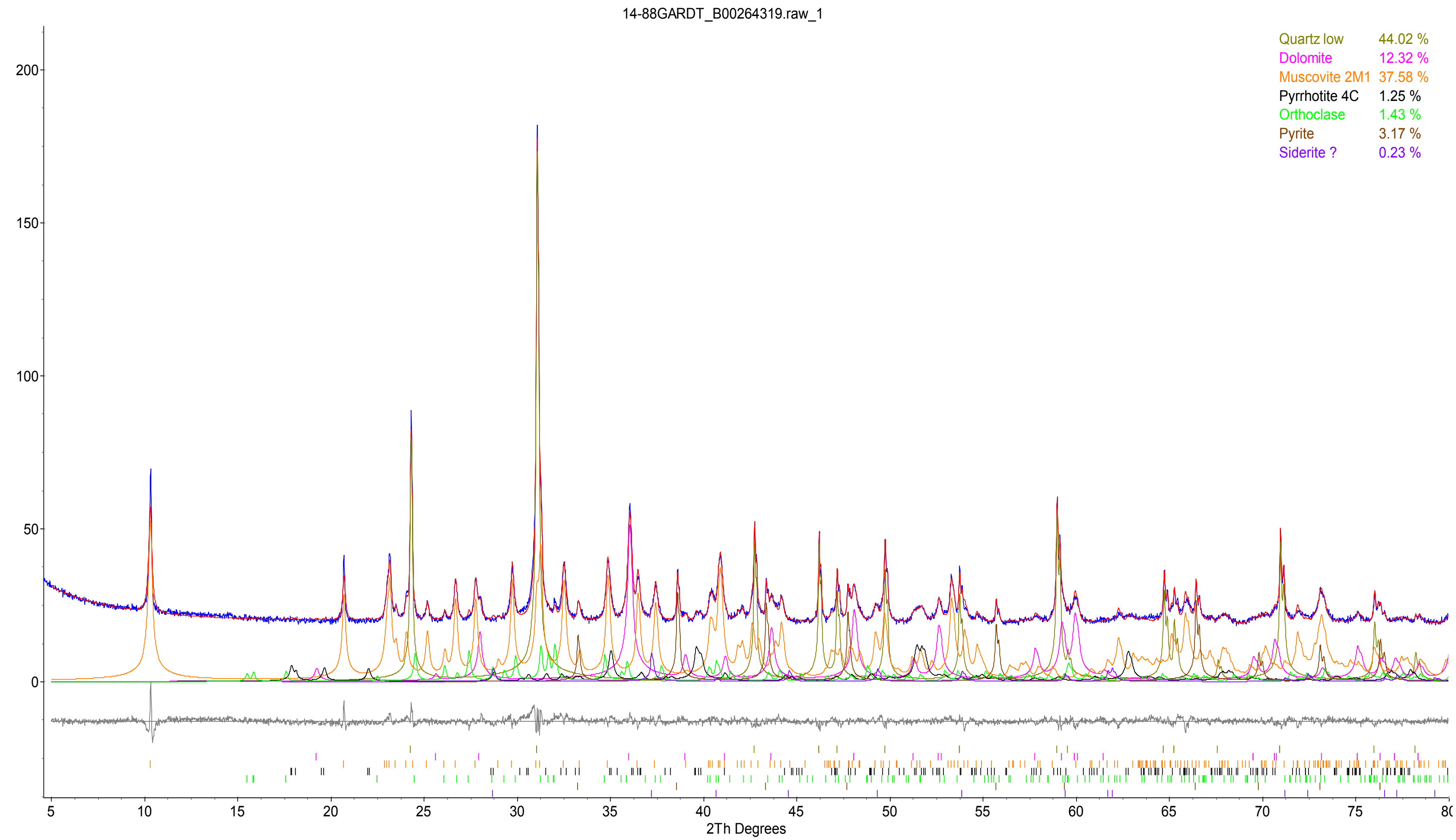

Figure 14. Rietveld refinement plot of sample **Global ARD Testing Services 88: B00264319** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

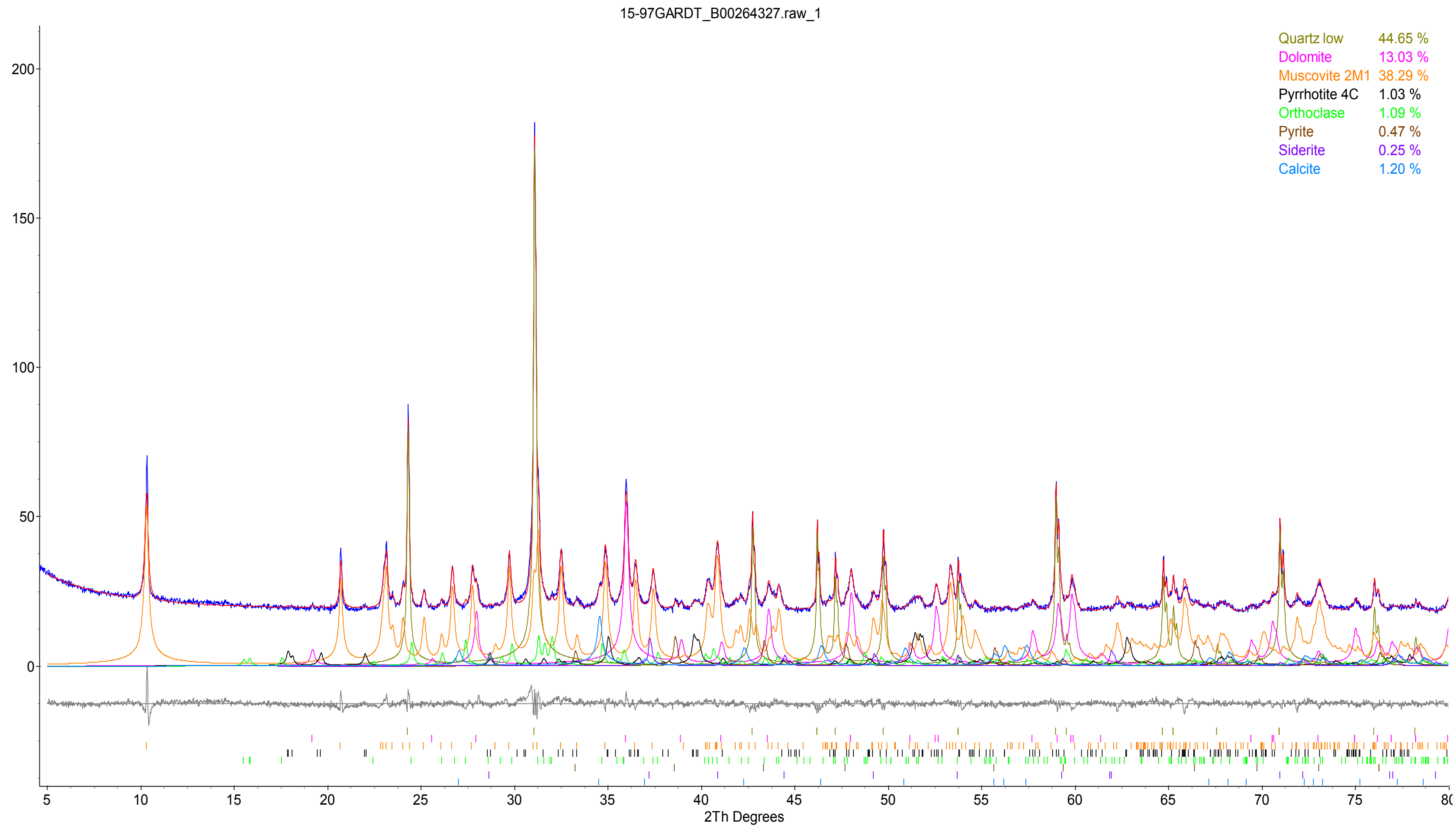

Figure 15. Rietveld refinement plot of sample **Global ARD Testing Services 97: B00264327** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

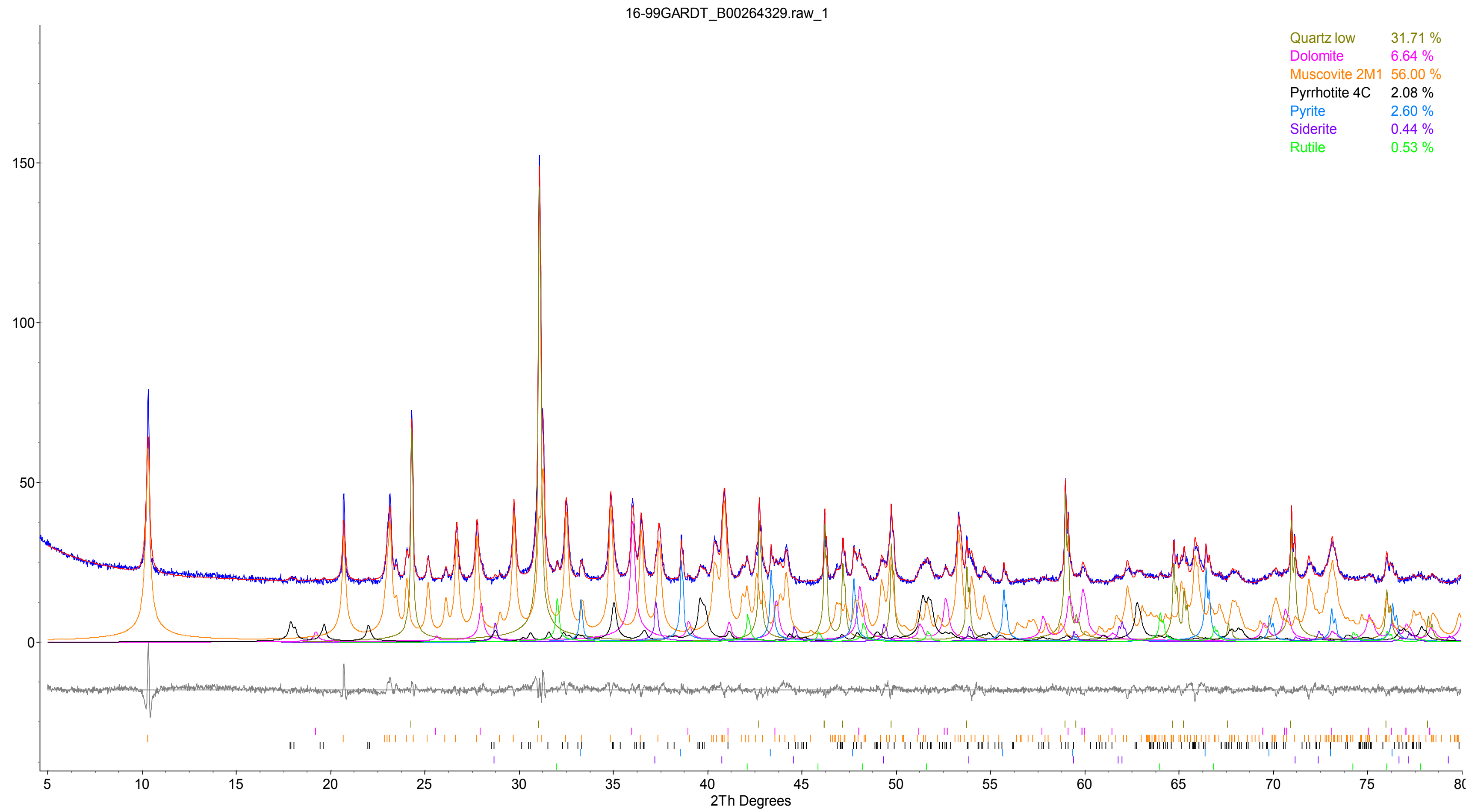

Figure 16. Rietveld refinement plot of sample **Global ARD Testing Services 99: B00264329** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

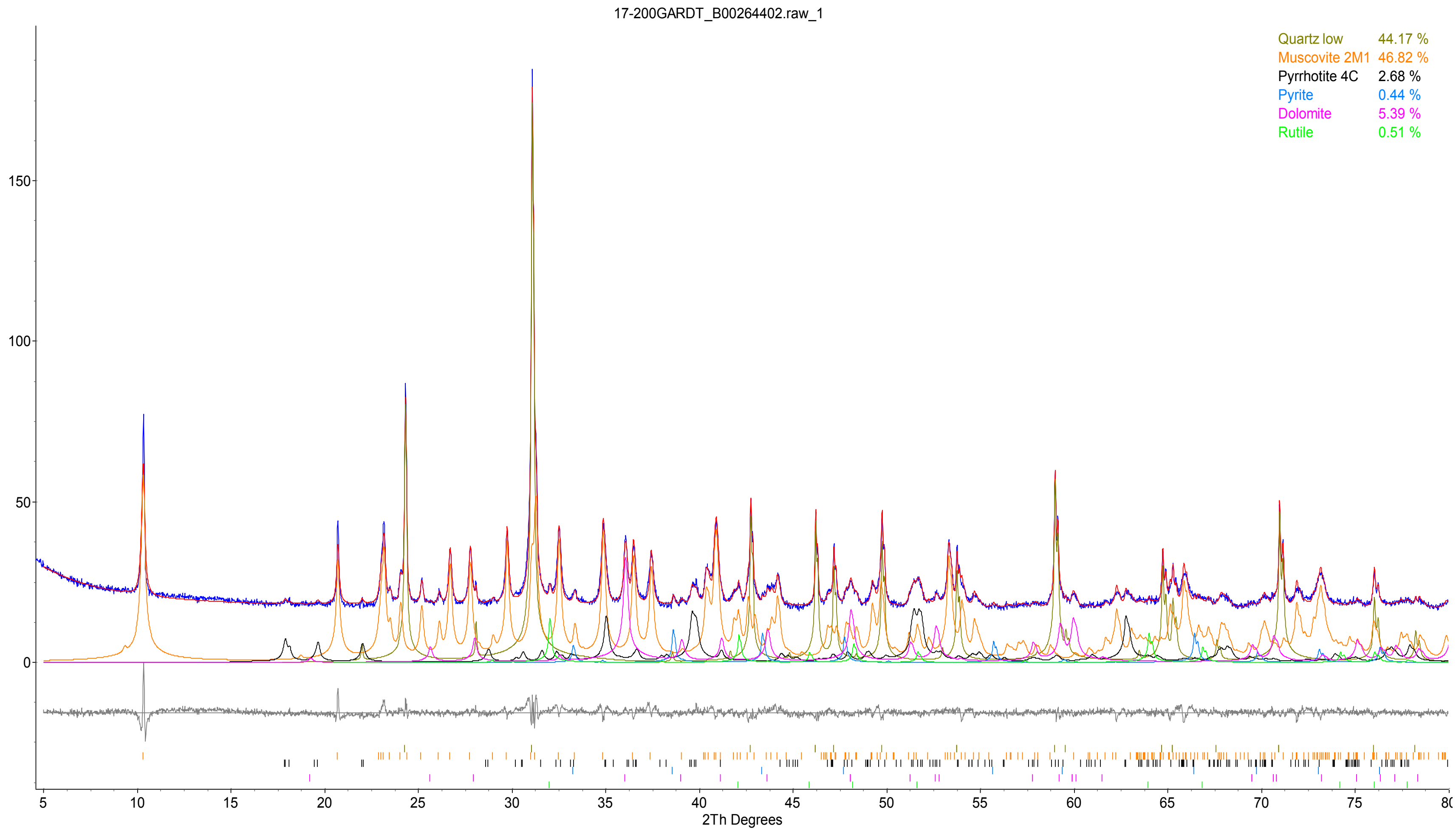

Figure 17. Rietveld refinement plot of sample **Global ARD Testing Services 200: B00264402** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

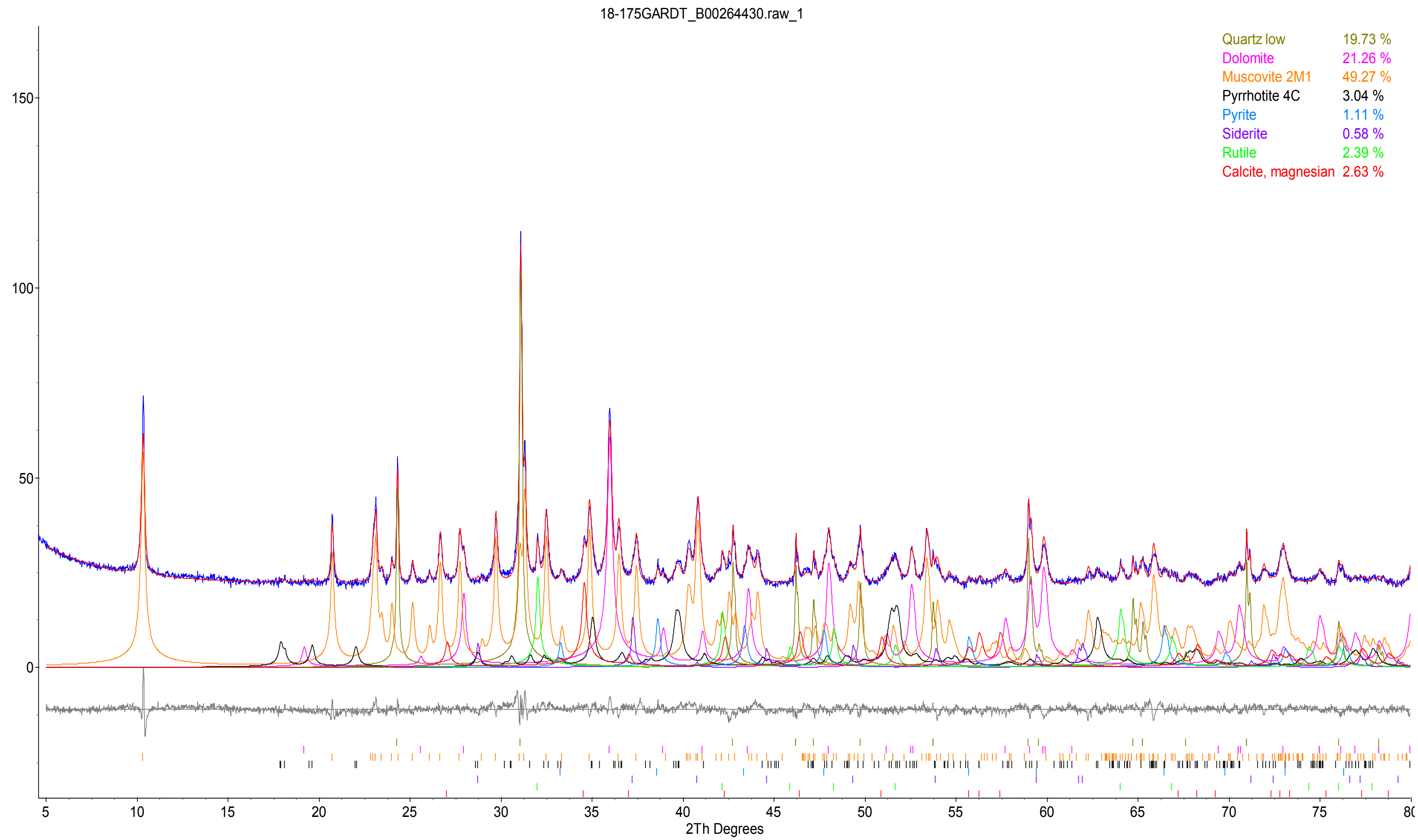

Figure 18. Rietveld refinement plot of sample **Global ARD Testing Services 175: B00264430** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

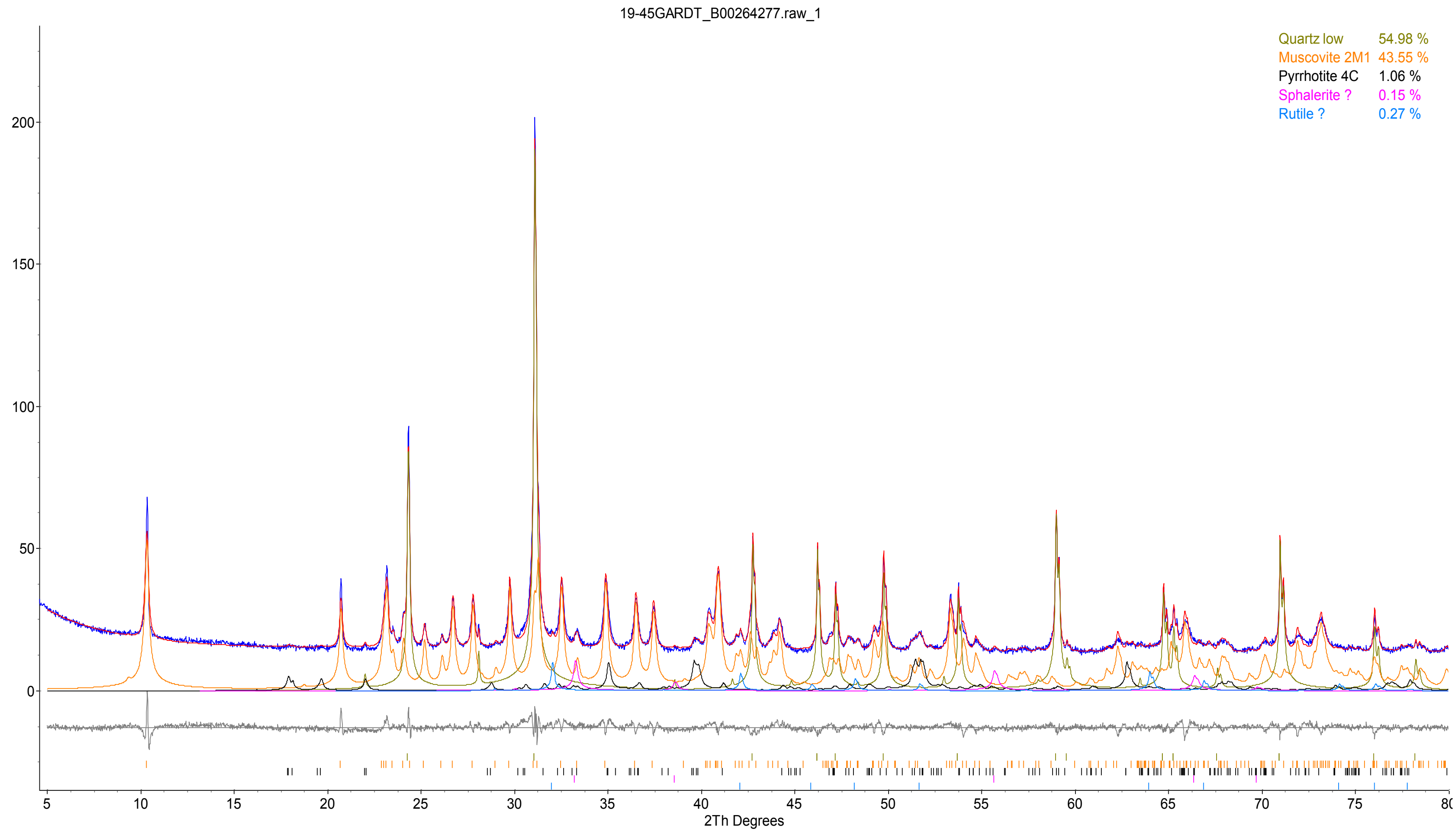

Figure 19. Rietveld refinement plot of sample **Global ARD Testing Services 45: B00264277** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

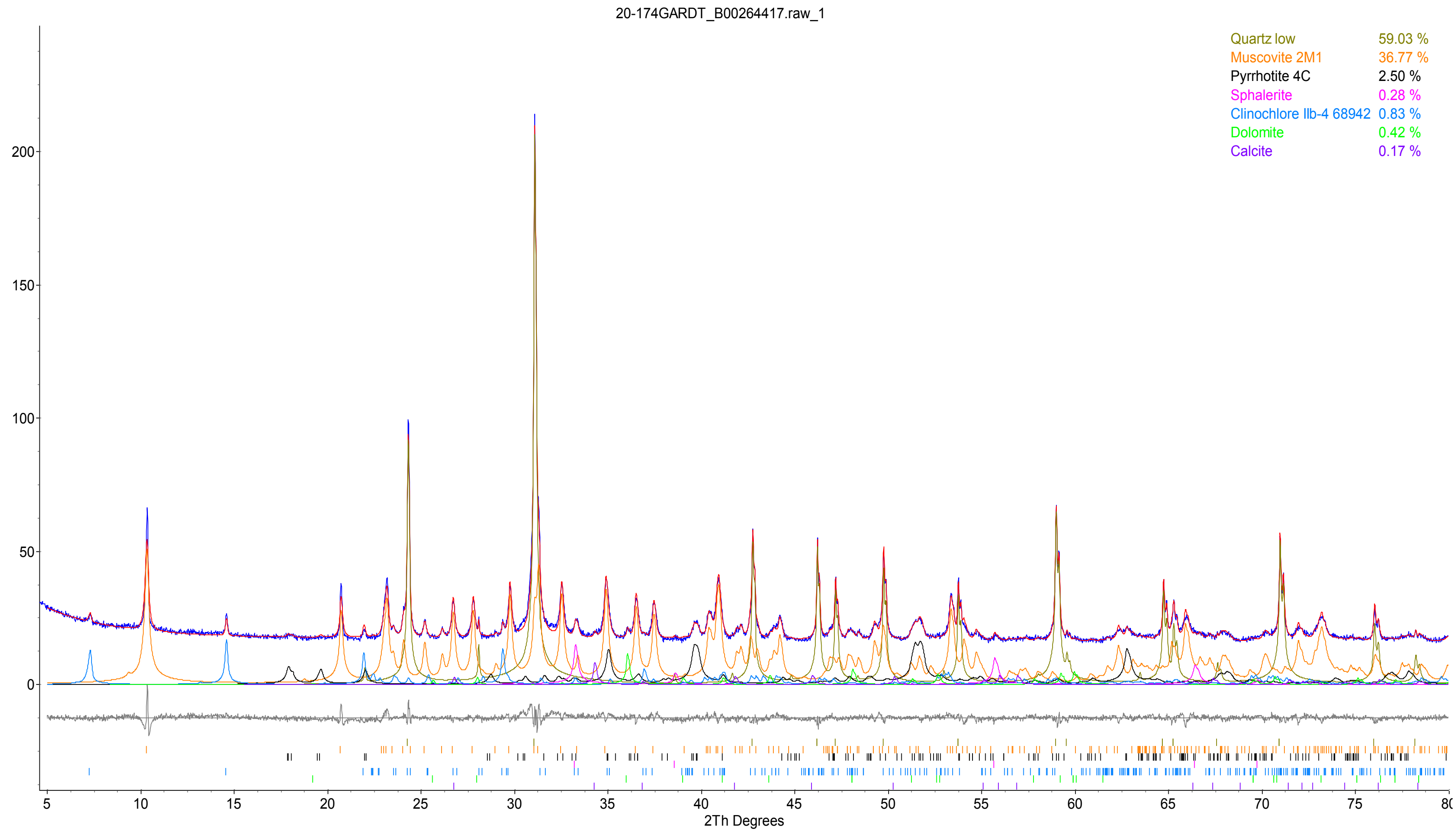

Figure 20. Rietveld refinement plot of sample **Global ARD Testing Services 20: B00264417** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

QUANTITATIVE PHASE ANALYSIS OF 4 POWDER SAMPLES USING THE RIETVELD METHOD AND X-RAY POWDER DIFFRACTION DATA.

Project: #1522 - BMC-15-03

Ivy Rajan
Global ARD Testing Services Inc.
6891 Antrim Avenue
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Mati Raudsepp, Ph.D.
Elisabetta Pani, Ph.D.
Edith Czech, M.Sc.
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Dept. of Earth, Ocean & Atmospheric Sciences
The University of British Columbia
6339 Stores Road
Vancouver, BC V6T 1Z4

September 8, 2016

EXPERIMENTAL METHOD

The four samples of **Project #1522 – BMC-15-03** were reduced to the optimum grain-size range for quantitative X-ray analysis (<10 μm) by grinding under ethanol in a vibratory McCrone Micronising Mill for 10 minutes. Step-scan X-ray powder-diffraction data were collected over a range 3-80°2θ with CoKα radiation on a Bruker D8 Advance Bragg-Brentano diffractometer equipped with an Fe monochromator foil, 0.6 mm (0.3°) divergence slit, incident- and diffracted-beam Soller slits and a LynxEye-XE detector. The long fine-focus Co X-ray tube was operated at 35 kV and 40 mA, using a take-off angle of 6°.

RESULTS

The X-ray diffractograms were analyzed using the International Centre for Diffraction Database PDF-4 and Search-Match software by Bruker. X-ray powder-diffraction data of the samples were refined with Rietveld program Topas 4.2 (Bruker AXS). The results of quantitative phase analysis by Rietveld refinements are given in Table 1. (separate file, ***Global ARD Testing Services Results Sept 8 2016 – Project 1522 – BMC-15-03- 4 samples.xlsx***). These amounts represent the relative amounts of crystalline phases normalized to 100%. The Rietveld refinement plots are shown in Figures 1 – 4. Ideal formulae of the mineral phases present are shown in Table 2.

Table 2.

Mineral	**Ideal Formula**
Ankerite-Dolomite	$Ca(Fe^{2+},Mg,Mn)(CO_3)_2$-$CaMg(CO_3)_2$
Calcite	$CaCO_3$
Clinochlore	$(Mg,Fe^{2+})_5Al(Si_3Al)O_{10}(OH)_8$
Illite-Muscovite 2M1	$K_{0.65}Al_{2.0}Al_{0.65}Si_{3.35}O_{10}(OH)_2$-$KAl_2AlSi_3O_{10}(OH)_2$
Kaolinite	$Al_2Si_2O_5(OH)_4$
K-feldspar (Microcline)	$KaAlSi_3O_8$
Phlogopite	$KMg_3(AlSi_3O_{10})(OH)_2$
Plagioclase	$NaAlSi_3O_8$ – $CaAl_2Si_2O_8$
Pyrite	FeS_2
Pyrrhotite	$Fe_{1-x}S$
Quartz	SiO_2
Rutile	TiO_2

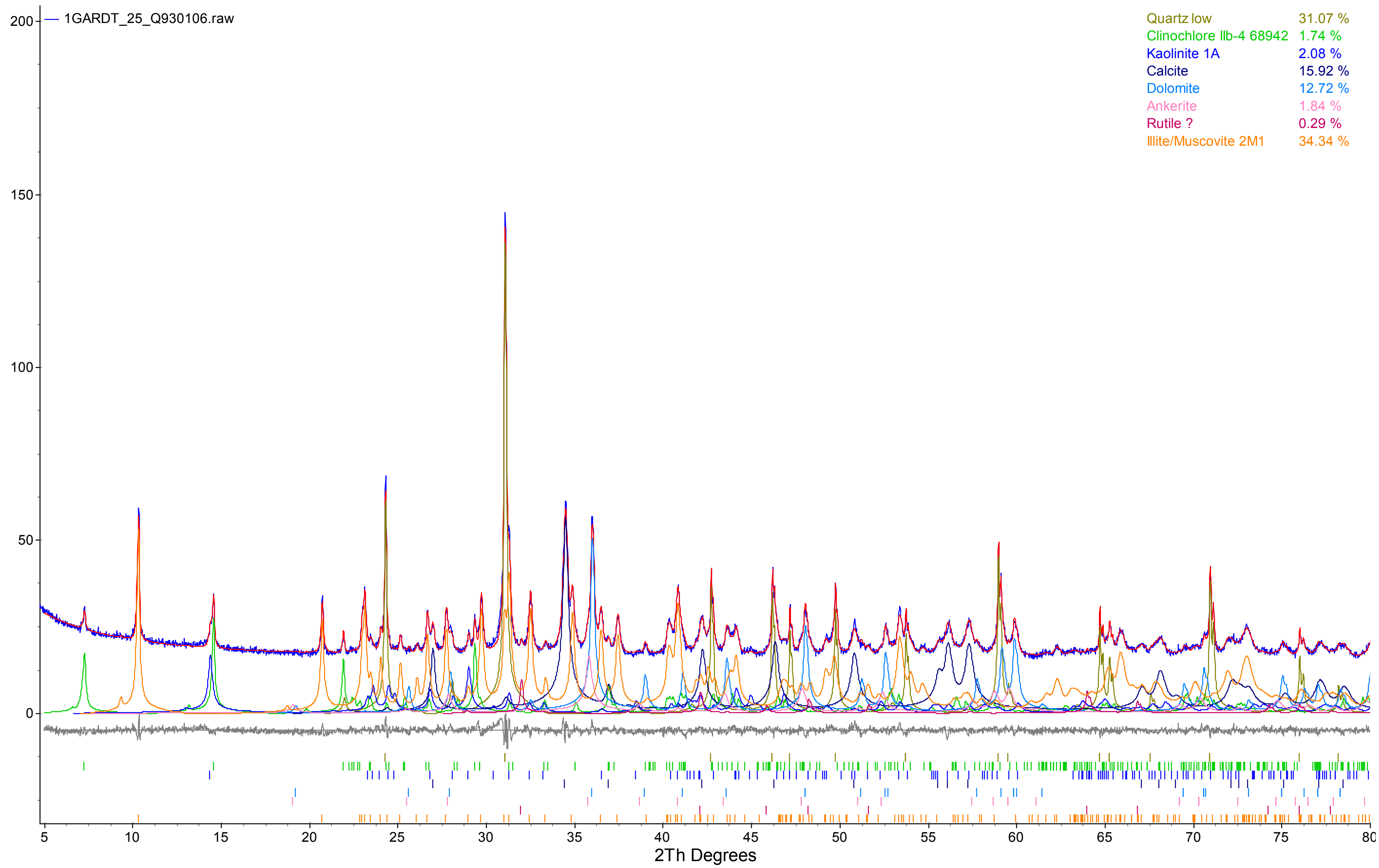


Figure 1. Rietveld refinement plot of sample **Global ARD Testing Services #25 Q930106** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

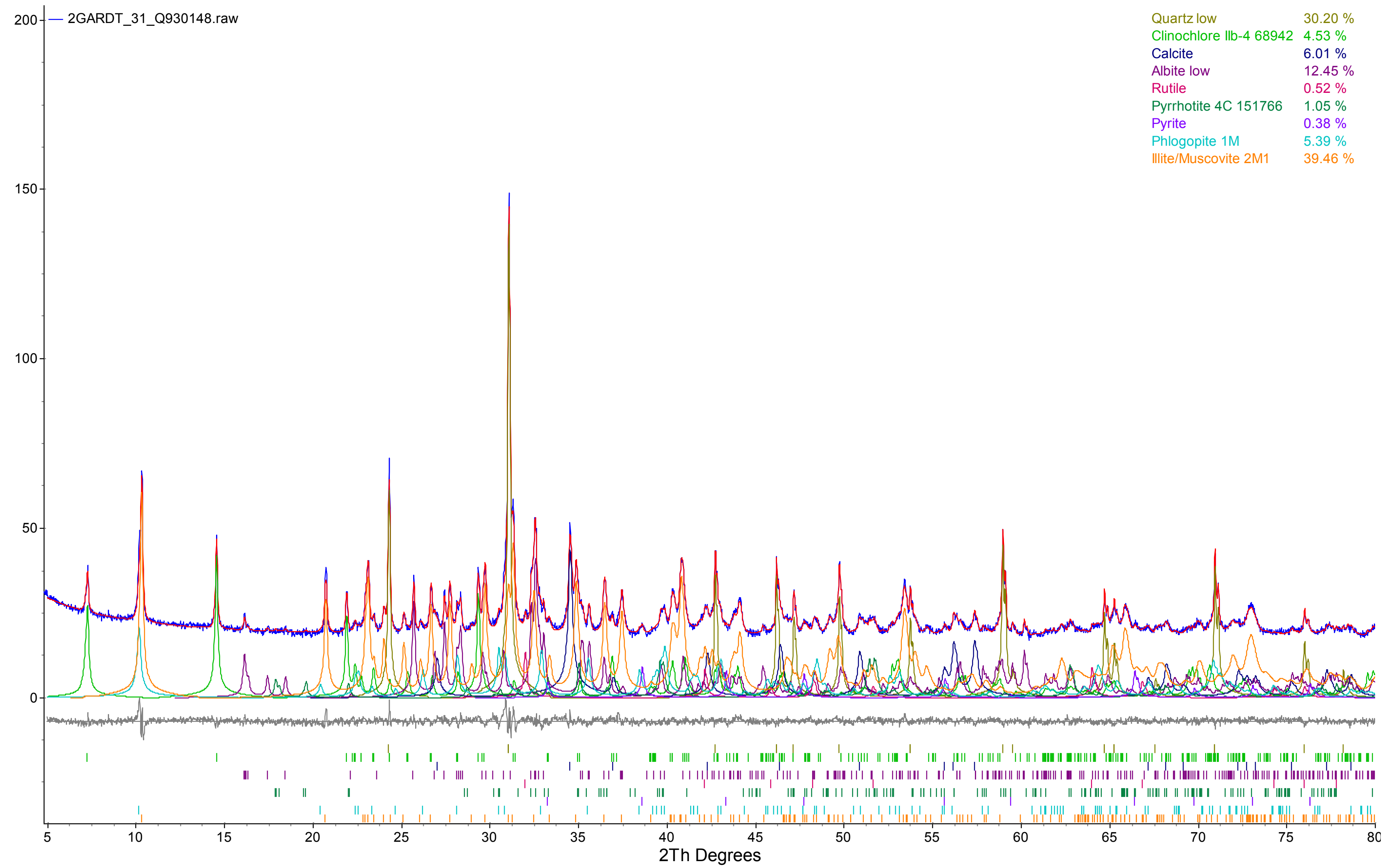


Figure 2. Rietveld refinement plot of sample **Global ARD Testing Services #31 Q930148** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

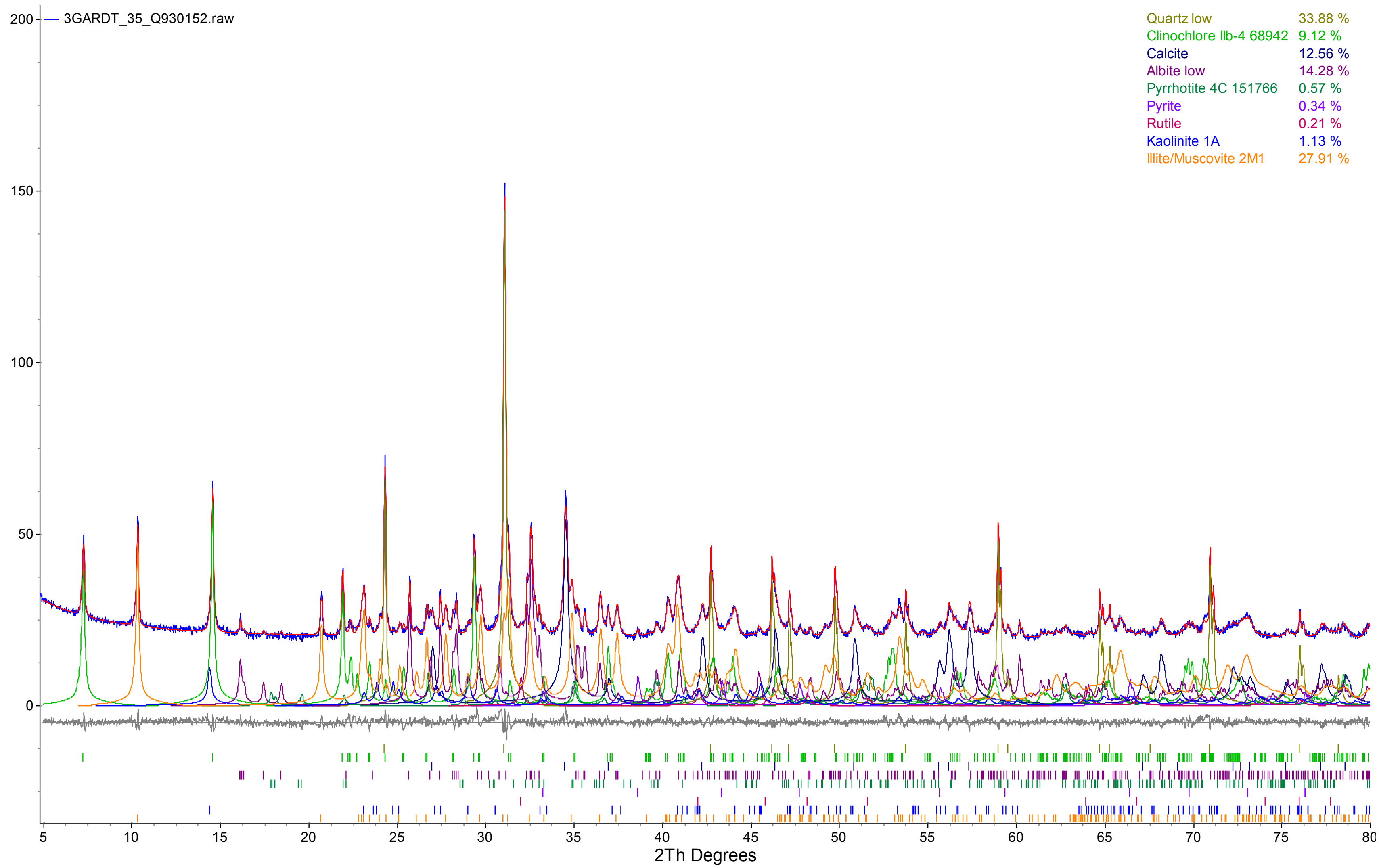


Figure 3. Rietveld refinement plot of sample **Global ARD Testing Services #35 Q930152** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

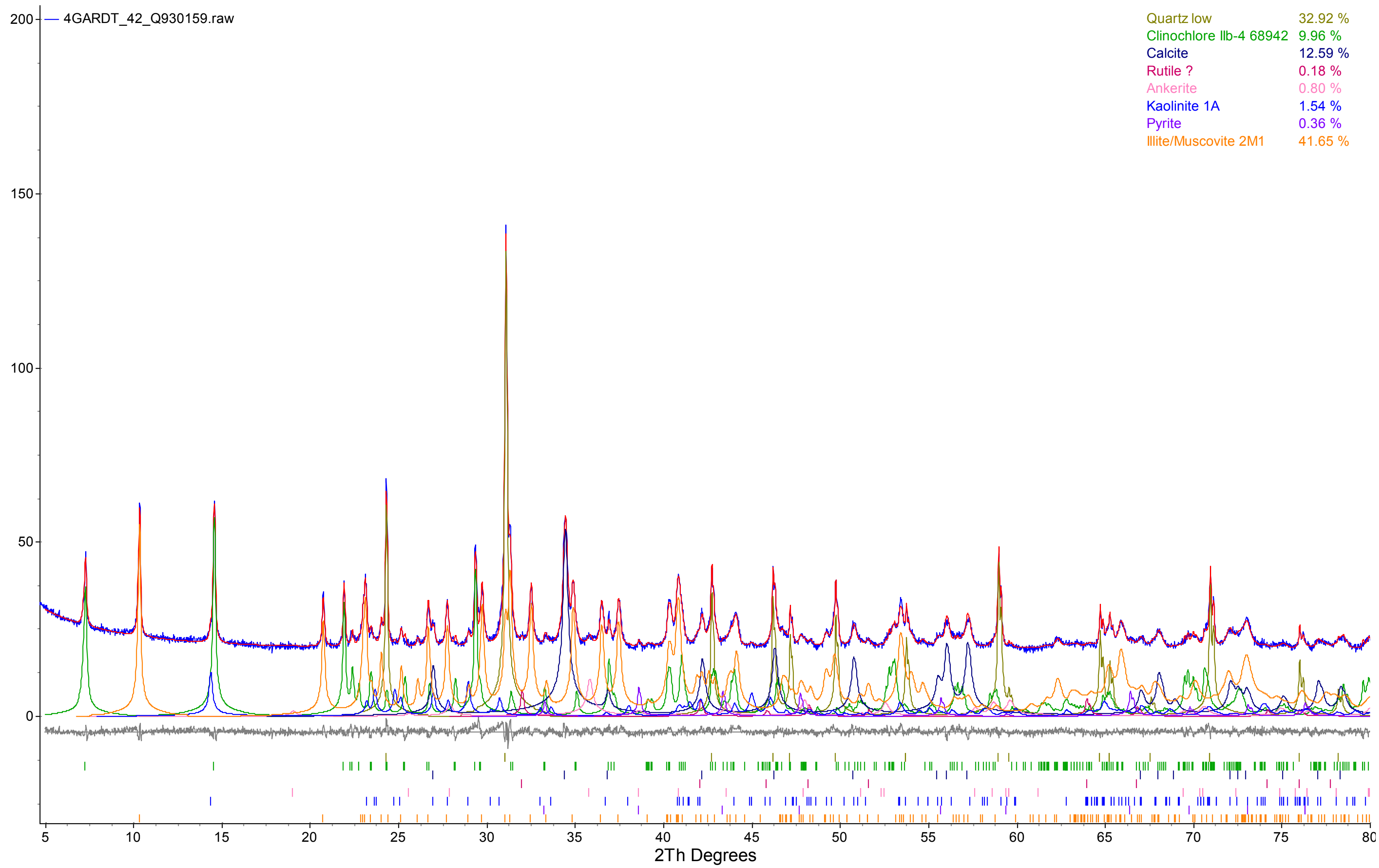


Figure 4. Rietveld refinement plot of sample **Global ARD Testing Services #42 Q930159** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresses:	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

RESULTS		
Reported To:	1	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
cc:		N/A
Date Reported:		April 21, 2016 (Thursday)

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kdbergh@gmail.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
cc:	BMC Accounts (accounts@bmcminerals.com)
Global Invoice No:	ARD1522-0416C
Date Submitted:	April 21, 2016 (Thursday)

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

REPORTING	
Global Project No:	1522
Report Version:	1
Pages (Including Cover):	6
Report Title:	COA 8 (of 44) BMC-KZK Samples (rec'd 11-Jan16; Instr 29-Mar16)
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

NOTES
All samples are stored at no charge for 90 days except on-going HCT head client samples.
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Geodomain	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes (if any)
1	B00 293 201		Drill Core	1.80	Dry	
2	B00 293 202		Drill Core	1.78	Dry	
3	B00 293 203		Drill Core	1.84	Dry	
4	B00 293 204	MET2-4	Drill Core	1.78	Dry	24h MEND-SFE
5	B00 293 205		Drill Core	1.72	Dry	
6	B00 293 206		Drill Core	1.66	Dry	
7	B00 293 207	MET2-4	Drill Core	1.80	Dry	
8	B00 293 208		Drill Core	1.76	Dry	
9	B00 293 209		Drill Core	1.70	Dry	
10	B00 293 210		Drill Core	1.66	Dry	
11	B00 293 211		Drill Core	1.66	Dry	
12	B00 293 212		Drill Core	1.78	Dry	
13	B00 293 213		Drill Core	1.78	Dry	
14	B00 293 214		Drill Core	1.78	Dry	
15	B00 293 215	MET5-7	Drill Core	1.78	Dry	24h MEND-SFE
16	B00 293 216		Drill Core	1.76	Dry	
17	B00 293 217		Drill Core	1.68	Dry	
18	B00 293 218		Drill Core	1.70	Dry	
19	B00 293 219	MET5-7	Drill Core	1.68	Dry	
20	B00 293 220		Drill Core	1.70	Dry	
21	B00 293 221		Drill Core	1.22	Dry	
22	B00 293 222		Drill Core	2.00	Dry	
23	B00 293 223		Drill Core	1.40	Dry	
24	B00 293 224		Drill Core	1.10	Dry	
25	B00 293 225		Drill Core	1.78	Dry	
26	B00 293 226	MET8	Drill Core	1.62	Dry	
27	B00 293 227		Drill Core	1.80	Dry	
28	B00 293 228		Drill Core	1.56	Dry	
29	B00 293 229	MET8	Drill Core	1.68	Dry	24h MEND-SFE
30	B00 293 230		Drill Core	1.28	Dry	
31	B00 293 231		Drill Core	1.80	Dry	
32	B00 293 232		Drill Core	1.80	Dry	
33	B00 293 233	"+1340mRL, tt rich, soluble Pb"	Drill Core	1.74	Dry	24h MEND-SFE
34	B00 293 234		Drill Core	1.62	Dry	
35	B00 293 235		Drill Core	1.58	Dry	
36	B00 293 236	"+1340mRL, tt rich, soluble Pb"	Drill Core	1.68	Dry	
37	B00 293 237		Drill Core	1.78	Dry	
38	B00 293 238		Drill Core	1.60	Dry	
39	B00 293 239		Drill Core	1.68	Dry	
40	B00 293 240		Drill Core	1.76	Dry	
41	B00 293 241		Drill Core	9.66	Dry	
42	B00 293 242		Drill Core	16.72	Dry	
43	B00 293 243		Drill Core	11.02	Dry	
44	B00 293 244		Drill Core	19.90	Dry	
Bag Containing Loose Pieces from B00293221 to B00293230			Drill Core	5.60	Dry	

Note: Highlighted samples requested for analyses.

Total wt. of sample rec'd (kg): 125

Sample Receipt Info:	
Date Sample Received:	Dec. 24, 2015
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Andrew Gault (agault@alexcoresource.com) By Email/COC.
Date Instruction Received:	March 29, 2016 (Tuesday)

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Siderite Corrected NP*	NNP*4	NPR*5
	Units:	**pH Units**		**wt %**	**kg CaCO3/tonne**	**wt.%**	**wt.%**	**wt.%**	**kg CaCO3/tonne**			
	Reported Detection Limit:	***0.01***		***0.02***	***1.7***	**0.01**	**0.01**	**0.01**	**0.3**	***0.5***		
4	B00 293 204	7.0	Moderate	0.26	21.7	37.34	0.06	37.28	1165.0	55.3	-1109.7	0.0
7	B00 293 207	4.8	Slight	<0.02	<1.7	39.33	0.09	39.24	1226.3	9.7	-1216.6	0.0
15	B00 293 215	7.2	Moderate	0.49	40.8	45.70	0.04	45.66	1426.9	85.6	-1341.3	0.1
19	B00 293 219	8.2	Moderate	1.73	144.2	31.92	0.04	31.88	996.3	197.6	-798.7	0.2
26	B00 293 226	6.9	Moderate	0.11	9.2	37.62	0.06	37.56	1173.8	29.8	-1144.0	0.0
29	B00 293 229	8.6	Strong	2.04	170.0	26.13	0.03	26.10	815.6	279.7	-535.9	0.3
33	B00 293 233	7.1	Moderate	0.17	14.2	40.28	0.05	40.23	1257.2	36.0	-1221.2	0.0
36	B00 293 236	8.2	Strong	2.26	188.3	32.40	0.04	32.36	1011.3	229.9	-781.4	0.2
QUALITY ASSURANCE / QUALITY CONTROL												
Replicates:												
4	B00 293 204			0.26	21.7	37.34						
4 R	B00 293 204 (Rep)			0.22	18.3	38.67						
36	B00 293 236	8.2	Strong				0.04			229.9		
36 R	B00 293 236 (Rep)	8.1	Strong				0.03			228.6		
Certified Reference Material (CRM) Analysis:										**as STD Sobek NP** (no CRM available for Sid. Corr. NP)		
Certified Reference Material		KZK-1		SY-4		HCC-1	RTS-3a			1) KZK-1 (Slight) 2) KZK-1 (Moderate)		
CRM True Value		**8.80**		**0.96**		**33.92**	**1.10**			**1) 59.0 2) 64.8**		
Reference Material Results		8.82		0.92		34.01	1.06			1) 57.0 2) 63.4		
Tolerance (+/-)		***0.09***		***0.03***		***0.12***	***0.20***			***1) 2.8 2) 5.8***		
Method Blank Analysis:												
Method Blank Results				<0.02		<0.01	<0.01					
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*ARD-013 (HCl Leach)*	*Calc.*	*Calc.*	*ARD-008*	*Calc.*	*Calc.*

NOTES:
* Siderite Corrected NPs were performed as requested by client based on CaCO3 Equivalents (not by standard procedure of fizz rating).
Date of Analysis: April 12-15, 2016
pH of DI water (pH Units): 5.62 / 5.59
EC of DI water (µS/cm): 0.61 / 0.29
For STD SY-4, the TIC results are evaluated against the COA CO2 (3.5%) value calculated as carbon - i.e. 0.96%. The COA 95% Confidence Interval then calculates to 0.03%.

METHODS:
Total sulphur by LECO, total inorganic carbon by HCl leach followed by Leco analysis. Job #: MA0001-APR16.

ABBREVIATIONS:
R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)
D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request.
NP = Neutralization Potential
Calc. = Calculation
COA = Certificate Of Analysis
IND = Indeterminate

CALCULATIONS:
*1 $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)
*2 Sulphide-Sulphur: Total-sulphur - sulphate-sulphur
*3 AP (Acid Potential): Sulphide-sulphur x 31.25
*4 NNP (Net Neutralization Potential): NP - AP
*5 NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:
Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)
ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).
Peroxide Siderite Correction for Sobek NP: Skousen, J., Renton, J., Brown, H., Evans, P., Leavitt, B., Brady, K., Cohen, L. and Ziemkiewicz, P. (1997), Neutralization Potential of Overburden Samples containing Siderite, Journal of Environmental Quality, v26, n3, p673-681.
Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).
Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Method / Sample Type	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)
		Method	IMS-130											
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1
4	B00 293 204	Rock Pulp	53.84	0.03	760.0	0.035	<10	20	<0.05	30.96	0.76	696	0.68	15.1
7	B00 293 207	Rock Pulp	86.85	0.32	319.1	0.038	10	116	0.17	84.20	0.09	113	2.79	204.9
15	B00 293 215	Rock Pulp	66.54	0.04	483.4	0.012	<10	38	<0.05	51.56	1.66	441	0.94	51.3
19	B00 293 219	Rock Pulp	>100.00	<0.01	1577.5	0.427	<10	116	<0.05	9.68	3.81	357	2.18	2.6
26	B00 293 226	Rock Pulp	>100.00	0.02	450.3	0.169	<10	70	<0.05	245.87	0.41	982	1.23	104.7
29	B00 293 229	Rock Pulp	>100.00	0.18	1777.1	4.937	<10	166	0.11	8.62	5.34	249	11.88	16.4
33	B00 293 233	Rock Pulp	>100.00	0.08	1626.6	0.492	<10	23	<0.05	82.02	0.57	927	1.66	55.2
36	B00 293 236	Rock Pulp	>100.00	<0.01	>10000.0	6.264	<10	20	<0.05	22.39	4.69	438	8.79	3.3
QUALITY ASSURANCE / QUALITY CONTROL														
Pulp Replicates:														
4	B00 293 204	Rock Pulp	53.84	0.03	760.0	0.035	<10	20	<0.05	30.96	0.76	696.00	0.68	15.1
4 R	B00 293 204	Rep	52.43	0.03	818.9	0.047	<10	25	<0.05	31.85	0.74	691.00	0.66	16.8
7	B00 293 207	Rock Pulp												
7 R	B00 293 207	Rep												
29	B00 293 229	Rock Pulp												
29 R	B00 293 229	Rep												
36	B00 293 236	Rock Pulp												
36 R	B00 293 236	Rep												
Reference Material - 1														
STD OREAS 24b			0.080	3.26	8.30	0.0	<10	150	1.67	0.74	0.46	<0.01	62.3	15.9
True Value STD OREAS 24b			**0.058**	**3.15**	**7.96**	**0.002**	**6.23**	**146**	**1.65**	**0.73**	**0.461**	**0.046**	**61.0**	**15.7**
% Difference			37.9	3.5	4.3			2.7	1.2	1.4	-0.2	#VALUE!	2.2	1.3
Tolerance (%)			***NR***	***0.2***	***0.95***	***NR***	***NR***	***12***	***NR***	***0.13***	***0.030***	***NR***	***NR***	***1.9***
Reference Material - 2														
STD MP-1b														
True Value STD MP-1b														
% Difference														
Tolerance (%)														
Reference Material - 3														
STD CDN-ME-1206 (g/t)														
True Value STD CDN-ME-1206 (g/t)														
% Difference														
Tolerance (%)														
Method Blank:														
Method Blank			<0.01	<0.01	0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1

S. No.	Sample ID	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
	Unit	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
	MDL	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
4	B00 293 204	39	0.14	697.9	26.22	3.21	0.37	0.05	13.64	0.986	<0.01	0.4	0.7	0.61	961
7	B00 293 207	38	2.14	>10000.0	35.18	6.38	0.26	0.26	2.80	0.817	0.12	0.9	2.7	0.28	466
15	B00 293 215	49	0.07	1493.0	21.11	1.48	0.21	0.07	20.38	0.867	0.02	0.5	0.4	0.75	567
19	B00 293 219	44	<0.05	1235.3	22.51	3.81	0.24	0.02	14.85	0.294	<0.01	0.7	0.3	1.33	1258
26	B00 293 226	38	0.07	2231.7	28.64	11.49	1.11	<0.02	11.63	1.392	<0.01	0.5	0.3	0.36	980
29	B00 293 229	47	0.19	6436.9	19.37	0.95	0.72	0.25	11.93	0.131	0.11	6.3	1.3	2.37	1092
33	B00 293 233	52	0.41	3725.5	23.68	5.40	0.31	0.19	14.35	2.122	0.05	0.8	0.7	0.37	822
36	B00 293 236	34	<0.05	2500.1	24.77	3.34	0.44	<0.02	35.30	0.331	<0.01	5.0	0.3	1.16	2206
QUALITY ASSURANCE / QUALITY CONTROL															
Pulp Replicates:															
4	B00 293 204	39	0.14	697.9	26.22	3.21	0.37	0.05	13.64	0.986	<0.01	0.4	0.7	0.61	961
4 R	B00 293 204	38	0.12	701.3	28.04	3.08	0.35	0.05	13.48	0.958	<0.01	0.4	0.9	0.61	952
7	B00 293 207														
7 R	B00 293 207														
29	B00 293 229														
29 R	B00 293 229														
36	B00 293 236														
36 R	B00 293 236														
Reference Material - 1															
STD OREAS 24b		103	9.24	36.5	3.99	11.02	0.21	0.55	0.02	0.048	1.22	32.1	45.9	1.42	338
True Value STD OREAS 24b		**106**	**9.15**	**36.4**	**3.93**	**10.80**	**0.26**	**0.52**	**<0.01**	**0.048**	**1.17**	**29.2**	**45.6**	**1.36**	**350**
% Difference		-2.8	1.0	0.3	1.5	2.0	-19.2	5.8		0.0	4.3	9.9	0.7	4.4	-3.4
Tolerance (%)		***9***	***0.56***	***3.3***	***0.21***	***1.1***	***NR***	***NR***	***NR***	***NR***	***0.07***	***NR***	***3.5***	***0.07***	***20***
Reference Material - 2															
STD MP-1b															
True Value STD MP-1b															
% Difference															
Tolerance (%)															
Reference Material - 3															
STD CDN-ME-1206 (g/t)															
True Value STD CDN-ME-1206 (g/t)															
% Difference															
Tolerance (%)															
Method Blank:															
Method Blank		<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5

Notes:
Job: MA0001-APR16
Analytical Methods (IMS-130):
A 0.5 g of pulp sample is leached in hot (95°C) 3:1 aqua regia digestion followed by ICP Mass Spec analysis.
Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5 g).
Refractory and graphitic samples can limit Au solubility.
Abbreviations:
R / Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)
D / Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a second split of the original client sample received)
MDL = Measurable Detection Limit
IND = Indeterminate
On Tolerance:
Any one element in a run reporting outside tolerance limits does not constitute failure of the standard.
As per Certificate of Analysis (COA): All values indicated in green are indicative values only, not certified.
NR = Not Reported in the Certificate Of Analysis.

Global ARD Testing Services Inc.

PAGE: 4b of 6
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Method																								
		Analyte	**Molybdenum (Mo)**	**Sodium (Na)**	**Niobium (Nb)**	**Nickel (Ni)**	**Phosphorous (P)**	**Lead (Pb)**	**Rubidium (Rb)**	**Rhenium (Re)**	**Sulphur (S)**	**Antimony (Sb)**	**Scandium (Sc)**	**Selenium (Se)**	**Tin (Sn)**	**Stronium (Sr)**	**Tantalum (Ta)**	**Tellurium (Te)**	**Thorium (Th)**	**Titanium (Ti)**	**Thallium (Tl)**	**Uranium (U)**	**Vandium (V)**	**Tungsten (W)**	**Yttrium (Y)**	**Zinc (Zn)**	**Zirconium (Zr)**
		Unit	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
		MDL	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.2**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**	**0.2**	**0.2**	**0.01**	**0.01**	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
		Sample Type																									
4	B00 293 204	Rock Pulp	1.54	<0.01	0.12	4.6	11	>10000.0	0.2	<0.001	>10.00	43.96	0.2	18.2	4	36.7	<0.01	0.04	<0.2	<0.005	3.97	0.46	11	<0.05	0.38	>10000	3.0
7	B00 293 207	Rock Pulp	1.80	0.01	0.80	5.0	20	2398.7	6.5	<0.001	>10.00	21.15	0.5	3.9	10.3	1.8	0.01	<0.01	0.6	0.009	16.45	3.06	21	<0.05	1.21	>10000	9.8
15	B00 293 215	Rock Pulp	1.67	<0.01	0.14	5.2	<10	>10000.0	0.9	<0.001	>10.00	143.76	0.2	10.8	4.5	45.8	<0.01	<0.01	0.7	<0.005	7.9	1.55	9	1.09	1.25	>10000	3.1
19	B00 293 219	Rock Pulp	4.85	<0.01	0.06	8.6	<10	>10000.0	<0.1	0.004	>10.00	379.68	0.1	11.6	2.8	49.1	<0.01	0.01	<0.2	<0.005	17.36	0.54	13	0.36	4.44	>10000	0.9
26	B00 293 226	Rock Pulp	4.18	<0.01	0.11	8.5	142	>10000.0	0.3	0.002	>10.00	59.33	0.1	199.6	4.9	8	<0.01	0.01	<0.2	<0.005	3.93	6.14	9	<0.05	1.15	>10000	<0.5
29	B00 293 229	Rock Pulp	16.53	<0.01	0.32	28.5	62	>10000.0	3.8	0.013	>10.00	2194.29	0.6	112.1	7.3	102.1	0.02	0.03	4.4	<0.005	14.26	4.59	36	2.49	7.25	>10000	9.2
33	B00 293 233	Rock Pulp	2.40	<0.01	0.23	9.0	33	>10000.0	2.7	0.002	>10.00	759.52	0.3	24.9	6.7	6.5	<0.01	0.02	1.4	<0.005	6.89	2.32	10	0.19	1.54	>10000	7.6
36	B00 293 236	Rock Pulp	6.82	<0.01	0.08	13.3	<10	>10000.0	0.3	0.008	>10.00	1731.74	0.2	56.1	3.3	20.7	<0.01	0.01	<0.2	<0.005	11.29	2.56	17	0.19	6.36	>10000	0.8
QUALITY ASSURANCE / QUALITY CONTROL																										
Pulp Replicates:																										
4	B00 293 204	Rock Pulp	1.54	<0.01	0.12	4.6	11	>10000.0	0.2	<0.001	>10.00	43.96	0.2	18.2	4	36.7	<0.01	0.04	<0.2	<0.005	3.97	0.46	11	<0.05	0.38	>10000	3.0
4 R	B00 293 204	Rep	1.66	<0.01	0.12	5.0	13	>10000.0	0.2	<0.001	>10.00	41.18	0.2	13.4	3.9	36.3	<0.01	<0.01	<0.2	<0.005	3.99	0.5	12	<0.05	0.38	>10000	3.0
7	B00 293 207	Rock Pulp																									
7 R	B00 293 207	Rep																									
29	B00 293 229	Rock Pulp																									
29 R	B00 293 229	Rep																									
36	B00 293 236	Rock Pulp																									
36 R	B00 293 236	Rep																									
Reference Material - 1																										
STD OREAS 24b			4.07	0.12	0.38	57.7	614	9.30	122.1	<0.001	0.20	0.53	9.70	0.50	2.30	30.6	<0.01	0.02	14.4	0.213	0.69	1.78	81	1.23	12.95	96	24.7
True Value STD OREAS 24b			**3.86**	**IND**	0.31	**57.0**	620	**9.23**	**114**	<0.001	**0.20**	0.48	**9.51**	0.42	**2.26**	29.0	<0.05	<0.02	**14.3**	**0.198**	**0.66**	**1.74**	**79**	1.19	**12.30**	**93**	**24.5**
% Difference			5.4		22.6	1.2	-1.0	0.8	7.1	0.0	0.0	10.4	2.0		1.8	5.5			0.7	7.6	4.5	2.3	2.5	3.4	5.3	3.2	0.8
Tolerance (%)			***0.37***	***NR***	***N/B***	***5***	***NR***	***1.29***	***15***	***NR***	***0.02***	***NR***	***1.39***	***NR***	***0.30***	***NR***	***NR***	***NR***	***1.1***	***0.017***	***0.08***	***0.26***	***5***	***NR***	***1.7***	***6***	***3.2***
Reference Material - 2																										
STD MP-1b																										
True Value STD MP-1b																										
% Difference																										
Tolerance (%)																										
Reference Material - 3																										
STD CDN-ME-1206 (g/t)																										
True Value STD CDN-ME-1206 (g/t)																										
% Difference																										
Tolerance (%)																										
Method Blank:																										
Method Blank			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5

Global
ARD Testing Services Inc.

S. No.	Sample ID	Method / Analyte / Unit / MDL / Sample Type	ICI-6Ag	PER-7As	PER-7Cu	PER-7Pb	PER-7Zn
			Overlimit Metals				
		Method	ICI-6Ag	PER-7As	PER-7Cu	PER-7Pb	PER-7Zn
		Analyte	Silver (Ag)	Arsenic (As)	Copper (Cu)	Lead (Pb)	Zinc (Zn)
		Unit	ppm	%	%	%	%
		MDL	1	0.01	0.005	0.01	
		Sample Type					
4	B00 293 204	Rock Pulp				2.21	11.67
7	B00 293 207	Rock Pulp			1.628		1.67
15	B00 293 215	Rock Pulp				1.20	7.09
19	B00 293 219	Rock Pulp	114			1.83	6.22
26	B00 293 226	Rock Pulp	122			1.40	17.17
29	B00 293 229	Rock Pulp	336			2.91	5.33
33	B00 293 233	Rock Pulp	175			2.50	14.84
36	B00 293 236	Rock Pulp	268	3.41		1.60	7.42
QUALITY ASSURANCE / QUALITY CONTROL							
Pulp Replicates:							
4	B00 293 204	Rock Pulp					
4 R	B00 293 204	Rep					
7	B00 293 207	Rock Pulp			1.628		1.67
7 R	B00 293 207	Rep			1.675		1.72
29	B00 293 229	Rock Pulp				2.91	
29 R	B00 293 229	Rep				2.85	
36	B00 293 236	Rock Pulp	268				
36 R	B00 293 236	Rep	269				
Reference Material - 1							
STD OREAS 24b							
True Value STD OREAS 24b							
% Difference							
Tolerance (%)							
Reference Material - 2							
STD MP-1b				2.27	3.074	2.090	16.51
True Value STD MP-1b				**2.30**	**3.069**	**2.091**	**16.67**
% Difference				-1.30	0.163	-0.048	-0.96
Tolerance (%)				***0.06***	***0.044***	***0.034***	***0.12***
Reference Material - 3							
STD CDN-ME-1206 (g/t)			276				
True Value STD CDN-ME-1206 (g/t)			**274**				
% Difference			0.7				
Tolerance (%)			***14***				
Method Blank:							
Method Blank			<1	<0.01	<0.005	<0.01	<0.01

ANALYTICAL METHODS:

Method Code	Description
ICI-6Ag	Ag, 0.4g, 3:1 Aqua Regia, ICP-AES, Ore Grade
PER-7As	As, 0.15g, Sodium Peroxide Fusion, ICP-AES
PER-7Cu	Cu, 0.15g, Sodium Peroxide Fusion, ICP-AES
PER-7Pb	Pb, 0.15g, Sodium Peroxide Fusion, ICP-AES
PER-7Zn	Zn, 0.15g, Sodium Peroxide Fusion, ICP-AES
IMS-130	Multi-Element, 0.5g, 3:1 Aqua Regia, ICP-AES/MS, Ultra Trace Level

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

Parameter	Method	Unit	RDL	4	15	29	33	33 R	Method Blank
				B00 293 204	B00 293 215	B00 293 229	B00 293 233	B00 293 233 (Rep)	
Weight of dry sample used	Weighing Scale	g	0.01	250	250	250	250		N/A
Volume of DI water used	Graduated Cylinder	mL	0.50	750	750	750	750		750
On filtered samples using 0.45 micron filter paper:									
pH	pH Meter	pH units	0.01	7.2	6.7	9.0	7.1	7.0	5.68
EC	EC Meter	µS/cm	1	66	123	121	56	58	0.89
Acidity (to pH 8.3)	Titration/Calc.	mg CaCO3/L	0.5	4.5	10.5	<0.5	5.5	5.8	1.5
Alkalinity (to pH 4.5)	Titration/Calc.	mg CaCO3/L	0.5	14.0	10.5	25.5	10.0	10.2	1.0
Dissolved Sulphate (SO4)	Turbidimetry	mg/L	1	10	33	19	9	10	<1
Dissolved Metals Analysis by ICP-MS:									
Hardness, Total (as CaCO3)	ICP-MS	mg/L	0.1	24	39	45	18		0.1
Aluminum, dissolved	ICP-MS	mg/L	0.001	0.002	0.001	0.068	0.003		<0.001
Antimony, dissolved	ICP-MS	mg/L	0.00005	0.00606	0.00328	0.0873	0.014		<0.00005
Arsenic, dissolved	ICP-MS	mg/L	0.00005	0.00042	0.00041	0.00056	0.00015		<0.00005
Barium, dissolved	ICP-MS	mg/L	0.0001	0.082	0.0727	0.172	0.17		<0.0001
Beryllium, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001
Bismuth, dissolved	ICP-MS	mg/L	0.00001	0.00001	0.00008	0.00005	0.00009		<0.00001
Boron, dissolved	ICP-MS	mg/L	0.001	0.003	0.002	0.004	0.005		<0.001
Cadmium, dissolved	ICP-MS	mg/L	0.000002	0.000123	0.003	0.000006	0.000256		<0.000002
Calcium, dissolved	ICP-MS	mg/L	0.04	5.49	9.26	10.7	4.79		0.057
Chromium, dissolved	ICP-MS	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001
Cobalt, dissolved	ICP-MS	mg/L	0.000005	0.000047	0.00228	0.000008	0.000498		<0.000005
Copper, dissolved	ICP-MS	mg/L	0.0001	0.0005	0.000	0.000	0.001		<0.0001
Iron, dissolved	ICP-MS	mg/L	0.002	<0.002	<0.002	<0.002	<0.002		<0.002
Lead, dissolved	ICP-MS	mg/L	0.00005	0.179	0.334	0.11	0.214		<0.00005
Lithium, dissolved	ICP-MS	mg/L	0.00005	0.00146	0.00061	0.00093	0.00039		<0.00005
Magnesium, dissolved	ICP-MS	mg/L	0.005	2.4	3.91	4.4	1.44		<0.005
Manganese, dissolved	ICP-MS	mg/L	0.00005	0.105	0.25	0.00749	0.17		<0.00005
Mercury, dissolved	ICP-MS	mg/L	0.000004	<0.000004	<0.000004	<0.000004	<0.000004		<0.000004
Molybdenum, dissolved	ICP-MS	mg/L	0.00001	0.00003	0.00004	0.00079	0.00022		<0.00001
Nickel, dissolved	ICP-MS	mg/L	0.00002	0.00026	0.00165	0.00009	0.00182		<0.00002
Phosphorus, dissolved	ICP-MS	mg/L	0.01	<0.010	<0.010	<0.010	<0.010		<0.010
Potassium, dissolved	ICP-MS	mg/L	0.01	0.316	0.386	1.04	0.667		<0.010
Selenium, dissolved	ICP-MS	mg/L	0.0001	0.0106	0.0795	0.0248	0.0152		<0.0001
Silicon, dissolved	ICP-MS	mg/L	0.05	0.252	0.08700	0.17700	0.08200		<0.050
Silver, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	0.00002	<0.00001		<0.00001
Sodium, dissolved	ICP-MS	mg/L	0.01	0.16	0.35	0.336	0.258		<0.010
Strontium, dissolved	ICP-MS	mg/L	0.0001	0.0261	0.0247	0.0299	0.0081		<0.0001
Sulphur, dissolved	ICP-MS	mg/L	0.5	6.14	13.1	11.1	6.37		<0.500
Tellurium, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005
Thallium, dissolved	ICP-MS	mg/L	0.000004	0.00109	0.0085	0.000662	0.00259		<0.000004
Thorium, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001
Tin, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005
Titanium, dissolved	ICP-MS	mg/L	0.0002	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002
Uranium, dissolved	ICP-MS	mg/L	0.000001	0.000006	0.000	0.000	<0.000001		<0.000001
Vanadium, dissolved	ICP-MS	mg/L	0.0002	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002
Zinc, dissolved	ICP-MS	mg/L	0.001	0.477	2.87	0.01	0.72		<0.001
Zirconium, dissolved	ICP-MS	mg/L	0.00002	<0.00002	<0.00002	<0.00002	<0.00002		<0.00002
Ion Balance									
Major Anions	Calc.	meq/L		0.49	0.90	0.91	0.39	0.41	
Major Cations	Calc.	meq/L		0.51	0.91	0.95	0.42		
Difference	Calc.	meq/L		-0.02	-0.01	-0.04	-0.03		
Balance (%)	Calc.	%		-1.9%	-0.6%	-2.3%	-3.7%		
Shake Flask Extract ID:				*6040078-01*	*6040078-02*	*6040078-03*	*6040078-04*	*6040078-05*	*6040078-06*

Notes:

Job No: 6040078
Date of Analysis (24h): 30/31-March, 2016.
pH of DI water used (pH Units): 5.60
EC of DI water used (µS/cm): 0.41

Abbreviations:

R / Rep = Replicate (which involves the analysis of the same Shake Flask Extract aliquot).
D / Dup = Duplicate (which involves the analysis of a 2nd SF extract, produced by processing a separate split of the original client sample received).
EC = Electrical Conductivity
ORP = Oxidation Reduction Potential
RDL = Reportable Detection Limit.
Calc. = Calculation

Method Reference: Prediction Manual for Drainage Chemistry from Sulphidic Geologic Material, MEND Report 1.20.1; Version 0 - Dec. 2009. Section 11.5; P 11 (8-9).
Extraction Method used: Using Gyratory Shaker for 24 h (± 2 h - gentle agitation).
Liquid:Solid ratio used: 3:1; 750 mL DI H_2O: 250 g of crushed <1/4 inch (<6.3 mm) material.

CERTIFICATE OF ANALYSIS ▪ MEND-SFE QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03

REPORT VERSION: 1

Sulphate

Parameter	Reference Material	% Recovery	Matrix Spike %	QC Limits (%)
STD Mineral Water (10.5 mg/L)	10.2	97.1%		85 - 110
Method Blank + Spike Recovery (19.61 mg.L)	21.30		108.6%	85 - 110

Dissolved Metals by ICP-MS:

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
Dissolved Metals by ICP-MS:												
6040078_B6D0347-BLK1	Aluminum dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.001	mg/L		
6040078_B6D0347-BLK1	Antimony dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040078_B6D0347-BLK1	Arsenic dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040078_B6D0347-BLK1	Barium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0001	mg/L		
6040078_B6D0347-BLK1	Beryllium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040078_B6D0347-BLK1	Bismuth dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040078_B6D0347-BLK1	Boron dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.001	mg/L		
6040078_B6D0347-BLK1	Cadmium dissolved	<	0.000002	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.000002	mg/L		
6040078_B6D0347-BLK1	Calcium dissolved	<	0.04	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.04	mg/L		
6040078_B6D0347-BLK1	Chromium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0001	mg/L		
6040078_B6D0347-BLK1	Cobalt dissolved	<	0.000005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.000005	mg/L		
6040078_B6D0347-BLK1	Copper dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0001	mg/L		
6040078_B6D0347-BLK1	Iron dissolved	<	0.002	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.002	mg/L		
6040078_B6D0347-BLK1	Lead dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040078_B6D0347-BLK1	Lithium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040078_B6D0347-BLK1	Magnesium dissolved	<	0.005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.005	mg/L		
6040078_B6D0347-BLK1	Manganese dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040078_B6D0347-BLK1	Mercury dissolved	<	0.000004	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.000004	mg/L		
6040078_B6D0347-BLK1	Molybdenum dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040078_B6D0347-BLK1	Nickel dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00002	mg/L		
6040078_B6D0347-BLK1	Phosphorus dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.01	mg/L		
6040078_B6D0347-BLK1	Potassium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.01	mg/L		
6040078_B6D0347-BLK1	Selenium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0001	mg/L		
6040078_B6D0347-BLK1	Silicon dissolved	<	0.05	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.05	mg/L		
6040078_B6D0347-BLK1	Silver dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040078_B6D0347-BLK1	Sodium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.01	mg/L		
6040078_B6D0347-BLK1	Strontium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0001	mg/L		
6040078_B6D0347-BLK1	Sulfur dissolved	<	0.5	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.5	mg/L		
6040078_B6D0347-BLK1	Tellurium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040078_B6D0347-BLK1	Thallium dissolved	<	0.000004	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.000004	mg/L		
6040078_B6D0347-BLK1	Thorium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040078_B6D0347-BLK1	Tin dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00005	mg/L		
6040078_B6D0347-BLK1	Titanium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0002	mg/L		
6040078_B6D0347-BLK1	Uranium dissolved	<	0.000001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.000001	mg/L		
6040078_B6D0347-BLK1	Vanadium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.0002	mg/L		
6040078_B6D0347-BLK1	Zinc dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.001	mg/L		
6040078_B6D0347-BLK1	Zirconium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	8-Apr-16	0.00001	mg/L		
6040078_B6D0347-SRM1	Aluminum dissolved		108	%	F	metals	APHA 3125 B	7-Apr-16	1	%	142	58
6040078_B6D0347-SRM1	Antimony dissolved		114	%	F	metals	APHA 3125 B	7-Apr-16	1	%	125	75
6040078_B6D0347-SRM1	Arsenic dissolved		102	%	F	metals	APHA 3125 B	7-Apr-16	1	%	119	81
6040078_B6D0347-SRM1	Barium dissolved		105	%	F	metals	APHA 3125 B	7-Apr-16	1	%	117	83
6040078_B6D0347-SRM1	Beryllium dissolved		101	%	F	metals	APHA 3125 B	7-Apr-16	1	%	120	80
6040078_B6D0347-SRM1	Boron dissolved		109	%	F	metals	APHA 3125 B	7-Apr-16	1	%	117	74
6040078_B6D0347-SRM1	Cadmium dissolved		102	%	F	metals	APHA 3125 B	7-Apr-16	1	%	117	83
6040078_B6D0347-SRM1	Calcium dissolved		107	%	F	metals	APHA 3125 B	7-Apr-16	1	%	124	76
6040078_B6D0347-SRM1	Chromium dissolved		101	%	F	metals	APHA 3125 B	7-Apr-16	1	%	119	81
6040078_B6D0347-SRM1	Cobalt dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	124	76
6040078_B6D0347-SRM1	Copper dissolved		109	%	F	metals	APHA 3125 B	7-Apr-16	1	%	116	84
6040078_B6D0347-SRM1	Iron dissolved		105	%	F	metals	APHA 3125 B	7-Apr-16	1	%	126	74
6040078_B6D0347-SRM1	Lead dissolved		109	%	F	metals	APHA 3125 B	7-Apr-16	1	%	128	72
6040078_B6D0347-SRM1	Lithium dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	140	60
6040078_B6D0347-SRM1	Magnesium dissolved		105	%	F	metals	APHA 3125 B	7-Apr-16	1	%	119	81
6040078_B6D0347-SRM1	Manganese dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	116	84
6040078_B6D0347-SRM1	Molybdenum dissolved		106	%	F	metals	APHA 3125 B	7-Apr-16	1	%	117	83
6040078_B6D0347-SRM1	Nickel dissolved		103	%	F	metals	APHA 3125 B	7-Apr-16	1	%	126	74
6040078_B6D0347-SRM1	Phosphorus dissolved		100	%	F	metals	APHA 3125 B	7-Apr-16	1	%	132	68
6040078_B6D0347-SRM1	Potassium dissolved		102	%	F	metals	APHA 3125 B	7-Apr-16	1	%	126	74
6040078_B6D0347-SRM1	Selenium dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	130	70
6040078_B6D0347-SRM1	Sodium dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	128	72
6040078_B6D0347-SRM1	Strontium dissolved		100	%	F	metals	APHA 3125 B	7-Apr-16	1	%	113	84
6040078_B6D0347-SRM1	Thallium dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	143	57
6040078_B6D0347-SRM1	Uranium dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	115	85
6040078_B6D0347-SRM1	Vanadium dissolved		100	%	F	metals	APHA 3125 B	7-Apr-16	1	%	113	87
6040078_B6D0347-SRM1	Zinc dissolved		104	%	F	metals	APHA 3125 B	7-Apr-16	1	%	128	72

Notes:
Job No: 6040078
EQL = Estimated Quantitation Limits
PQL = Practical Quantitation Limits
UCL = Upper Control Limit
LCL = Lower Control Limit
BLK = Method Blank
SRM = Standard Reference Materials

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresse	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

REPORTING	
Global Project No:	1522
Report Version:	1
Pages (Including Cover):	7
Report Title:	COA 1 BMC-KZK (Aus) Tails (rec'd 14-Sep16)
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

RESULTS		
Reported To:	**1**	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
	4	Jane Capp (jane@omipl.com.au)
Date Reported:		October 11, 2016 (Tuesday)

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kellib@bmcminerals.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
cc:	BMC Accounts (accounts@bmcminerals.com)
Global Invoice No:	ARD1522-1016A
Date Submitted:	October 11, 2016 (Tuesday)

NOTES
All samples are stored at no charge for 90 days except on-going HCT head client sampl
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME: Kudz Ze Kayah
CLIENT PROJECT NO: BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes (if any)
1 of 2	A17107 (Test #1-20)	Tailings	14.08	Wet	Bag 1 of 2
2 of 2	A17107 (Test #1-20)	Tailings	14.04	wet	Bag 2 of 2

Total wt. of sample rec'd (kg): **28.12**

Note: Both samples were mixed using a riffler.

Sample Receipt Info:	
Date Sample Received:	June 27, 2016 (Monday)
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Andrew Gault (agault@alexcoresource.com) By Email/COC.
Date Instruction Received:	September 13, 2016 (Tuesday)

CERTIFICATE OF ANALYSIS ▪ MOISTURE RESULTS

Global
ARD Testing Services Inc.

PAGE: 3 of 7
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME: Kudz Ze Kayah
CLIENT PROJECT NO: BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Moisture (Wt. %)
1	A17107 (Test #1-20)	11.50
1 D	A17107 (Test #1-20) (Dup)	11.90

Date Analysed (24 hours; 105-110° C): September 14/15, 2016

REFERENCES:

ASTM D2216-98; Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME: Kudz Ze Kayah
CLIENT PROJECT NO: BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Mod. ABA NP	NNP*4	NPR*5
	Units:	**pH Units**		**wt %**	**kg CaCO3/tonne**	**wt.%**	**wt.%**	**wt.%**		**kg CaCO3/tonne**		
	Reported Detection Limit:	***0.01***		***0.02***	***1.7***	**0.01**	**0.01**	**0.01**	**0.3**	***0.5***		
1	A17107 (Test #1-20)	7.7	Moderate	0.76	63.3	30.94	0.05	30.89	965.3	84.7	-880.6	0.1
	QUALITY ASSURANCE / QUALITY CONTROL											
Replicates:												
1	A17107 (Test #1-20)	7.7	Moderate	0.76	63.3	30.94	0.05	30.89	965.3	84.7	-880.6	0.1
1 D	A17107 (Test #1-20) (Dup)	7.7	Moderate	0.76	63.3	31.49	0.05	31.44	982.5	85.9	-896.6	0.1
1 R	A17107 (Test #1-20) (Rep)	7.7		0.73	60.8	33.40						
Certified Reference Material (CRM) Analysis:												
Certified Reference Material		KZK-1		SY-4		1) OREAS 24b 2) HCC-1	RTS-3a			2) KZK-1 (Moderate)		
CRM True Value		**8.80**		**0.96**		**1) 0.190 2) 33.92**	**1.10**			**1) 58.9 2) 61.6**		
Reference Material Results		8.91		0.92		1) 0.21 2) 34.76	1.14			1) 55.6 2) 59.1		
Tolerance (+/-) or Confidence Limits		***0.09***		***0.03***		***1) 0.179 - 0.201 2) 0.12***	***0.20***			***1) 1.1 2) 3.4***		
Method Blank Analysis:												
Method Blank Results				<0.02		<0.01	<0.01					
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*(HCl Leach)*	*Calc.*	*Calc.*	*ARD-005*	*Calc.*	*Calc.*

NOTES:

Date of Analysis: Sep. 19/20, 2016.

pH of DI water (pH Units): 5.74

EC of DI water (µS/cm): 0.63

For STD SY-4, the TIC results are evaluated against the COA CO2 (3.5%) value calculated as carbon - i.e. 0.96%. The COA 95% Confidence Interval then calculates to 0.03%.

METHODS:

Total sulphur by LECO, total inorganic carbon by HCl leach followed by Leco analysis. Job No: MA0058-SEP16.

ABBREVIATIONS:

R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)

D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request.

NP = Neutralization Potential

Calc. = Calculation

COA = Certificate Of Analysis

IND = Indeterminate

CALCULATIONS:

*1 $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)

*2 Sulphide-Sulphur: Total-sulphur - sulphate-sulphur

*3 AP (Acid Potential): Sulphide-sulphur x 31.25

*4 NNP (Net Neutralization Potential): NP - AP

*5 NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:

Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)

ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).

Modified ABA (Sobek) NP: MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).

Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME: Kudz Ze Kayah
CLIENT PROJECT NO: BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Method	IMS-130												
		Analyte	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
		Sample Type													
1	A17107 (Test #1-20)	Rock Pulp	20.24	0.51	2723.2	0.084	13	15	0.09	16.40	2.09	17.57	8.55	82.4	831
QUALITY ASSURANCE / QUALITY CONTROL															
Replicates:															
1	A17107 (Test #1-20)	Rock Pulp	20.24	0.51	2723.2	0.084	13	15	0.09	16.4	2.09	17.57	8.55	82.4	831
1 D	A17107 (Test #1-20) (Dup)	Duplicate	22.52	0.53	2836.4	0.072	11	16	0.10	17.69	2.17	21.50	9.00	80.3	862
1 R	A17107 (Test #1-20) (Rep)	Replicate	20.41	0.52	2710.1	0.121	15	12	0.09	16.09	2.12	17.72	8.15	79.7	845
Reference Material															
STD OREAS 24b			0.080	3.21	8.40	<0.005	<10	148	1.77	0.69	0.45	0.06	56.3	16.8	100
True Value STD OREAS 24b			**0.058**	**3.15**	**7.96**	**0.002**	**6.23**	**146**	**1.65**	**0.73**	**0.461**	**0.046**	**61.0**	**15.7**	**106**
% Difference			37.9	1.9	5.5			1.4	7.3	-5.5	-2.4	30.4	-7.7	7.0	-5.7
Tolerance (%)			***NR***	***0.2***	***0.95***	***NR***	***NR***	***12***	***NR***	***0.13***	***0.030***	***NR***	***NR***	***1.9***	***9***
Method Blank:															
Method Blank			<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1

S. No.	Sample ID	Method	IMS-130															
		Analyte	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Unit	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
		Sample Type													
1	A17107 (Test #1-20)	Rock Pulp	1.05	942.9	26.25	4.75	0.34	0.28	1.10	0.077	0.10	3.0	4.3	1.03	1181
QUALITY ASSURANCE / QUALITY CONTROL															
Replicates:															
1	A17107 (Test #1-20)	Rock Pulp	1.05	942.9	26.25	4.75	0.34	0.28	1.10	0.077	0.10	3.0	4.3	1.03	1181
1 D	A17107 (Test #1-20) (Dup)	Duplicate	1.12	1088.2	25.71	4.68	0.34	0.28	1.23	0.081	0.10	3.2	4.3	1.06	1202
1 R	A17107 (Test #1-20) (Rep)	Replicate	1.08	959.8	26.84	4.59	0.20	0.25	1.15	0.079	0.10	2.9	4.2	1.05	1188
Reference Material															
STD OREAS 24b			9.34	38.0	3.87	11.55	0.24	0.56	<0.01	0.046	1.18	29.0	49.8	1.36	345
True Value STD OREAS 24b			**9.15**	**36.4**	**3.93**	**10.80**	**0.26**	**0.52**	**<0.01**	**0.048**	**1.17**	**29.2**	**45.6**	**1.36**	**350**
% Difference			2.1	4.4	-1.5	6.9	-7.7	7.7		-4.2	0.9	-0.7	9.2	0.0	-1.4
Tolerance (%)			***0.56***	***3.3***	***0.21***	***1.1***	***NR***	***NR***	***NR***	***NR***	***0.07***	***NR***	***3.5***	***0.07***	***20***
Method Blank:															
Method Blank			<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5

Notes:

Job No: MA0058-SEP16.

Analytical Methods (IMS-130):

A 0.5 g of pulp sample is leached in hot (95°C) 3:1 aqua regia digestion followed by ICP Mass Spec analysis.

Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5 g).

Refractory and graphitic samples can limit Au solubility.

Abbreviations:

R / Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)

D / Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a second split of the original client sample received)

MDL = Measurable Detection Limit

IND = Indeterminate

On Tolerance:

Any one element in a run reporting outside tolerance limits does not constitute failure of the standard.

As per Certificate of Analysis (COA): All values indicated in green are indicative values only, not certified.

NR = Not Reported in the Certificate Of Analysis.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME: Kudz Ze Kayah
CLIENT PROJECT NO: BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Method																								
		Analyte	**Molybdenum (Mo)**	**Sodium (Na)**	**Niobium (Nb)**	**Nickel (Ni)**	**Phosphorous (P)**	**Lead (Pb)**	**Rubidium (Rb)**	**Rhenium (Re)**	**Sulphur (S)**	**Antimony (Sb)**	**Scandium (Sc)**	**Selenium (Se)**	**Tin (Sn)**	**Stronium (Sr)**	**Tantalum (Ta)**	**Tellurium (Te)**	**Thorium (Th)**	**Titanium (Ti)**	**Thallium (Tl)**	**Uranium (U)**	**Vandium (V)**	**Tungsten (W)**	**Yttrium (Y)**	**Zinc (Zn)**	**Zirconium (Zr)**
		Unit	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
		MDL	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.2**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**	**0.2**	**0.2**	**0.01**	**0.01**	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
		Sample Typ																									
1	A17107 (Test #1-20)	Rock Pulp	68.47	0.01	0.65	467.6	28	1639.0	6.3	0.009	>10	57.30	0.7	5	3.3	35	0.02	0.1	3.2	<0.005	7.54	3.54	23	2.44	3.92	2315	12.6
Replicates:																											
1	A17107 (Test #1-20)	Rock Pulp	68.47	0.01	0.65	467.6	28	1639.0	6.3	0.009	>10	57.30	0.7	5	3.3	35	0.02	0.1	3.2	<0.005	7.54	3.54	23	2.44	3.92	2315	12.6
1 D	A17107 (Test #1-20) (Dup)	Duplicate	71.95	0.01	0.68	491.8	48	1763.8	6.2	0.009	>10	66.13	0.7	5.1	3.5	37.5	<0.01	0.05	3.2	<0.005	7.6	3.53	23	2.60	4.10	2776	12.7
1 R	A17107 (Test #1-20) (Rep)	Replicate	68.95	0.01	0.67	473.9	24	1653.0	6.2	0.009	>10	60.03	0.7	3.1	3.3	36.1	<0.01	<0.01	2.8	<0.005	7.57	3.29	24	2.47	3.93	2349	11.4
Reference Material																											
STD OREAS 24b			3.87	0.11	0.37	59.4	610	9.00	105.9	<0.001	0.20	0.46	10.30	0.40	2.50	28.8	0.01	0.03	14.4	0.211	0.69	1.85	79	1.17	13.06	95	24.1
True Value STD OREAS 24b			**3.86**	**IND**	**0.31**	**57.0**	**620**	**9.23**	**114**	**<0.001**	**0.20**	**0.48**	**9.51**	**0.42**	**2.26**	**29.0**	**<0.05**	**<0.02**	**14.3**	**0.198**	**0.66**	**1.74**	**79**	**1.19**	**12.30**	**93**	**24.5**
% Difference			0.3		19.4	4.2	-1.6	-2.5	-7.1	#VALUE!	0.0	-4.2	8.3		10.6	-0.7			0.7	6.6	4.5	6.3	0.0	-1.7	6.2	2.2	-1.6
Tolerance (%)			***0.37***	***NR***	***N/B***	***5***	***NR***	***1.29***	***15***	***NR***	***0.02***	***NR***	***1.39***	***NR***	***0.30***	***NR***	***NR***	***NR***	***1.1***	***0.017***	***0.08***	***0.26***	***5***	***NR***	***1.7***	***6***	***3.2***
Method Blank:																											
Method Blank			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5

CERTIFICATE OF ANALYSIS ▪ SHAKE FLASK EXTRACTION RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME: Kudz Ze Kayah
CLIENT PROJECT NO: BMC-15-03
REPORT VERSION: 1

Parameter	Unit	RDL	DI Water SFE (24 h)				Sequential 5% H_2O_2 SFE (24 h per cycle)					
			1	1 R	1 D	Method Blank	Cycle-1	Cycle-1 R	Cycle-2	Cycle-3	Cycle-4	Method Blank
			Sample ID				Sample ID					
			A17107 (Test #1-20)	A17107 (Test #1-20)	A17107 (Test #1-20) (Dup)		A17107 (Test #1-20)					
Weight of dry sample used	g	0.01	250	N/A	250	N/A	250	N/A	Cycle-1 Resi	Cycle-2 Resi	Cycle-3 Resi	N/A
Volume of DI water used	mL	0.50	750	N/A	750	750	750	N/A	750	750	750	750
On filtered samples using 0.45 micron filter paper												
pH	pH units	0.01	7.35		7.32	5.49	7.41	7.38	7.40	7.47	7.39	4.48
EC	µS/cm	1.0	604		623	0.90	1652	1658	883	592	509	5.74
Acidity (to pH 8.3)	mg CaCO3/L	0.5	6.0		7.3	6.5	101.0		28.5	18.5	14.0	237.5
Alkalinity (to pH 4.5)	mg CaCO3/L	0.5	28.5		29.0	1.3	52.0		69.0	87.0	91.0	<0.5
Dissolved Sulphate (SO4)	mg/L	0.5 / 1.0	239		248	<0.50	870			180	160	<1
Fluoride (F)	mg/L	0.010	0.130		0.130		0.180			0.075	0.061	
Dissolved Metals by ICP-MS:												
CaCO3)	mg/L	0.1	261.0	259.4	270.0	<0.1	893.0	874.4		265.0	221.0	<0.1
Aluminum, dissolved	mg/L	0.001	0.002	0.002	0.002	<0.001	<0.001	0.0007		<0.001	<0.001	<0.001
Antimony, dissolved	mg/L	0.00005	0.00268	0.00271	0.00259	<0.00005	0.0346	0.0334		0.0269	0.0252	<0.00005
Arsenic, dissolved	mg/L	0.00005	0.00032	0.00032	0.00033	<0.00005	0.00025	0.00024		0.00038	0.00038	<0.00005
Barium, dissolved	mg/L	0.0001	0.0268	0.0273	0.026	0.0002	0.0164	0.0159		0.0288	0.0305	<0.0001
Beryllium, dissolved	mg/L	0.00001	<0.000010	0.000004	<0.000010	<0.000010	<0.000010	0.000002		<0.000010	<0.000010	<0.000010
Bismuth, dissolved	mg/L	0.00001	<0.000010	0.000009	<0.000010	<0.000010	<0.000010	0.000004		<0.000010	<0.000010	<0.000010
Boron, dissolved	mg/L	0.001	0.01	0.01	0.011	<0.001	0.01	0.009		0.004	0.003	<0.001
Cadmium, dissolved	mg/L	0.000002	0.0389	0.039	0.0448	<0.000002	0.344	0.334		0.0472	0.0294	<0.000002
Calcium, dissolved	mg/L	0.04	80.9	80.7	84.1	<0.04	314	309		90.3	72.8	<0.04
Chromium, dissolved	mg/L	0.0001	<0.00010	0.00007	<0.00010	<0.00010	0.0217	0.0209		0.016	0.0181	0.00042
Cobalt, dissolved	mg/L	0.000005	0.016	0.0161	0.0169	<0.000005	0.00902	0.00875		0.00884	0.00475	<0.000005
Copper, dissolved	mg/L	0.0001	0.00407	0.00408	0.00394	0.00012	0.039	0.038		0.171	0.123	0.00024
Iron, dissolved	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.001		<0.002	<0.002	<0.002
Lead, dissolved	mg/L	0.00005	0.107	0.106	0.115	<0.00005	0.0336	0.0331		0.0475	0.0359	<0.00005
Lithium, dissolved	mg/L	0.00005	0.00741	0.00736	0.00741	<0.00005	0.0134	0.0128		0.00243	0.00171	<0.00005
Magnesium, dissolved	mg/L	0.005	14.3	14.2	14.5	<0.005	26.7	25.5		9.6	9.47	<0.005
Manganese, dissolved	mg/L	0.00005	1.41	1.41	1.43	0.0001	4.03	3.87		0.663	0.411	0.00011
Mercury, dissolved	mg/L	0.00001	0.00005	0.00004	0.00006	<0.00001	<0.00001	0.000005		<0.00001	<0.00001	<0.00001
Molybdenum, dissolved	mg/L	0.00001	0.00075	0.00078	0.00074	<0.00001	0.0602	0.0583		0.0369	0.0359	0.00007
Nickel, dissolved	mg/L	0.00002	0.0274	0.0277	0.029	0.00002	0.0536	0.0523		0.0148	0.00895	0.00025
Phosphorus, dissolved	mg/L	0.01	0.087	0.091	0.085	<0.010	0.021	0.023		<0.010	<0.010	0.058
Potassium, dissolved	mg/L	0.01	5.3	5.29	5.34	<0.010	7.11	6.93		2.2	1.85	0.049
Selenium, dissolved	mg/L	0.0001	0.183	0.181	0.196	<0.00010	3.28	3.11		0.589	0.425	<0.00010
Silicon, dissolved	mg/L	0.05	0.45	0.46	0.43	<0.05	1.75	1.7		1.01	0.86	<0.05
Silver, dissolved	mg/L	0.00001	0.000193	0.000189	0.000196	<0.000010	<0.000010	0.000008		<0.000010	<0.000010	<0.000010
Sodium, dissolved	mg/L	0.01	8.51	8.41	8.47	<0.010	9.78	9.38		0.223	0.103	<0.010
Strontium, dissolved	mg/L	0.0001	0.181	0.181	0.187	<0.00010	0.752	0.732		0.25	0.217	<0.00010
Sulphur, dissolved	mg/L	0.5	119	119	120	<0.5	330	319		67.3	51.5	<0.5
Tellurium, dissolved	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005
Thallium, dissolved	mg/L	0.000004	0.0177	0.0179	0.0189	<0.000004	0.0258	0.0254		0.00905	0.00721	<0.000004
Thorium, dissolved	mg/L	0.00001	<0.000010	0.000002	<0.000010	<0.000010	<0.000010	0.000005		<0.000010	<0.000010	<0.000010
Tin, dissolved	mg/L	0.00005	<0.00005	0.000009	<0.00005	<0.00005	<0.00005	0.00003		<0.00005	<0.00005	0.0325
Titanium, dissolved	mg/L	0.0002	<0.0002	0.00005	0.0004	<0.0002	<0.0002	0.0001		<0.0002	<0.0002	0.0004
Uranium, dissolved	mg/L	0.000001	0.000028	0.00003	0.000027	<0.000001	0.000009	0.000004		0.000002	0.000002	<0.000001
Vanadium, dissolved	mg/L	0.0002	<0.0002	0.000006	<0.0002	<0.0002	0.0006	0.0006		0.0012	0.0012	<0.0002
Zinc, dissolved	mg/L	0.001	2.43	2.44	2.85	<0.0010	33.3	32.4		7.19	3.65	0.0034
Zirconium, dissolved	mg/L	0.00002	<0.00002	0.00003	<0.00002	<0.00002	<0.00002	0.000007		<0.00002	<0.00002	<0.00002
Ion Balance												
Major Anions	meq/L		5.56	5.56	5.75		19.17	19.17		5.49	5.16	
Major Cations	meq/L		5.85	5.83	6.04		19.66	19.25		5.62	4.60	
Difference	meq/L		-0.30	-0.27	-0.29		-0.48	-0.08		-0.12	0.56	
Balance (%)	%		-2.6%	-2.4%	-2.4%		-1.2%	-0.2%		-1.1%	5.7%	
Shake Flask Extract ID (anions):			*PO2389*	*N/A*	*PO2390*	*N/A*	*PQ1294*	*N/A*		*PQ1295*	*PQ1296*	*N/A*
Shake Flask Extract ID (ICP-MS):			*6091462-01*	*6091462-01*	*6091462-02*	*6091462-03*	*6092175-01*	*6092175-01*		*6092175-02*	*6092175-03*	*6092175-04*

Notes (DI Water SFE):
Job No: Anions: B681999V1; Dissolved Metals: 6091462.
Date of Analysis (24 h): September 19/20, 2016.
pH of DI water used (pH Units): 5.65
EC of DI water used (µS/cm): 0.29

Notes (5% H2O2 SFE):
Job No: Anions: B685298V1; Dissolved Metals: 6092175.
Date of Analysis (4 Cycles x 24 h each): September 19 to 23, 2016.
pH of 5% H2O2 used (pH Units): 5.51
EC of 5% H2O2 used (µS/cm): 5.79

Abbreviations:
R / Rep = Replicate (which involves the analysis of the same Shake Flask Extract aliquot).
D / Dup = Duplicate (which involves the analysis of a 2nd SF extract, produced by processing a separate split of the original client sample received).
EC = Electrical Conductivity
ORP = Oxidation Reduction Potential
IC: Ion Chromatograph
SIE: Selective Ion Electrode
RDL = Reportable Detection Limit.
Calc. = Calculation

Method Reference (DI Water SFE): Prediction Manual for Drainage Chemistry from Sulphidic Geologic Material, MEND Report 1.20.1; Version 0 - Dec. 2009. Section 11.5; P 11 (8-9).
Method Reference (5% H2O2 SFE): Custom.
Extraction Method used: Using gyratory shaker for 24h (± 2h; gentle agitation).
Liquid: Solid ratio used: Rock Samples - 3: 1; L: S; 750 mL DI H_2O: 250 g of crushed sample (85% passing 1/4 inch - i.e. 6.3 mm); Tails: As-rec'd homogenized sample.
ICP-MS Method Reference Descriptions (APHA): Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation.

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME: Kudz Ze Kayah
CLIENT PROJECT NO: BMC-15-03
REPORT VERSION: 1

DI SFE - Anions:

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/d	Value	Recovery	Units	QC Limits
8407674	Matrix Spike	Fluoride (F)	2016/09/22		100	%	80 - 120
8407674	Spiked Blank	Fluoride (F)	2016/09/22		96	%	80 - 120
				0.015, RDL=0.01			
8407674	Method Blank	Fluoride (F)	2016/09/22	0		mg/L	
8407674	RPD	Fluoride (F)	2016/09/22	0		%	20
8411131	Matrix Spike	Dissolved Sulphate (SO4	2016/09/26		124 (1)	%	80 - 120
8411131	Spiked Blank	Dissolved Sulphate (SO4	2016/09/26		102	%	80 - 120
8411131	Method Blank	Dissolved Sulphate (SO4	2016/09/26	<1.0		mg/L	
8411131	RPD	Dissolved Sulphate (SO4	2016/09/26	NC		%	20
8412415	Matrix Spike	Dissolved Sulphate (SO4	2016/09/27		NC	%	80 - 120
8412415	Spiked Blank	Dissolved Sulphate (SO4	2016/09/27		104	%	80 - 120
8412415	Method Blank	Dissolved Sulphate (SO4	2016/09/27	<1.0		mg/L	
8412415	RPD	Dissolved Sulphate (SO4	2016/09/27	1.3		%	20

Notes:
Job No: B681999
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

5% H2O2 SFE - Anions:

QA/QC Batch	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
8417402	Matrix Spike [PQ1294-(	Fluoride (F)	2016/09/30		100	%	80 - 120
8417402	Spiked Blank	Fluoride (F)	2016/09/30		96	%	80 - 120
				0.014, RDL=0.01			
8417402	Method Blank	Fluoride (F)	2016/09/30	0		mg/L	
8417402	RPD	Fluoride (F)	2016/09/30	0		%	20
8417413	Matrix Spike	Fluoride (F)	2016/09/30		98	%	80 - 120
8417413	Spiked Blank	Fluoride (F)	2016/09/30		94	%	80 - 120
				0.013, RDL=0.01			
8417413	Method Blank	Fluoride (F)	2016/09/30	0		mg/L	
8417413	RPD	Fluoride (F)	2016/09/30	2.8		%	20
8421110	Matrix Spike	Dissolved Sulphate (SO4	2016/10/04		NC	%	80 - 120
8421110	Spiked Blank	Dissolved Sulphate (SO4	2016/10/04		104	%	80 - 120
8421110	Method Blank	Dissolved Sulphate (SO4	2016/10/04	<1.0		mg/L	
8421110	RPD	Dissolved Sulphate (SO4	2016/10/04	1.7		%	20

Notes:
B685298V1
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

DI SFE - Dissolved Metals by ICP-MS:

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6091462_B6I1283-BLK1	Aluminum dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.001	mg/L		
6091462_B6I1283-BLK1	Antimony dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-BLK1	Arsenic dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-BLK1	Barium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L		
6091462_B6I1283-BLK1	Beryllium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-BLK1	Bismuth dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-BLK1	Boron dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.001	mg/L		
6091462_B6I1283-BLK1	Cadmium dissolved	<	0.000002	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000002	mg/L		
6091462_B6I1283-BLK1	Calcium dissolved	<	0.04	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.04	mg/L		
6091462_B6I1283-BLK1	Chromium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L		
6091462_B6I1283-BLK1	Cobalt dissolved	<	0.000005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000005	mg/L		
6091462_B6I1283-BLK1	Copper dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L		
6091462_B6I1283-BLK1	Iron dissolved	<	0.002	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.002	mg/L		
6091462_B6I1283-BLK1	Lead dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-BLK1	Lithium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-BLK1	Magnesium dissolved	<	0.005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.005	mg/L		
6091462_B6I1283-BLK1	Manganese dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-BLK1	Mercury dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-BLK1	Molybdenum dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-BLK1	Nickel dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00002	mg/L		
6091462_B6I1283-BLK1	Phosphorus dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.01	mg/L		
6091462_B6I1283-BLK1	Potassium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.01	mg/L		
6091462_B6I1283-BLK1	Selenium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L		
6091462_B6I1283-BLK1	Silicon dissolved	<	0.05	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.05	mg/L		
6091462_B6I1283-BLK1	Silver dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-BLK1	Sodium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.01	mg/L		
6091462_B6I1283-BLK1	Strontium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L		
6091462_B6I1283-BLK1	Sulfur dissolved	<	0.5	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.5	mg/L		
6091462_B6I1283-BLK1	Tellurium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-BLK1	Thallium dissolved	<	0.000004	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000004	mg/L		
6091462_B6I1283-BLK1	Thorium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-BLK1	Tin dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-BLK1	Titanium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0002	mg/L		
6091462_B6I1283-BLK1	Uranium dissolved	<	0.000001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000001	mg/L		
6091462_B6I1283-BLK1	Vanadium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0002	mg/L		
6091462_B6I1283-BLK1	Zinc dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.001	mg/L		
6091462_B6I1283-BLK1	Zirconium dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00002	mg/L		

CERTIFICATE OF ANALYSIS ▪ SHAKE FLASK EXTRACTION QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME: Kudz Ze Kayah
CLIENT PROJECT NO: BMC-15-03

6091462_B6I1283-DUP1 = 6091462-01 = A17107 (Test #1-20) (DI-SFE)

6091462_B6I1283-DUP1	Aluminum dissolved		0.002	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.001	mg/L		
6091462_B6I1283-DUP1	Antimony dissolved		0.00271	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-DUP1	Arsenic dissolved		0.00032	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-DUP1	Barium dissolved		0.0273	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L		
6091462_B6I1283-DUP1	Beryllium dissolved		0.000004	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-DUP1	Bismuth dissolved		0.000009	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-DUP1	Boron dissolved		0.01	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.001	mg/L		
6091462_B6I1283-DUP1	Cadmium dissolved		0.039	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000002	mg/L		
6091462_B6I1283-DUP1	Calcium dissolved		80.7	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.04	mg/L		
6091462_B6I1283-DUP1	Chromium dissolved		0.00007	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L		
6091462_B6I1283-DUP1	Cobalt dissolved		0.0161	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000005	mg/L		
6091462_B6I1283-DUP1	Copper dissolved		0.00408	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L		
6091462_B6I1283-DUP1	Iron dissolved	<	<0.002	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.002	mg/L		
6091462_B6I1283-DUP1	Lead dissolved		0.106	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-DUP1	Lithium dissolved		0.00736	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-DUP1	Magnesium dissolved		14.2	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.005	mg/L		
6091462_B6I1283-DUP1	Manganese dissolved		1.41	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-DUP1	Mercury dissolved		0.00004	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-DUP1	Molybdenum dissolved		0.00078	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-DUP1	Nickel dissolved		0.0277	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00002	mg/L		
6091462_B6I1283-DUP1	Phosphorus dissolved		0.091	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.01	mg/L		
6091462_B6I1283-DUP1	Potassium dissolved		5.29	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.01	mg/L		
6091462_B6I1283-DUP1	Selenium dissolved		0.181	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L		
6091462_B6I1283-DUP1	Silicon dissolved		0.46	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.05	mg/L		
6091462_B6I1283-DUP1	Silver dissolved		0.000189	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-DUP1	Sodium dissolved		8.41	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.01	mg/L		
6091462_B6I1283-DUP1	Strontium dissolved		0.181	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L		
6091462_B6I1283-DUP1	Sulfur dissolved		119	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.5	mg/L		
6091462_B6I1283-DUP1	Tellurium dissolved	<	<0.00005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-DUP1	Thallium dissolved		0.0179	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000004	mg/L		
6091462_B6I1283-DUP1	Thorium dissolved		0.000002	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L		
6091462_B6I1283-DUP1	Tin dissolved		0.000009	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L		
6091462_B6I1283-DUP1	Titanium dissolved		0.00005	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0002	mg/L		
6091462_B6I1283-DUP1	Uranium dissolved		0.00003	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000001	mg/L		
6091462_B6I1283-DUP1	Vanadium dissolved		0.000006	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0002	mg/L		
6091462_B6I1283-DUP1	Zinc dissolved		2.44	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.001	mg/L		
6091462_B6I1283-DUP1	Zirconium dissolved		0.00003	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00002	mg/L		
6091462_B6I1283-MS1	Antimony dissolved		0.0436	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L	114	81
6091462_B6I1283-MS1	Arsenic dissolved		0.022	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L	115	89
6091462_B6I1283-MS1	Barium dissolved		0.131	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L	115	86
6091462_B6I1283-MS1	Beryllium dissolved		0.00987	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L	124	77
6091462_B6I1283-MS1	Cadmium dissolved		0.055	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000002	mg/L	126	82
6091462_B6I1283-MS1	Chromium dissolved		0.0429	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L	117	85
6091462_B6I1283-MS1	Cobalt dissolved		0.061	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000005	mg/L	131	76
6091462_B6I1283-MS1	Copper dissolved		0.0465	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L	113	88
6091462_B6I1283-MS1	Iron dissolved		0.222	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.002	mg/L	115	80
6091462_B6I1283-MS1	Lead dissolved		0.137	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L	121	84
6091462_B6I1283-MS1	Manganese dissolved		1.48	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00005	mg/L	135	75
6091462_B6I1283-MS1	Nickel dissolved		0.0712	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00002	mg/L	121	83
6091462_B6I1283-MS1	Selenium dissolved		0.209	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0001	mg/L	122	91
6091462_B6I1283-MS1	Silver dissolved		0.00838	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.00001	mg/L	120	74
6091462_B6I1283-MS1	Thallium dissolved		0.0294	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.000004	mg/L	119	79
6091462_B6I1283-MS1	Vanadium dissolved		0.042	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.0002	mg/L	115	80
6091462_B6I1283-MS1	Zinc dissolved		2.95	mg/L	F	metals	APHA 3125 B	22-Sep-16	0.001	mg/L	123	89
6091462_B6I1283-SRM1	Aluminum dissolved		111	%	F	metals	APHA 3125 B	22-Sep-16	1	%	142	58
6091462_B6I1283-SRM1	Antimony dissolved		114	%	F	metals	APHA 3125 B	22-Sep-16	1	%	125	75
6091462_B6I1283-SRM1	Arsenic dissolved		114	%	F	metals	APHA 3125 B	22-Sep-16	1	%	119	81
6091462_B6I1283-SRM1	Barium dissolved		112	%	F	metals	APHA 3125 B	22-Sep-16	1	%	117	83
6091462_B6I1283-SRM1	Beryllium dissolved		104	%	F	metals	APHA 3125 B	22-Sep-16	1	%	120	80
6091462_B6I1283-SRM1	Boron dissolved		96	%	F	metals	APHA 3125 B	22-Sep-16	1	%	117	74
6091462_B6I1283-SRM1	Cadmium dissolved		111	%	F	metals	APHA 3125 B	22-Sep-16	1	%	117	83
6091462_B6I1283-SRM1	Calcium dissolved		105	%	F	metals	APHA 3125 B	22-Sep-16	1	%	124	76
6091462_B6I1283-SRM1	Chromium dissolved		112	%	F	metals	APHA 3125 B	22-Sep-16	1	%	119	81
6091462_B6I1283-SRM1	Cobalt dissolved		114	%	F	metals	APHA 3125 B	22-Sep-16	1	%	124	76
6091462_B6I1283-SRM1	Copper dissolved		113	%	F	metals	APHA 3125 B	22-Sep-16	1	%	116	84
6091462_B6I1283-SRM1	Iron dissolved		112	%	F	metals	APHA 3125 B	22-Sep-16	1	%	126	74
6091462_B6I1283-SRM1	Lead dissolved		104	%	F	metals	APHA 3125 B	22-Sep-16	1	%	128	72
6091462_B6I1283-SRM1	Lithium dissolved		104	%	F	metals	APHA 3125 B	22-Sep-16	1	%	140	60
6091462_B6I1283-SRM1	Magnesium dissolved		112	%	F	metals	APHA 3125 B	22-Sep-16	1	%	119	81
6091462_B6I1283-SRM1	Manganese dissolved		114	%	F	metals	APHA 3125 B	22-Sep-16	1	%	116	84
6091462_B6I1283-SRM1	Molybdenum dissolved		109	%	F	metals	APHA 3125 B	22-Sep-16	1	%	117	83
6091462_B6I1283-SRM1	Nickel dissolved		114	%	F	metals	APHA 3125 B	22-Sep-16	1	%	126	74
6091462_B6I1283-SRM1	Phosphorus dissolved		119	%	F	metals	APHA 3125 B	22-Sep-16	1	%	132	68
6091462_B6I1283-SRM1	Potassium dissolved		111	%	F	metals	APHA 3125 B	22-Sep-16	1	%	126	74
6091462_B6I1283-SRM1	Selenium dissolved		108	%	F	metals	APHA 3125 B	22-Sep-16	1	%	130	70
6091462_B6I1283-SRM1	Sodium dissolved		110	%	F	metals	APHA 3125 B	22-Sep-16	1	%	128	72
6091462_B6I1283-SRM1	Strontium dissolved		109	%	F	metals	APHA 3125 B	22-Sep-16	1	%	113	84
6091462_B6I1283-SRM1	Thallium dissolved		102	%	F	metals	APHA 3125 B	22-Sep-16	1	%	143	57
6091462_B6I1283-SRM1	Uranium dissolved		102	%	F	metals	APHA 3125 B	22-Sep-16	1	%	115	85
6091462_B6I1283-SRM1	Vanadium dissolved		110	%	F	metals	APHA 3125 B	22-Sep-16	1	%	113	87
6091462_B6I1283-SRM1	Zinc dissolved		114	%	F	metals	APHA 3125 B	22-Sep-16	1	%	128	72

5% H2O2 SFE - Dissolved Metals by ICP-MS:

6092175_B6J0178-BLK1	Aluminum dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.001	mg/L
6092175_B6J0178-BLK1	Antimony dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L
6092175_B6J0178-BLK1	Arsenic dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L
6092175_B6J0178-BLK1	Barium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L
6092175_B6J0178-BLK1	Beryllium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L
6092175_B6J0178-BLK1	Bismuth dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L
6092175_B6J0178-BLK1	Boron dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.001	mg/L
6092175_B6J0178-BLK1	Cadmium dissolved	<	0.000002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000002	mg/L
6092175_B6J0178-BLK1	Calcium dissolved	<	0.04	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.04	mg/L
6092175_B6J0178-BLK1	Chromium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L
6092175_B6J0178-BLK1	Cobalt dissolved	<	0.000005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000005	mg/L
6092175_B6J0178-BLK1	Copper dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L
6092175_B6J0178-BLK1	Iron dissolved	<	0.002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.002	mg/L
6092175_B6J0178-BLK1	Lead dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L
6092175_B6J0178-BLK1	Lithium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L
6092175_B6J0178-BLK1	Magnesium dissolved	<	0.005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.005	mg/L
6092175_B6J0178-BLK1	Manganese dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L
6092175_B6J0178-BLK1	Mercury dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L
6092175_B6J0178-BLK1	Molybdenum dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L
6092175_B6J0178-BLK1	Nickel dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00002	mg/L
6092175_B6J0178-BLK1	Phosphorus dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.01	mg/L
6092175_B6J0178-BLK1	Potassium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.01	mg/L
6092175_B6J0178-BLK1	Selenium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L

CERTIFICATE OF ANALYSIS ▪ SHAKE FLASK EXTRACTION QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522

CLIENT: BMC MINERALS (No.1) LTD.

CLIENT PROJECT NAME: Kudz Ze Kayah

CLIENT PROJECT NO: BMC-15-03

6092175_B6J0178-BLK1	Silicon dissolved	<	0.05	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.05	mg/L		
6092175_B6J0178-BLK1	Silver dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092175_B6J0178-BLK1	Sodium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.01	mg/L		
6092175_B6J0178-BLK1	Strontium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092175_B6J0178-BLK1	Sulfur dissolved	<	0.5	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.5	mg/L		
6092175_B6J0178-BLK1	Tellurium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092175_B6J0178-BLK1	Thallium dissolved	<	0.000004	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000004	mg/L		
6092175_B6J0178-BLK1	Thorium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092175_B6J0178-BLK1	Tin dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092175_B6J0178-BLK1	Titanium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0002	mg/L		
6092175_B6J0178-BLK1	Uranium dissolved	<	0.000001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000001	mg/L		
6092175_B6J0178-BLK1	Vanadium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0002	mg/L		
6092175_B6J0178-BLK1	Zinc dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.001	mg/L		
6092175_B6J0178-BLK1	Zirconium dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00002	mg/L		
6092175_B6J0178-DUP1 = 6092175-01 = A17107 Test 1-20 (C1-H2O2-SFE)												
6092175_B6J0178-DUP1	Aluminum dissolved		0.0007	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.001	mg/L		
6092175_B6J0178-DUP1	Antimony dissolved		0.0334	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092175_B6J0178-DUP1	Arsenic dissolved		0.00024	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092175_B6J0178-DUP1	Barium dissolved		0.0159	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092175_B6J0178-DUP1	Beryllium dissolved		0.000002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092175_B6J0178-DUP1	Bismuth dissolved		0.000004	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092175_B6J0178-DUP1	Boron dissolved		0.009	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.001	mg/L		
6092175_B6J0178-DUP1	Cadmium dissolved		0.334	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000002	mg/L		
6092175_B6J0178-DUP1	Calcium dissolved		309	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.04	mg/L		
6092175_B6J0178-DUP1	Chromium dissolved		0.0209	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092175_B6J0178-DUP1	Cobalt dissolved		0.00875	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000005	mg/L		
6092175_B6J0178-DUP1	Copper dissolved		0.038	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092175_B6J0178-DUP1	Iron dissolved		0.001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.002	mg/L		
6092175_B6J0178-DUP1	Lead dissolved		0.0331	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092175_B6J0178-DUP1	Lithium dissolved		0.0128	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092175_B6J0178-DUP1	Magnesium dissolved		25.5	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.005	mg/L		
6092175_B6J0178-DUP1	Manganese dissolved		3.87	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092175_B6J0178-DUP1	Mercury dissolved		0.000005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092175_B6J0178-DUP1	Molybdenum dissolved		0.0583	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092175_B6J0178-DUP1	Nickel dissolved		0.0523	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00002	mg/L		
6092175_B6J0178-DUP1	Phosphorus dissolved		0.023	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.01	mg/L		
6092175_B6J0178-DUP1	Potassium dissolved		6.93	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.01	mg/L		
6092175_B6J0178-DUP1	Selenium dissolved		3.11	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092175_B6J0178-DUP1	Silicon dissolved		1.7	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.05	mg/L		
6092175_B6J0178-DUP1	Silver dissolved		0.000008	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092175_B6J0178-DUP1	Sodium dissolved		9.38	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.01	mg/L		
6092175_B6J0178-DUP1	Strontium dissolved		0.732	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092175_B6J0178-DUP1	Sulfur dissolved		319	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.5	mg/L		
6092175_B6J0178-DUP1	Tellurium dissolved	<	<0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092175_B6J0178-DUP1	Thallium dissolved		0.0254	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000004	mg/L		
6092175_B6J0178-DUP1	Thorium dissolved		0.000005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092175_B6J0178-DUP1	Tin dissolved		0.00003	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092175_B6J0178-DUP1	Titanium dissolved		0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0002	mg/L		
6092175_B6J0178-DUP1	Uranium dissolved		0.000004	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000001	mg/L		
6092175_B6J0178-DUP1	Vanadium dissolved		0.0006	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0002	mg/L		
6092175_B6J0178-DUP1	Zinc dissolved		32.4	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.001	mg/L		
6092175_B6J0178-DUP1	Zirconium dissolved		0.000007	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00002	mg/L		
6092175_B6J0178-MS1	Antimony dissolved		0.0659	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L	114	81
6092175_B6J0178-MS1	Arsenic dissolved		0.0196	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L	115	89
6092175_B6J0178-MS1	Barium dissolved		0.122	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L	115	86
6092175_B6J0178-MS1	Beryllium dissolved		0.00792	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L	124	77
6092175_B6J0178-MS1	Cadmium dissolved		0.0604	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000002	mg/L	126	82
6092175_B6J0178-MS1	Chromium dissolved		0.0542	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L	117	85
6092175_B6J0178-MS1	Cobalt dissolved		0.0457	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000005	mg/L	131	76
6092175_B6J0178-MS1	Copper dissolved		0.225	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L	113	88
6092175_B6J0178-MS1	Iron dissolved		0.188	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.002	mg/L	115	80
6092175_B6J0178-MS1	Lead dissolved		0.0665	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L	121	84
6092175_B6J0178-MS1	Manganese dissolved		0.768	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L	135	75
6092175_B6J0178-MS1	Nickel dissolved		0.0519	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00002	mg/L	121	83
6092175_B6J0178-MS1	Selenium dissolved		0.66	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L	122	91
6092175_B6J0178-MS1	Silver dissolved		0.00947	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L	120	74
6092175_B6J0178-MS1	Thallium dissolved		0.0181	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000004	mg/L	119	79
6092175_B6J0178-MS1	Vanadium dissolved		0.0373	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0002	mg/L	115	80
6092175_B6J0178-MS1	Zinc dissolved		8.07	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.001	mg/L	123	89
6092175_B6J0178-SRM	Aluminum dissolved		97	%	F	metals	APHA 3125 B	5-Oct-16	1	%	142	58
6092175_B6J0178-SRM	Antimony dissolved		104	%	F	metals	APHA 3125 B	5-Oct-16	1	%	125	75
6092175_B6J0178-SRM	Arsenic dissolved		102	%	F	metals	APHA 3125 B	5-Oct-16	1	%	119	81
6092175_B6J0178-SRM	Barium dissolved		101	%	F	metals	APHA 3125 B	5-Oct-16	1	%	117	83
6092175_B6J0178-SRM	Beryllium dissolved		103	%	F	metals	APHA 3125 B	5-Oct-16	1	%	120	80
6092175_B6J0178-SRM	Boron dissolved		93	%	F	metals	APHA 3125 B	5-Oct-16	1	%	117	74
6092175_B6J0178-SRM	Cadmium dissolved		98	%	F	metals	APHA 3125 B	5-Oct-16	1	%	117	83
6092175_B6J0178-SRM	Calcium dissolved		104	%	F	metals	APHA 3125 B	5-Oct-16	1	%	124	76
6092175_B6J0178-SRM	Chromium dissolved		101	%	F	metals	APHA 3125 B	5-Oct-16	1	%	119	81
6092175_B6J0178-SRM	Cobalt dissolved		104	%	F	metals	APHA 3125 B	5-Oct-16	1	%	124	76
6092175_B6J0178-SRM	Copper dissolved		104	%	F	metals	APHA 3125 B	5-Oct-16	1	%	116	84
6092175_B6J0178-SRM	Iron dissolved		101	%	F	metals	APHA 3125 B	5-Oct-16	1	%	126	74
6092175_B6J0178-SRM	Lead dissolved		102	%	F	metals	APHA 3125 B	5-Oct-16	1	%	128	72
6092175_B6J0178-SRM	Lithium dissolved		102	%	F	metals	APHA 3125 B	5-Oct-16	1	%	140	60
6092175_B6J0178-SRM	Magnesium dissolved		102	%	F	metals	APHA 3125 B	5-Oct-16	1	%	119	81
6092175_B6J0178-SRM	Manganese dissolved		99	%	F	metals	APHA 3125 B	5-Oct-16	1	%	116	84
6092175_B6J0178-SRM	Molybdenum dissolved		101	%	F	metals	APHA 3125 B	5-Oct-16	1	%	117	83
6092175_B6J0178-SRM	Nickel dissolved		103	%	F	metals	APHA 3125 B	5-Oct-16	1	%	126	74
6092175_B6J0178-SRM	Phosphorus dissolved		100	%	F	metals	APHA 3125 B	5-Oct-16	1	%	132	68
6092175_B6J0178-SRM	Potassium dissolved		102	%	F	metals	APHA 3125 B	5-Oct-16	1	%	126	74
6092175_B6J0178-SRM	Selenium dissolved		103	%	F	metals	APHA 3125 B	5-Oct-16	1	%	130	70
6092175_B6J0178-SRM	Sodium dissolved		101	%	F	metals	APHA 3125 B	5-Oct-16	1	%	128	72
6092175_B6J0178-SRM	Strontium dissolved		96	%	F	metals	APHA 3125 B	5-Oct-16	1	%	113	84
6092175_B6J0178-SRM	Thallium dissolved		100	%	F	metals	APHA 3125 B	5-Oct-16	1	%	143	57
6092175_B6J0178-SRM	Uranium dissolved		99	%	F	metals	APHA 3125 B	5-Oct-16	1	%	115	85
6092175_B6J0178-SRM	Vanadium dissolved		100	%	F	metals	APHA 3125 B	5-Oct-16	1	%	113	87
6092175_B6J0178-SRM	Zinc dissolved		103	%	F	metals	APHA 3125 B	5-Oct-16	1	%	128	72

Notes:

BLK = Blank
EQL = Estimated Quantitation Limits
PQL = Practical Quantitation Limits
UCL = Upper Control Limit
LCL = Lower Control Limit
SRM = Standard Reference Materials

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresses:	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

REPORTING	
Global Project No:	1522
Report Version:	4
Pages (Including Cover):	8
Report Title:	COA 3 KZK (Aus) Tailings (Rec'd 20-Jun16)
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

RESULTS		
Reported To:	**1**	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
	4	Jane Capp (jane@omipl.com.au)
Date Reported:		Version-1 (Moisture, SFE & PSD results): July 11, 2016.
		Version-2 (Final): July 13, 2016 (Wednesday).
		Version-3 (additional cyanide results): Aug. 19, 2016 (Friday).
		Version-4 (additional 5% H2O2-SFE results): Oct. 11, 2016 (Tuesday).

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kellib@bmcminerals.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
cc:	BMC Accounts (accounts@bmcminerals.com)
Global Invoice No:	ARD1522-0716A; SAD WAD-CN: ARD1522-0816A; 5% H2O2-SFE: ARD1522-1016B.
Date Submitted:	Oct. 11, 2016 (Tuesday) for 5% H2O2-SFE results.

NOTES
All samples are stored at no charge for 90 days except on-going HCT head sampl
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

GLOBAL PROJECT NO: 1522

CLIENT: BMC MINERALS (No.1) LTD.

CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03

REPORT VERSION: 4

S. No.	Sample ID	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes (if any)
1	Test 25 - Zn Ro Tail Cyc 1-3	Tailings	2.26	Dry	All samples have ID "**A17107**" on the bags. Photo of each sample sent to client on 20-Jun-2016.
2	Test 25 - Zn Ro Tail Cyc 4-6	Tailings	2.74	Wet	
3	Test 29 - Zn Ro Tail Cyc 1-6	Tailings	5.14	Wet	

Total wt. of sample rec'd (kg): **10.1**

Sample Receipt Info:	
Date Sample Received:	June 20, 2016 (Monday)
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Andrew Gault (agault@alexcoresource.com) By Email/COC.
Date Instruction Received:	June 21, 2016 (Tuesday)

CERTIFICATE OF ANALYSIS ▪ MOISTURE RESULTS

Global ARD Testing Services Inc.

PAGE: 3 of 8

GLOBAL PROJECT NO: 1522

CLIENT: BMC MINERALS (No.1) LTD.

CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03

REPORT VERSION: 4

S. No.	Sample ID	Moisture (Wt. %)
1	Test 25 - Zn Ro Tail Cyc 1-3	2.26
2	Test 25 - Zn Ro Tail Cyc 4-6	13.22
3	Test 29 - Zn Ro Tail Cyc 1-6	10.30

Date Analysed (24 hours; 105-110° C): June 21/22, 2016

REFERENCES:

ASTM D2216-98; Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 4

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents^{*1}	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur^{*2}	AP^{*3}	Mod. ABA NP	NNP^{*4}	NPR^{*5}
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%	kg CaCO3/tonne			
	Reported Detection Limit:	*0.01*		*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*		
1	Test 25 - Zn Ro Tail Cyc 1-3	6.8	Moderate	1.39	115.8	28.42	0.06	28.36	886.3	95.6	-790.7	0.1
2	Test 25 - Zn Ro Tail Cyc 4-6	5.9	Moderate	1.29	107.5	27.74	0.20	27.54	860.6	91.0	-769.6	0.1
3	Test 29 - Zn Ro Tail Cyc 1-6	7.0	Moderate	1.35	112.5	28.22	0.08	28.14	879.4	95.6	-783.8	0.1
QUALITY ASSURANCE / QUALITY CONTROL												
Replicates:												
1	Test 25 - Zn Ro Tail Cyc 1-3			1.39	115.8	28.42						
1 R	Test 25 - Zn Ro Tail Cyc 1-3 (Rep)			1.38	115.0	28.51						
3	Test 29 - Zn Ro Tail Cyc 1-6	7.0	Moderate	1.35	112.5	28.22	0.08	28.14	879.4	95.6	-783.8	0.1
3 D	Test 29 - Zn Ro Tail Cyc 1-6 (Dup)	7.1	Moderate	1.35	112.5	28.13	0.09	28.04	876.3	95.9	-780.4	0.1
Certified Reference Material (CRM) Analysis:												
Certified Reference Material		KZK-1		SY-4		1) OREAS 504 2) HCC-1	RTS-3a			1) KZK-1 (Slight) 2) KZK-1 (Moderate)		
CRM True Value		**8.80**		**0.96**		**1) 1.30 2) 33.92**	**1.10**			**1) 58.9 2) 61.6**		
Reference Material Results				0.92		1) 1.36 2) 33.98	1.12			1) 57.8 2) N/A		
Tolerance (+/-)		***0.09***		***0.03***		***1) NR in COA 2) 0.12***	***0.20***			***1) 1.1 2) 3.4***		
Method Blank Analysis:												
Method Blank Results				<0.02		<0.01	<0.01					
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*ARD-013 (HCl Leach)*	*Calc.*	*Calc.*	*ARD-005*	*Calc.*	*Calc.*

NOTES:

Date of Analysis (24h): June 27/28, 2016.

pH of DI water (pH Units): 5.78

EC of DI water (µS/cm): 0.48

For STD SY-4, the TIC results are evaluated against the COA CO2 (3.5%) value calculated as carbon - i.e. 0.96%. The COA 95% Confidence Interval then calculates to 0.03%.

METHODS:

Total sulphur by LECO, total inorganic carbon by HCl leach followed by Leco analysis. Job No: MA0102-JUN16.

ABBREVIATIONS:

R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)

D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request.

NP = Neutralization Potential

Calc. = Calculation

NR in COA = Not Reported in Certificate Of Analysis

IND = Indeterminate

CALCULATIONS:

^{*1} $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)

^{*2} Sulphide-Sulphur: Total-sulphur - sulphate-sulphur

^{*3} AP (Acid Potential): Sulphide-sulphur x 31.25

^{*4} NNP (Net Neutralization Potential): NP - AP

^{*5} NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:

Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)

ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).

Modified ABA (Sobek) NP: MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).

Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

PAGE: 5a of 8
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 4

S. No.	Sample ID	Method / Sample Type	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)
		Method	IMS-130										
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02
1	Test 25 - Zn Ro Tail Cyc 1-3	Pulp	17.59	0.77	2192.9	0.274	18	41	0.07	16.39	2.34	22.85	13.42
2	Test 25 - Zn Ro Tail Cyc 4-6	Pulp	19.43	0.74	2163.0	0.164	13	27	0.07	17.72	2.29	26.56	10.59
3	Test 29 - Zn Ro Tail Cyc 1-6	Pulp	20.59	0.74	2053.7	0.158	13	24	0.07	18.81	2.33	35.35	10.3
QUALITY ASSURANCE / QUALITY CONTROL													
Pulp Replicates:													
3	Test 29 - Zn Ro Tail Cyc 1-6	Pulp	17.59	0.77	2192.9	0.274	18	41	0.07	16.39	2.34	22.85	13.42
3 D	Test 29 - Zn Ro Tail Cyc 1-6	Pulp-Dup	17.64	0.75	2137.6	0.186	17	24	0.08	16.22	2.31	22.65	12.12
Certified Reference Material													
STD OREAS 24b			0.090	3.28	8.70	<0.005	<10	146	1.71	0.72	0.45	0.060	63.6
True Value STD OREAS 24b			**0.058**	**3.15**	**7.96**	**0.002**	**6.23**	**146**	**1.65**	**0.73**	**0.461**	**0.046**	**61.0**
% Difference			55.2	4.1	9.3			0.0	3.6	-1.4	-2.4	30.4	4.2
Tolerance (%)			***NR***	***0.2***	***0.95***	***NR***	***NR***	***12***	***NR***	***0.13***	***0.030***	***NR***	***NR***
Method Blank:													
Method Blank			<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02

S. No.	Sample ID	Method / Sample Type	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Method	IMS-130														
		Unit	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	0.1	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
1	Test 25 - Zn Ro Tail Cyc 1-3	Pulp	94.9	749	0.91	763.6	28.88	6.87	0.69	0.34	1.32	0.086	0.05	5.8	5.7	1.46	1288
2	Test 25 - Zn Ro Tail Cyc 4-6	Pulp	94.8	903	0.87	894.9	28.75	6.31	0.66	0.31	1.40	0.090	0.05	4.5	5.5	1.43	1273
3	Test 29 - Zn Ro Tail Cyc 1-6	Pulp	94.2	827	0.85	1128.4	28.90	6.58	0.66	0.31	1.80	0.105	0.05	4.4	5.6	1.44	1281
QUALITY ASSURANCE / QUALITY CONTROL																	
Pulp Replicates:																	
3	Test 29 - Zn Ro Tail Cyc 1-6	Pulp	94.9	749	0.91	763.6	28.88	6.87	0.69	0.34	1.32	0.086	0.05	5.8	5.7	1.46	1288
3 D	Test 29 - Zn Ro Tail Cyc 1-6	Pulp-Dup	95.6	747	0.90	745.6	28.98	6.58	0.66	0.31	1.32	0.085	0.05	5.1	6.2	1.46	1280
Certified Reference Material																	
STD OREAS 24b			16.0	105	9.38	37.5	3.90	11.44	0.25	0.57	0.01	0.046	1.18	31.3	45.2	1.40	339
True Value STD OREAS 24b			**15.7**	**106**	**9.15**	**36.4**	**3.93**	**10.80**	**0.26**	**0.52**	**<0.01**	**0.048**	**1.17**	**29.2**	**45.6**	**1.36**	**350**
% Difference			1.9	-0.9	2.5	3.0	-0.8	5.9	-3.8	9.6		-4.2	0.9	7.2	-0.9	2.9	-3.1
Tolerance (%)			***1.9***	***9***	***0.56***	***3.3***	***0.21***	***1.1***	***NR***	***NR***	***NR***	***NR***	***0.07***	***NR***	***3.5***	***0.07***	***20***
Method Blank:																	
Method Blank			<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5

Notes:

Job No: MA0102-JUN16.

Analytical Methods (IMS-130):

A 0.5 g of pulp sample is leached in hot (95°C) 3:1 aqua regia digestion followed by ICP Mass Spec analysis.
Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5 g).
Refractory and graphitic samples can limit Au solubility.

Abbreviations:

R / Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)
D / Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a second split of the original client sample received)
MDL = Measurable Detection Limit
IND = Indeterminate

On Cerfified Reference Material and Tolerance:

Any one element in a run reporting outside tolerance limits does not constitute failure of the standard.
As per Certificate of Analysis (COA): All values indicated are Certified. Values indicated in green are indicative only.
NR = Not Reported (in the Certificate Of Analysis).

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global
ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 3

S. No.	Sample ID	Method / Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
		Sample Type																									
1	Test 25 - Zn Ro Tail Cyc 1-3	Pulp	83.33	0.01	0.73	429.7	43	1811.2	3.7	0.013	>10	40.89	1.1	10.9	2.7	55.2	<0.01	0.12	5.7	<0.005	9.2	3.36	23	3.43	4.02	3033	13.2
2	Test 25 - Zn Ro Tail Cyc 4-6	Pulp	98.44	0.01	0.89	527.1	29	2035.4	3.3	0.013	>10	46.53	0.9	5.1	2.8	50.7	<0.01	0.09	5.1	<0.005	8.99	3.47	22	4.29	3.71	3618	12.5
3	Test 29 - Zn Ro Tail Cyc 1-6	Pulp	87.94	0.01	0.81	477.6	22	2052.2	3.2	0.012	>10	47.25	1	4.7	3	51.1	<0.01	0.06	4.9	<0.005	9.24	3.51	23	3.75	3.70	4672	12.2
QUALITY ASSURANCE / QUALITY CONTROL																											
Pulp Replicates:																											
3	Test 29 - Zn Ro Tail Cyc 1-6	Pulp	83.33	0.01	0.73	429.7	43	1811.2	3.7	0.013	>10	40.89	1.1	10.9	2.7	55.2	<0.01	0.12	5.7	<0.005	9.2	3.36	23	3.43	4.02	3033	13.2
3 D	Test 29 - Zn Ro Tail Cyc 1-6	Pulp-Dup	81.94	0.01	0.74	429.8	36	1807.3	3.3	0.011	>10	44.80	1	9.5	2.6	53.6	<0.01	0.03	5.1	<0.005	9.05	3.31	22	3.28	3.81	3026	12.1
Certified Reference Material																											
STD OREAS 24b			4.07	0.11	0.43	58.7	617	9.20	124.0	<0.001	0.19	0.50	9.80	0.40	2.30	30.9	<0.01	0.07	14.4	0.205	0.66	1.79	80	1.05	12.29	93	26.2
True Value STD OREAS 24b			**3.86**	**IND**	**0.31**	**57.0**	**620**	**9.23**	**114**	**<0.001**	**0.20**	**0.48**	**9.51**	**0.42**	**2.26**	**29.0**	**<0.05**	**<0.02**	**14.3**	**0.198**	**0.66**	**1.74**	**79**	**1.19**	**12.30**	**93**	**24.5**
% Difference			5.4		38.7	3.0	-0.5	-0.3	8.8	0.0	-5.0	4.2	3.0		1.8	6.6			0.7	3.5	0.0	2.9	1.3	-11.8	-0.1	0.0	6.9
Tolerance (%)			***0.37***	***NR***	***N/B***	***5***	***NR***	***1.29***	***15***	***NR***	***0.02***	***NR***	***1.39***	***NR***	***0.30***	***NR***	***NR***	***NR***	***1.1***	***0.017***	***0.08***	***0.26***	***5***	***NR***	***1.7***	***6***	***3.2***
Method Blank:																											
Method Blank			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5

Global
ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ MEND-SHAKE FLASK EXTRACTION RESULTS

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 4

Parameter	Method	Unit	RDL	DI Water SFE (24 h)						Sequential 5% H_2O_2 SFE (24 h per cycle)				
				1	1 R	2	3	3 D	Method Blank	Cycle-1	Cycle-2	Cycle-3	Cycle-4	Method Blank
				Sample ID						Sample ID				
				Test 25 - Zn Ro Tail Cyc 1-3	Test 25 - Zn Ro Tail Cyc 1-3 (Rep)	Test 25 - Zn Ro Tail Cyc 4-6	Test 29 - Zn Ro Tail Cyc 1-6	Test 29 - Zn Ro Tail Cyc 1-6 (Dup)		Test 29 - Zn Ro Tail Cyc 1-6				
Weight of dry sample used	Weighing Scale	g	0.01	250	N/A	250	250	250	N/A	250	Cycle-1 Resi	Cycle-2 Resi	Cycle-3 Resi	N/A
Volume of DI water used	Graduated Cylinder	mL	0.50	750	N/A	750	750	750	750	750	750	750	750	750
On filtered samples using 0.45 micron filter paper														
pH	pH Meter	pH units	0.01	7.31		7.09	7.31	7.36	5.48	6.95 / 6.93	6.95	7.27	7.49 / 7.51	4.48
EC	EC Meter	µS/cm	1	559		1362	1180	1238	0.90	2980 / 3000	1503	885 / 887	732 / 734	5.74
Acidity (to pH 8.3)	Titration/Calc.	mg CaCO3/L	0.5	37.0		234.0	62.0	67.0	7.0	500.0	139.5	54.0	28.0 / 27.5	237.5
Alkalinity (to pH 4.5)	Titration/Calc.	mg CaCO3/L	0.5	26.5		24.0	29.0	33.5	1.0	19.5	38.5	55.5	73.0	<0.5
Dissolved Sulphate (SO4)	Turbidimetry	mg/L	5.0 / 0.5 / 1.0	169	171	613	482	479	<0.5	2000		370	270	<1
Fluoride (F)	Selective Ion Electrode	mg/L	0.010	0.150		0.200	0.200	0.220		0.210		0.085	0.089	
Strong Acid Dissoc. Cyanide (CN)	SM 22 4500-CN O m	mg/L	0.00050	0.00057		0.00141	0.00179	0.00185						
Weak Acid Dissoc. Cyanide (CN)	SM 22 4500-CN O m	mg/L	0.00050	<0.00050		<0.00050	<0.00050	<0.00050						
Dissolved Metals Analysis by ICP-MS:														
Hardness, Total (as CaCO3)	ICP-MS	mg/L	0.1	215.9	219.1	641.5	604.6	574.8	<0.1	1560.0		412.0	318.0	<0.1
Aluminum, dissolved	ICP-MS	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001		0.002	<0.001	<0.001
Antimony, dissolved	ICP-MS	mg/L	0.00005	0.00322	0.00338	0.00260	0.00342	0.00323	<0.00005	0.01200		0.01370	0.01190	<0.00005
Arsenic, dissolved	ICP-MS	mg/L	0.00005	0.00035	0.00036	0.00345	0.00156	0.00135	<0.00005	0.00010		0.00017	0.00014	<0.00005
Barium, dissolved	ICP-MS	mg/L	0.0001	0.0342	0.0359	0.0191	0.0207	0.0214	<0.0001	0.0117		0.0218	0.0211	<0.0001
Beryllium, dissolved	ICP-MS	mg/L	0.00001	<0.00001	0.0000003	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010		<0.000010	<0.000010	<0.000010
Bismuth, dissolved	ICP-MS	mg/L	0.00001	0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010		<0.000010	<0.000010	<0.000010
Boron, dissolved	ICP-MS	mg/L	0.001	0.007	0.007	0.010	0.006	0.006	<0.001	0.005		0.002	0.002	<0.001
Cadmium, dissolved	ICP-MS	mg/L	0.000002	0.031700	0.033000	0.321000	0.090700	0.093200	<0.000002	1.880000		0.182000	0.090300	<0.000002
Calcium, dissolved	ICP-MS	mg/L	0.04	69.20	69.80	172.00	180.00	170.00	<0.040	487.00		134.00	99.10	<0.04
Chromium, dissolved	ICP-MS	mg/L	0.0001	<0.0001	0.00001	<0.0001	<0.0001	<0.0001	<0.0001	0.0148		0.0091	0.0109	0.00041
Cobalt, dissolved	ICP-MS	mg/L	0.000005	0.013900	0.014400	0.103000	0.032000	0.031900	<0.000005	0.104000		0.012400	0.005910	<0.000005
Copper, dissolved	ICP-MS	mg/L	0.0001	0.0058	0.0060	0.0141	0.0072	0.0075	0.0001	0.0325		0.1390	0.1460	0.0002
Iron, dissolved	ICP-MS	mg/L	0.002	<0.002	0.0009	<0.002	<0.002	<0.002	<0.002	0.002		0.028	<0.002	<0.002
Lead, dissolved	ICP-MS	mg/L	0.00005	0.12000	0.11800	0.26000	0.14300	0.16100	<0.00005	0.05300		0.00431	0.02520	<0.00005
Lithium, dissolved	ICP-MS	mg/L	0.00005	0.00706	0.00728	0.00766	0.00629	0.00582	<0.00005	0.01240		0.00182	0.00149	<0.00005
Magnesium, dissolved	ICP-MS	mg/L	0.005	10.600	11.000	51.800	38.000	36.800	<0.005	83.400		18.600	17.100	<0.005
Manganese, dissolved	ICP-MS	mg/L	0.00005	0.66800	0.69100	6.42000	1.31000	1.29000	<0.00005	8.82000		1.60000	0.96100	0.00011
Mercury, dissolved	ICP-MS	mg/L	0.00001	<0.00001	0.00000	<0.00001	0.00001	0.00001	<0.00001	<0.00001		<0.00001	<0.00001	<0.00001
Molybdenum, dissolved	ICP-MS	mg/L	0.00001	0.00101	0.00106	0.00020	0.00099	0.00087	<0.00001	0.07530		0.03790	0.03740	0.00006
Nickel, dissolved	ICP-MS	mg/L	0.00002	0.02740	0.02840	0.19900	0.05090	0.05010	<0.00002	0.57300		0.03270	0.01800	0.00022
Phosphorus, dissolved	ICP-MS	mg/L	0.01	0.04	0.04	0.19	0.17	0.17	<0.010	<0.010		<0.010	<0.010	0.06
Potassium, dissolved	ICP-MS	mg/L	0.01	3.39	3.50	7.11	6.63	6.36	<0.010	6.31		2.02	1.66	0.05
Selenium, dissolved	ICP-MS	mg/L	0.0001	0.0337	0.0332	0.4130	0.2430	0.2320	<0.0001	2.3800		0.4410	0.4590	<0.00010
Silicon, dissolved	ICP-MS	mg/L	0.05	0.45	0.46	0.61	0.41	0.37	<0.050	1.01		0.51	0.48	<0.05
Silver, dissolved	ICP-MS	mg/L	0.00001	0.00002	0.00002	0.00006	0.00047	0.00050	<0.00001	<0.000010		<0.000010	<0.000010	<0.000010
Sodium, dissolved	ICP-MS	mg/L	0.01	3.93	4.05	8.45	4.56	4.45	<0.010	4.59		0.15	0.08	<0.010
Strontium, dissolved	ICP-MS	mg/L	0.0001	0.1010	0.1050	0.5340	0.1960	0.1900	<0.0001	0.9410		0.2500	0.1920	<0.00010
Sulphur, dissolved	ICP-MS	mg/L	0.5	67.7	69.7	252.0	239.0	229.0	<0.500	696.0		144.0	93.0	<0.5
Tellurium, dissolved	ICP-MS	mg/L	0.00005	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005
Thallium, dissolved	ICP-MS	mg/L	0.000004	0.014900	0.014800	0.056800	0.042400	0.041600	<0.000004	0.047700		0.013700	0.011800	<0.000004
Thorium, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000010		<0.000010	<0.000010	<0.000010
Tin, dissolved	ICP-MS	mg/L	0.00005	<0.00005	0.00002	<0.00005	<0.00005	<0.00005	<0.00005	0.00028		<0.00005	<0.00005	0.03340
Titanium, dissolved	ICP-MS	mg/L	0.0002	<0.0002	0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	0.0002
Uranium, dissolved	ICP-MS	mg/L	0.000001	0.000043	0.000043	0.000053	0.000166	0.000127	<0.000001	0.000002		0.000002	0.000002	<0.000001
Vanadium, dissolved	ICP-MS	mg/L	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006		0.0012	0.0012	<0.0002
Zinc, dissolved	ICP-MS	mg/L	0.001	3.060	3.180	24.400	6.430	6.570	<0.001	287.000		22.200	10.900	0.003
Zirconium, dissolved	ICP-MS	mg/L	0.00002	<0.00002	0.0000009	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002		<0.00002	<0.00002	<0.00002
Ion Balance														
Major Anions	Calc.	meq/L		4.06	4.10	13.26	10.63	10.66		42.07		8.82	7.09	
Major Cations	Calc.	meq/L		4.70	4.78	14.39	12.73	12.12		40.64		9.02	6.78	
Difference	Calc.	meq/L		-0.64	-0.68	-1.13	-2.09	-1.46		1.42		-0.20	0.31	
Balance (%)	Calc.	%		-7.4%	-7.6%	-4.1%	-9.0%	-6.4%		1.7%		-1.1%	2.3%	
Shake Flask Extract ID:			*Anions:*	*OY0938*	*N/A*	*OY0939*	*OY0940*	*OY0941*		*PQ1293*		*PQ1321*	*PQ1322*	
			Diss. Metals:	*6062475-01*	*6062475-01*	*6062475-02*	*6062475-03*	*6062475-04*	*6062475-05*	*6092176-01*		*6092176-02*	*6092176-03*	*6092176-04*

Notes (DI Water SFE):
Job No: Anions: B652722V1; Cyanide: B652722V2; Metals (Cations): 6062475.
Date of Analysis (24h): June 27/28, 2016.
pH of DI water used (pH Units): 5.78
EC of DI water used (µS/cm): 0.48

Notes (5% H2O2 SFE):
Job No: Anions: B685297V1; Dissolved Metals: 6092176.
Date of Analysis (4 Cycles x 24 h each): September 19 to 23, 2016
pH of 5% H2O2 used (pH Units): 5.51
EC of 5% H2O2 used (µS/cm): 5.79

Abbreviations:
R / Rep = Replicate (which involves the analysis of the same Shake Flask Extract aliquot).
D / Dup = Duplicate (which involves the analysis of a 2nd SF extract, produced by processing a separate split of the original client sample received).
EC = Electrical Conductivity
ORP = Oxidation Reduction Potential
RDL = Reportable Detection Limit.
Calc. = Calculation

Method Reference: Prediction Manual for Drainage Chemistry from Sulphidic Geologic Material, MEND Report 1.20.1; Version 0 - Dec. 2009. Section 11.5; P 11 (8-9).
Extraction Method used: Using Gyratory Shaker for 24 h (± 2 h - gentle agitation).
Liquid:Solid ratio used: 3:1; 750 mL DI H_2O: 250 g of as-received homogenized material (tails).

CERTIFICATE OF ANALYSIS ▪ MEND-SFE QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 4

DI-SFE: Sulphate, Fluoride, Total & WAD-CN:

QA/QC Batch	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
8316695	Matrix Spike	Dissolved Sulphate (SO4)	2016/06/30		87	%	80 - 120
8316695	Spiked Blank	Dissolved Sulphate (SO4)	2016/06/30		99	%	80 - 120
8316695	Method Blank	Dissolved Sulphate (SO4)	2016/06/30	0.54, RDL=0.50		mg/L	
8316695	RPD	Dissolved Sulphate (SO4)	2016/06/30	12		%	20
		Dissolved Sulphate (SO4)	2016/06/30	12		%	20
		Dissolved Sulphate (SO4)	2016/06/30	15		%	20
8316856	Matrix Spike	Fluoride (F)	2016/06/30		104	%	80 - 120
8316856	Spiked Blank	Fluoride (F)	2016/06/30		102	%	80 - 120
8316856	Method Blank	Fluoride (F)	2016/06/30	<0.010		mg/L	
8316856	RPD [OY0940-01]	Fluoride (F)	2016/06/30	0		%	20
8318818	Spiked Blank	Dissolved Sulphate (SO4)	2016/07/04		92	%	80 - 120
8318818	Method Blank	Dissolved Sulphate (SO4)	2016/07/04	<0.50		mg/L	
8367999	Matrix Spike	Strong Acid Dissoc. Cyanide (CN)	2016/08/18		102	%	80 - 120
8367999	Spiked Blank	Strong Acid Dissoc. Cyanide (CN)	2016/08/18		101	%	80 - 120
8367999	Method Blank	Strong Acid Dissoc. Cyanide (CN)	2016/08/18	<0.00050		mg/L	
8367999	RPD	Strong Acid Dissoc. Cyanide (CN)	2016/08/18	2.2		%	20
8368007	Spiked Blank	Weak Acid Dissoc. Cyanide (CN)	2016/08/18		99	%	80 - 120
8368007	Method Blank	Weak Acid Dissoc. Cyanide (CN)	2016/08/18	<0.00050		mg/L	

Notes:
Job Number: B652722V2
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

5% H2O2-SFE: Sulphate & Fluoride:

8417402	Matrix Spike	Fluoride (F)	2016/09/30		100	%	80 - 120
8417402	Spiked Blank	Fluoride (F)	2016/09/30		96	%	80 - 120
8417402	Method Blank	Fluoride (F)	2016/09/30	0.014, RDL=0.010		mg/L	
8417402	RPD	Fluoride (F)	2016/09/30	0		%	20
8417413	Matrix Spike	Fluoride (F)	2016/09/30		98	%	80 - 120
8417413	Spiked Blank	Fluoride (F)	2016/09/30		94	%	80 - 120
8417413	Method Blank	Fluoride (F)	2016/09/30	0.013, RDL=0.010		mg/L	
8417413	RPD	Fluoride (F)	2016/09/30	2.8		%	20
8421110	Matrix Spike	Dissolved Sulphate (SO4)	2016/10/04		NC	%	80 - 120
8421110	Spiked Blank	Dissolved Sulphate (SO4)	2016/10/04		104	%	80 - 120
8421110	Method Blank	Dissolved Sulphate (SO4)	2016/10/04	<1.0		mg/L	
8421110	RPD	Dissolved Sulphate (SO4)	2016/10/04	1.7		%	20

Notes:
Job No: B685297
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

DI-SFE: Dissolved Metals by ICP-MS:

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6062475_B6F1964-BLK1	Aluminum dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.001	mg/L		
6062475_B6F1964-BLK1	Antimony dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-BLK1	Arsenic dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-BLK1	Barium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L		
6062475_B6F1964-BLK1	Beryllium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-BLK1	Bismuth dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-BLK1	Boron dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.001	mg/L		
6062475_B6F1964-BLK1	Cadmium dissolved	<	0.000002	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000002	mg/L		
6062475_B6F1964-BLK1	Calcium dissolved	<	0.04	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.04	mg/L		
6062475_B6F1964-BLK1	Chromium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L		
6062475_B6F1964-BLK1	Cobalt dissolved	<	0.000005	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000005	mg/L		
6062475_B6F1964-BLK1	Copper dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L		
6062475_B6F1964-BLK1	Iron dissolved	<	0.002	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.002	mg/L		
6062475_B6F1964-BLK1	Lead dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-BLK1	Lithium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-BLK1	Magnesium dissolved	<	0.005	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.005	mg/L		
6062475_B6F1964-BLK1	Manganese dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-BLK1	Mercury dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-BLK1	Molybdenum dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-BLK1	Nickel dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00002	mg/L		
6062475_B6F1964-BLK1	Phosphorus dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.01	mg/L		
6062475_B6F1964-BLK1	Potassium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.01	mg/L		
6062475_B6F1964-BLK1	Selenium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L		
6062475_B6F1964-BLK1	Silicon dissolved	<	0.05	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.05	mg/L		
6062475_B6F1964-BLK1	Silver dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-BLK1	Sodium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.01	mg/L		
6062475_B6F1964-BLK1	Strontium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L		
6062475_B6F1964-BLK1	Sulfur dissolved	<	0.5	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.5	mg/L		
6062475_B6F1964-BLK1	Tellurium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-BLK1	Thallium dissolved	<	0.000004	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000004	mg/L		
6062475_B6F1964-BLK1	Thorium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-BLK1	Tin dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-BLK1	Titanium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0002	mg/L		
6062475_B6F1964-BLK1	Uranium dissolved	<	0.000001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000001	mg/L		
6062475_B6F1964-BLK1	Vanadium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0002	mg/L		
6062475_B6F1964-BLK1	Zinc dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.001	mg/L		
6062475_B6F1964-BLK1	Zirconium dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00002	mg/L		
6062475_B6F1964-DUP1 = 6062475-01 = Test 25-Cyc 1-3 (SFE)												
6062475_B6F1964-DUP1	Aluminum dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.001	mg/L		
6062475_B6F1964-DUP1	Antimony dissolved		0.00338	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-DUP1	Arsenic dissolved		0.00036	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-DUP1	Barium dissolved		0.0359	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L		
6062475_B6F1964-DUP1	Beryllium dissolved		0.0000003	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-DUP1	Bismuth dissolved		0.00001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-DUP1	Boron dissolved		0.007	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.001	mg/L		
6062475_B6F1964-DUP1	Cadmium dissolved		0.033	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000002	mg/L		
6062475_B6F1964-DUP1	Calcium dissolved		69.8	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.04	mg/L		
6062475_B6F1964-DUP1	Chromium dissolved		0.00001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L		
6062475_B6F1964-DUP1	Cobalt dissolved		0.0144	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000005	mg/L		
6062475_B6F1964-DUP1	Copper dissolved		0.006	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L		
6062475_B6F1964-DUP1	Iron dissolved		0.0009	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.002	mg/L		
6062475_B6F1964-DUP1	Lead dissolved		0.118	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-DUP1	Lithium dissolved		0.00728	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-DUP1	Magnesium dissolved		11	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.005	mg/L		
6062475_B6F1964-DUP1	Manganese dissolved		0.691	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-DUP1	Mercury dissolved		0.000003	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-DUP1	Molybdenum dissolved		0.00106	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-DUP1	Nickel dissolved		0.0284	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00002	mg/L		
6062475_B6F1964-DUP1	Phosphorus dissolved		0.041	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.01	mg/L		
6062475_B6F1964-DUP1	Potassium dissolved		3.5	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.01	mg/L		
6062475_B6F1964-DUP1	Selenium dissolved		0.0332	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L		
6062475_B6F1964-DUP1	Silicon dissolved		0.462	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.05	mg/L		
6062475_B6F1964-DUP1	Silver dissolved		0.00002	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-DUP1	Sodium dissolved		4.05	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.01	mg/L		
6062475_B6F1964-DUP1	Strontium dissolved		0.105	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L		
6062475_B6F1964-DUP1	Sulfur dissolved		69.7	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.5	mg/L		
6062475_B6F1964-DUP1	Tellurium dissolved		0.000006	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-DUP1	Thallium dissolved		0.0148	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000004	mg/L		
6062475_B6F1964-DUP1	Thorium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L		
6062475_B6F1964-DUP1	Tin dissolved		0.00002	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L		
6062475_B6F1964-DUP1	Titanium dissolved		0.00005	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0002	mg/L		
6062475_B6F1964-DUP1	Uranium dissolved		0.000043	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000001	mg/L		
6062475_B6F1964-DUP1	Vanadium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0002	mg/L		
6062475_B6F1964-DUP1	Zinc dissolved		3.18	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.001	mg/L		
6062475_B6F1964-DUP1	Zirconium dissolved		0.0000009	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00002	mg/L		

Global
ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ MEND-SFE QA/QC RESULTS

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 4

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6062475_B6F1964-MS1	Antimony dissolved		0.0453	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L	114	81
6062475_B6F1964-MS1	Arsenic dissolved		0.0244	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L	115	89
6062475_B6F1964-MS1	Barium dissolved		0.125	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L	115	86
6062475_B6F1964-MS1	Beryllium dissolved		0.00829	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L	124	77
6062475_B6F1964-MS1	Cadmium dissolved		0.335	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000002	mg/L	126	82
6062475_B6F1964-MS1	Chromium dissolved		0.0428	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L	117	85
6062475_B6F1964-MS1	Cobalt dissolved		0.145	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000005	mg/L	131	76
6062475_B6F1964-MS1	Copper dissolved		0.0575	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L	113	88
6062475_B6F1964-MS1	Iron dissolved		0.217	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.002	mg/L	115	80
6062475_B6F1964-MS1	Lead dissolved		0.283	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L	121	84
6062475_B6F1964-MS1	Manganese dissolved		6.44	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00005	mg/L	135	75
6062475_B6F1964-MS1	Nickel dissolved		0.24	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00002	mg/L	121	83
6062475_B6F1964-MS1	Selenium dissolved		0.418	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0001	mg/L	122	91
6062475_B6F1964-MS1	Silver dissolved		0.00749	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.00001	mg/L	120	74
6062475_B6F1964-MS1	Thallium dissolved		0.0679	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.000004	mg/L	119	79
6062475_B6F1964-MS1	Vanadium dissolved		0.0439	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.0002	mg/L	115	80
6062475_B6F1964-MS1	Zinc dissolved		24.2	mg/L	F	metals	APHA 3125 B	30-Jun-16	0.001	mg/L	123	89
6062475_B6F1964-SRM1	Aluminum dissolved		113	%	F	metals	APHA 3125 B	30-Jun-16	1	%	142	58
6062475_B6F1964-SRM1	Antimony dissolved		114	%	F	metals	APHA 3125 B	30-Jun-16	1	%	125	75
6062475_B6F1964-SRM1	Arsenic dissolved		111	%	F	metals	APHA 3125 B	30-Jun-16	1	%	119	81
6062475_B6F1964-SRM1	Barium dissolved		108	%	F	metals	APHA 3125 B	30-Jun-16	1	%	117	83
6062475_B6F1964-SRM1	Beryllium dissolved		107	%	F	metals	APHA 3125 B	30-Jun-16	1	%	120	80
6062475_B6F1964-SRM1	Boron dissolved		110	%	F	metals	APHA 3125 B	30-Jun-16	1	%	117	74
6062475_B6F1964-SRM1	Cadmium dissolved		110	%	F	metals	APHA 3125 B	30-Jun-16	1	%	117	83
6062475_B6F1964-SRM1	Calcium dissolved		108	%	F	metals	APHA 3125 B	30-Jun-16	1	%	124	76
6062475_B6F1964-SRM1	Chromium dissolved		113	%	F	metals	APHA 3125 B	30-Jun-16	1	%	119	81
6062475_B6F1964-SRM1	Cobalt dissolved		114	%	F	metals	APHA 3125 B	30-Jun-16	1	%	124	76
6062475_B6F1964-SRM1	Copper dissolved		115	%	F	metals	APHA 3125 B	30-Jun-16	1	%	116	84
6062475_B6F1964-SRM1	Iron dissolved		113	%	F	metals	APHA 3125 B	30-Jun-16	1	%	126	74
6062475_B6F1964-SRM1	Lead dissolved		108	%	F	metals	APHA 3125 B	30-Jun-16	1	%	128	72
6062475_B6F1964-SRM1	Lithium dissolved		109	%	F	metals	APHA 3125 B	30-Jun-16	1	%	140	60
6062475_B6F1964-SRM1	Magnesium dissolved		115	%	F	metals	APHA 3125 B	30-Jun-16	1	%	119	81
6062475_B6F1964-SRM1	Manganese dissolved		113	%	F	metals	APHA 3125 B	30-Jun-16	1	%	116	84
6062475_B6F1964-SRM1	Molybdenum dissolved		109	%	F	metals	APHA 3125 B	30-Jun-16	1	%	117	83
6062475_B6F1964-SRM1	Nickel dissolved		114	%	F	metals	APHA 3125 B	30-Jun-16	1	%	126	74
6062475_B6F1964-SRM1	Phosphorus dissolved		120	%	F	metals	APHA 3125 B	30-Jun-16	1	%	132	68
6062475_B6F1964-SRM1	Potassium dissolved		115	%	F	metals	APHA 3125 B	30-Jun-16	1	%	126	74
6062475_B6F1964-SRM1	Selenium dissolved		98	%	F	metals	APHA 3125 B	30-Jun-16	1	%	130	70
6062475_B6F1964-SRM1	Sodium dissolved		111	%	F	metals	APHA 3125 B	30-Jun-16	1	%	128	72
6062475_B6F1964-SRM1	Strontium dissolved		109	%	F	metals	APHA 3125 B	30-Jun-16	1	%	113	84
6062475_B6F1964-SRM1	Thallium dissolved		106	%	F	metals	APHA 3125 B	30-Jun-16	1	%	143	57
6062475_B6F1964-SRM1	Uranium dissolved		104	%	F	metals	APHA 3125 B	30-Jun-16	1	%	115	85
6062475_B6F1964-SRM1	Vanadium dissolved		110	%	F	metals	APHA 3125 B	30-Jun-16	1	%	113	87
6062475_B6F1964-SRM1	Zinc dissolved		111	%	F	metals	APHA 3125 B	30-Jun-16	1	%	128	72

5% H2O2-SFE: Dissolved Metals by ICP-MS:

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6092176_B6J0178-BLK1	Aluminum dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.001	mg/L		
6092176_B6J0178-BLK1	Antimony dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092176_B6J0178-BLK1	Arsenic dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092176_B6J0178-BLK1	Barium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092176_B6J0178-BLK1	Beryllium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092176_B6J0178-BLK1	Bismuth dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092176_B6J0178-BLK1	Boron dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.001	mg/L		
6092176_B6J0178-BLK1	Cadmium dissolved	<	0.000002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000002	mg/L		
6092176_B6J0178-BLK1	Calcium dissolved	<	0.04	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.04	mg/L		
6092176_B6J0178-BLK1	Chromium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092176_B6J0178-BLK1	Cobalt dissolved	<	0.000005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000005	mg/L		
6092176_B6J0178-BLK1	Copper dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092176_B6J0178-BLK1	Iron dissolved	<	0.002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.002	mg/L		
6092176_B6J0178-BLK1	Lead dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092176_B6J0178-BLK1	Lithium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092176_B6J0178-BLK1	Magnesium dissolved	<	0.005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.005	mg/L		
6092176_B6J0178-BLK1	Manganese dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092176_B6J0178-BLK1	Mercury dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092176_B6J0178-BLK1	Molybdenum dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092176_B6J0178-BLK1	Nickel dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00002	mg/L		
6092176_B6J0178-BLK1	Phosphorus dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.01	mg/L		
6092176_B6J0178-BLK1	Potassium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.01	mg/L		
6092176_B6J0178-BLK1	Selenium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092176_B6J0178-BLK1	Silicon dissolved	<	0.05	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.05	mg/L		
6092176_B6J0178-BLK1	Silver dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092176_B6J0178-BLK1	Sodium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.01	mg/L		
6092176_B6J0178-BLK1	Strontium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0001	mg/L		
6092176_B6J0178-BLK1	Sulfur dissolved	<	0.5	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.5	mg/L		
6092176_B6J0178-BLK1	Tellurium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092176_B6J0178-BLK1	Thallium dissolved	<	0.000004	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000004	mg/L		
6092176_B6J0178-BLK1	Thorium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00001	mg/L		
6092176_B6J0178-BLK1	Tin dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00005	mg/L		
6092176_B6J0178-BLK1	Titanium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0002	mg/L		
6092176_B6J0178-BLK1	Uranium dissolved	<	0.000001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.000001	mg/L		
6092176_B6J0178-BLK1	Vanadium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.0002	mg/L		
6092176_B6J0178-BLK1	Zinc dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.001	mg/L		
6092176_B6J0178-BLK1	Zirconium dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	5-Oct-16	0.00002	mg/L		
6092176_B6J0178-SRM1	Aluminum dissolved		97	%	F	metals	APHA 3125 B	5-Oct-16	1	%	142	58
6092176_B6J0178-SRM1	Antimony dissolved		104	%	F	metals	APHA 3125 B	5-Oct-16	1	%	125	75
6092176_B6J0178-SRM1	Arsenic dissolved		102	%	F	metals	APHA 3125 B	5-Oct-16	1	%	119	81
6092176_B6J0178-SRM1	Barium dissolved		101	%	F	metals	APHA 3125 B	5-Oct-16	1	%	117	83
6092176_B6J0178-SRM1	Beryllium dissolved		103	%	F	metals	APHA 3125 B	5-Oct-16	1	%	120	80
6092176_B6J0178-SRM1	Boron dissolved		93	%	F	metals	APHA 3125 B	5-Oct-16	1	%	117	74
6092176_B6J0178-SRM1	Cadmium dissolved		98	%	F	metals	APHA 3125 B	5-Oct-16	1	%	117	83
6092176_B6J0178-SRM1	Calcium dissolved		104	%	F	metals	APHA 3125 B	5-Oct-16	1	%	124	76
6092176_B6J0178-SRM1	Chromium dissolved		101	%	F	metals	APHA 3125 B	5-Oct-16	1	%	119	81
6092176_B6J0178-SRM1	Cobalt dissolved		104	%	F	metals	APHA 3125 B	5-Oct-16	1	%	124	76
6092176_B6J0178-SRM1	Copper dissolved		104	%	F	metals	APHA 3125 B	5-Oct-16	1	%	116	84
6092176_B6J0178-SRM1	Iron dissolved		101	%	F	metals	APHA 3125 B	5-Oct-16	1	%	126	74
6092176_B6J0178-SRM1	Lead dissolved		102	%	F	metals	APHA 3125 B	5-Oct-16	1	%	128	72
6092176_B6J0178-SRM1	Lithium dissolved		102	%	F	metals	APHA 3125 B	5-Oct-16	1	%	140	60
6092176_B6J0178-SRM1	Magnesium dissolved		102	%	F	metals	APHA 3125 B	5-Oct-16	1	%	119	81
6092176_B6J0178-SRM1	Manganese dissolved		99	%	F	metals	APHA 3125 B	5-Oct-16	1	%	116	84
6092176_B6J0178-SRM1	Molybdenum dissolved		101	%	F	metals	APHA 3125 B	5-Oct-16	1	%	117	83
6092176_B6J0178-SRM1	Nickel dissolved		103	%	F	metals	APHA 3125 B	5-Oct-16	1	%	126	74
6092176_B6J0178-SRM1	Phosphorus dissolved		100	%	F	metals	APHA 3125 B	5-Oct-16	1	%	132	68
6092176_B6J0178-SRM1	Potassium dissolved		102	%	F	metals	APHA 3125 B	5-Oct-16	1	%	126	74
6092176_B6J0178-SRM1	Selenium dissolved		103	%	F	metals	APHA 3125 B	5-Oct-16	1	%	130	70
6092176_B6J0178-SRM1	Sodium dissolved		101	%	F	metals	APHA 3125 B	5-Oct-16	1	%	128	72
6092176_B6J0178-SRM1	Strontium dissolved		96	%	F	metals	APHA 3125 B	5-Oct-16	1	%	113	84
6092176_B6J0178-SRM1	Thallium dissolved		100	%	F	metals	APHA 3125 B	5-Oct-16	1	%	143	57
6092176_B6J0178-SRM1	Uranium dissolved		99	%	F	metals	APHA 3125 B	5-Oct-16	1	%	115	85
6092176_B6J0178-SRM1	Vanadium dissolved		100	%	F	metals	APHA 3125 B	5-Oct-16	1	%	113	87
6092176_B6J0178-SRM1	Zinc dissolved		103	%	F	metals	APHA 3125 B	5-Oct-16	1	%	128	72

Notes:
Job No: 6061535
EQL = Estimated Quantitation Limits
PQL = Practical Quantitation Limits
BLK = Method Blank
DUP = Duplicate
MS = Matrix Spike
SRM = Standard Reference Materials
UCL = Upper Control Limit
LCL = Lower Control Limit

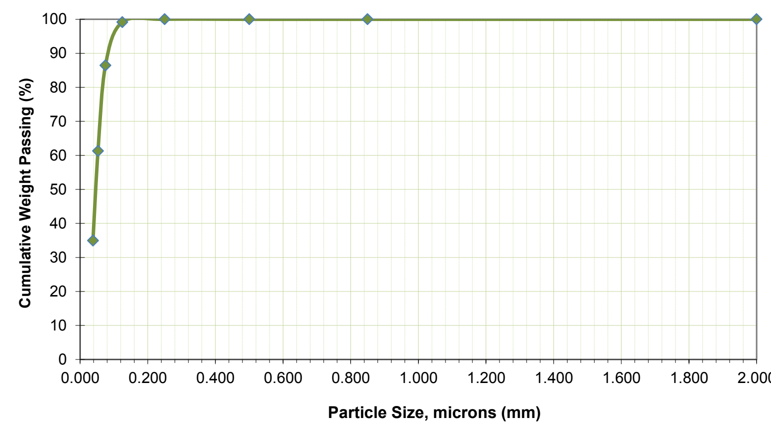
CERTIFICATE OF ANALYSIS ▪ RESULTS OF PARTICLE SIZE DISTRIBUTION

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 4

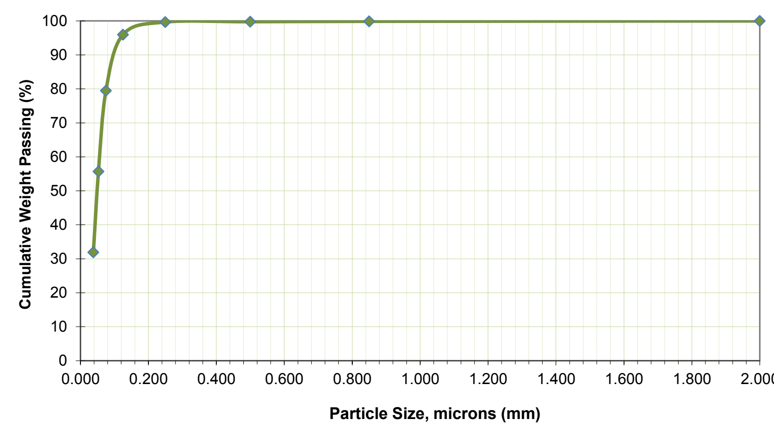
Sample ID: 1. Test 25 - Zn Ro Tail Cyc 1-3

Tyler Mesh	U.S Mesh	Opening (mm)	Screen (inches)	Mass (g)	% Retained		% Passing
					Interval	Cumulative	
9	10	2.000	0.079	0.0	0.0	0.0	100.0
20	20	0.850	0.0331	0.0	0.0	0.0	100.0
40	35	0.500	0.0197	0.0	0.0	0.0	100.0
60	60	0.250	0.0098	0.0	0.0	0.0	100.0
115	120	0.125	0.0049	2.1	0.8	0.8	99.2
200	200	0.075	0.0029	31.8	12.7	13.6	86.4
270	270	0.053	0.0021	62.7	25.1	38.7	61.3
400	400	0.038	0.0015	65.9	26.4	65.1	34.9
<400	<400 (Pan)	<0.037	<0.0015	87.2	34.9	100.0	0.0
	Used: 250 g and ro-tapped for 10 minutes:			**249.6**	100.0		



Sample ID: 2. Test 25 - Zn Ro Tail Cyc 4-6

Tyler Mesh	U.S Mesh	Opening (mm)	Screen (inches)	Mass (g)	% Retained		% Passing
					Interval	Cumulative	
9	10	2.000	0.079	0.0	0.0	0.0	100.0
20	20	0.850	0.0331	0.3	0.1	0.1	99.9
40	35	0.500	0.0197	0.3	0.1	0.2	99.8
60	60	0.250	0.0098	0.2	0.1	0.3	99.7
115	120	0.125	0.0049	9.3	3.7	4.1	95.9
200	200	0.075	0.0029	40.8	16.4	20.5	79.5
270	270	0.053	0.0021	59.1	23.8	44.3	55.7
400	400	0.038	0.0015	59.0	23.8	68.1	31.9
<400	<400 (Pan)	<0.037	<0.0015	79.1	31.9	100.0	0.0
	Used: 250 g and ro-tapped for 10 minutes:			**248.1**	100.0		

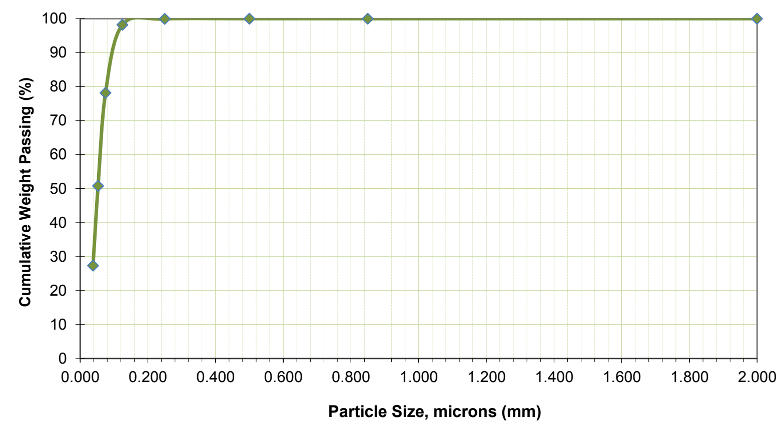


CERTIFICATE OF ANALYSIS ▪ RESULTS OF PARTICLE SIZE DISTRIBUTION

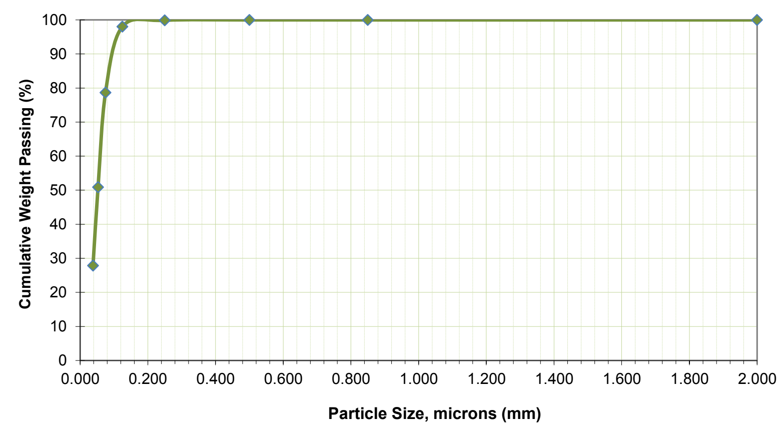
Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 4

Sample ID: 3. Test 29 - Zn Ro Tail Cyc 1-6							
Tyler Mesh	U.S Mesh	Opening (mm)	Screen (inches)	Mass (g)	% Retained Interval	% Retained Cumulative	% Passing
9	10	2.000	0.079	0.0	0.0	0.0	100.0
20	20	0.850	0.0331	0.0	0.0	0.0	100.0
40	35	0.500	0.0197	0.0	0.0	0.0	100.0
60	60	0.250	0.0098	0.2	0.1	0.1	99.9
115	120	0.125	0.0049	4.3	1.7	1.8	98.2
200	200	0.075	0.0029	50.0	20.1	21.9	78.1
270	270	0.053	0.0021	68.2	27.4	49.2	50.8
400	400	0.038	0.0015	58.5	23.5	72.7	27.3
<400	<400 (Pan)	<0.037	<0.0015	68.1	27.3	100.0	0.0
Used: 250 g and ro-tapped for 10 minutes:				**249.3**	100.0		



Sample ID: 3D. Test 29 - Zn Ro Tail Cyc 1-6 (Dup)							
Tyler Mesh	U.S Mesh	Opening (mm)	Screen (inches)	Mass (g)	% Retained Interval	% Retained Cumulative	% Passing
9	10	2.000	0.079	0.0	0.0	0.0	100.0
20	20	0.850	0.0331	0.0	0.0	0.0	100.0
40	35	0.500	0.0197	0.0	0.0	0.0	100.0
60	60	0.250	0.0098	0.3	0.1	0.1	99.9
115	120	0.125	0.0049	4.6	1.8	2.0	98.0
200	200	0.075	0.0029	48.3	19.4	21.3	78.7
270	270	0.053	0.0021	69.3	27.8	49.1	50.9
400	400	0.038	0.0015	57.4	23.0	72.1	27.9
<400	<400 (Pan)	<0.037	<0.0015	69.5	27.9	100.0	0.0
Used: 250 g and ro-tapped for 10 minutes:				**249.4**	100.0		



Date Analysed: July 11, 2016 (Monday)

QUANTITATIVE PHASE ANALYSIS OF 1 POWDER SAMPLE USING THE RIETVELD METHOD AND X-RAY POWDER DIFFRACTION DATA.

Project: 1522 - BMC-15-03

Ivy Rajan
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6891 Antrim Avenue
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6339 Stores Road
Vancouver, BC V6T 1Z4

September 29, 2016

EXPERIMENTAL METHOD

The sample **KZK - A17107 (Test #1-20)** of **Project 1522 - BMC-15-03** was reduced to the optimum grain-size range for quantitative X-ray analysis (<10 μm) by grinding under ethanol in a vibratory McCrone Micronising Mill for 10 minutes. Step-scan X-ray powder-diffraction data were collected over a range 3-80°2θ with CoKα radiation on a Bruker D8 Advance Bragg-Brentano diffractometer equipped with an Fe monochromator foil, 0.6 mm (0.3°) divergence slit, incident- and diffracted-beam Soller slits and a LynxEye-XE detector. The long fine-focus Co X-ray tube was operated at 35 kV and 40 mA, using a take-off angle of 6°.

RESULTS

The X-ray diffractogram was analyzed using the International Centre for Diffraction Database PDF-4 and Search-Match software by Bruker. X-ray powder-diffraction data of the sample was refined with Rietveld program Topas 4.2 (Bruker AXS). The results of quantitative phase analysis by Rietveld refinements are given in Table 1. These amounts represent the relative amounts of crystalline phases normalized to 100%. The Rietveld refinement plot is shown in Figure 1.

Table 2. Results of quantitative phase analysis (wt.%) XRD-Rietveld – Project 1522 - BMC-15-03

Mineral	**Ideal Formula**	**KZK- A17107 (Test #1-20)**
Ankerite-Dolomite	$Ca(Fe^{2+},Mg,Mn)(CO_3)_2$-$CaMg(CO_3)_2$	10.0
Barite	$BaSO_4$	3.0
Calcite	$CaCO_3$	2.2
Clinochlore	$(Mg,Fe^{2+})_5Al(Si_3Al)O_{10}(OH)_8$	4.4
Gypsum	$CaSO_4 \cdot 2H_2O$	0.8
Illite-Muscovite 2M1	$K_{0.65}Al_{2.0}Al_{0.65}Si_{3.35}O_{10}(OH)_2$-$KAl_2AlSi_3O_{10}(OH)_2$	9.8
Magnetite	Fe_3O_4	2.2
Pyrite	FeS_2	51.9
Pyrrhotite	$Fe_{1-x}S$	3.0
Quartz	SiO_2	8.6
Siderite	$Fe^{2+}CO_3$	4.2
Total		100.0

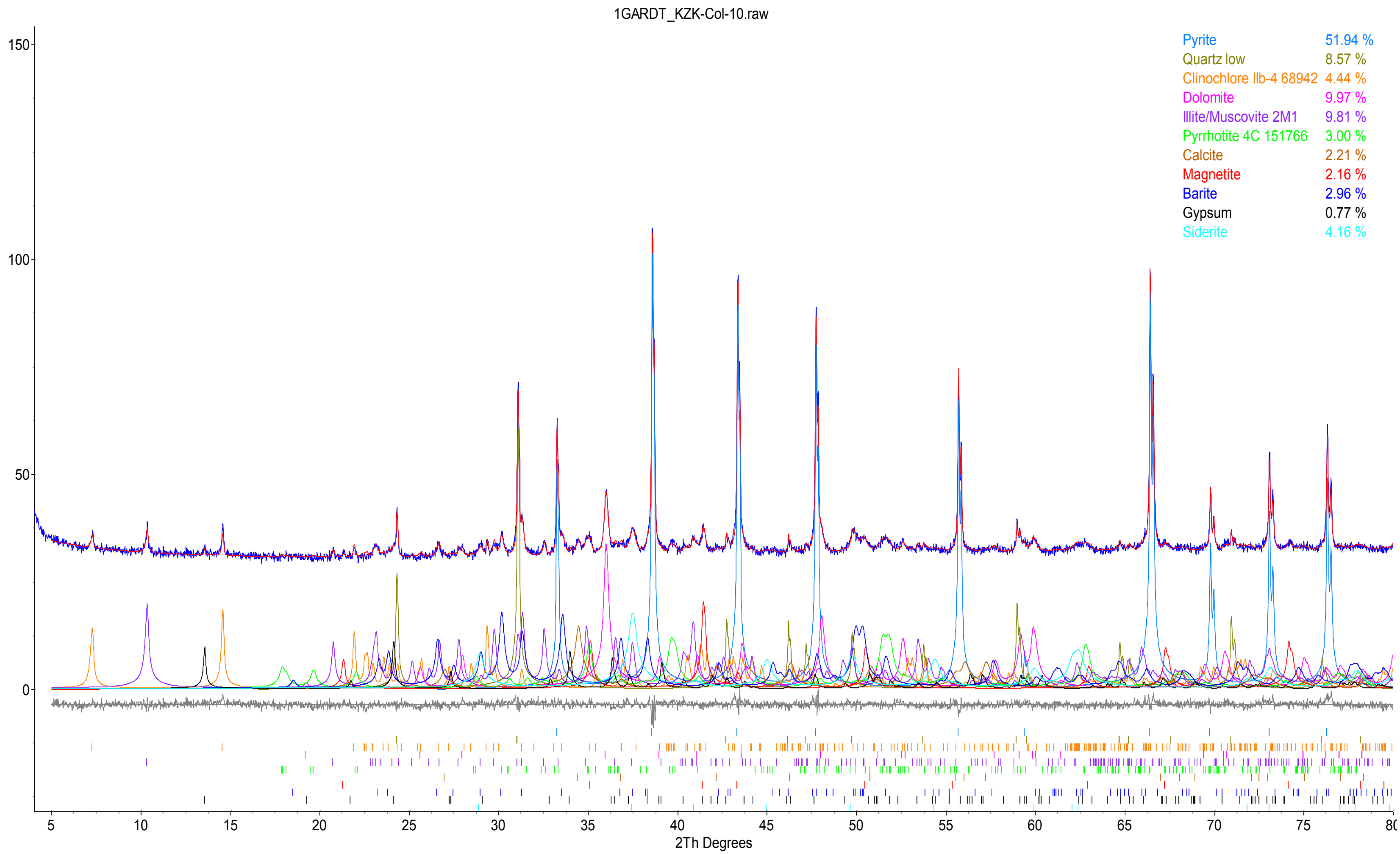

Figure 1. Rietveld refinement plot of sample **Global ARD Testing Services KZK- A17107 (Test #1-20)** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

QUANTITATIVE PHASE ANALYSIS OF 1 POWDER SAMPLE USING THE RIETVELD METHOD AND X-RAY POWDER DIFFRACTION DATA.

Project: 1522-BMC-15-03

Ivy Rajan
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The University of British Columbia
6339 Stores Road
Vancouver, BC V6T 1Z4

July 8, 2016

EXPERIMENTAL METHOD

The sample of **Project 1522-BMC-15-03** was reduced to the optimum grain-size range for quantitative X-ray analysis (<10 μm) by grinding under ethanol in a vibratory McCrone Micronising Mill for 10 minutes. Step-scan X-ray powder-diffraction data were collected over a range 3-80°2θ with CoKα radiation on a Bruker D8 Advance Bragg-Brentano diffractometer equipped with an Fe monochromator foil, 0.6 mm (0.3°) divergence slit, incident- and diffracted-beam Soller slits and a LynxEye-XE detector. The long fine-focus Co X-ray tube was operated at 35 kV and 40 mA, using a take-off angle of 6°.

RESULTS

The X-ray diffractogram was analyzed using the International Centre for Diffraction Database PDF-4 and Search-Match software by Bruker. X-ray powder-diffraction data of the sample was refined with Rietveld program Topas 4.2 (Bruker AXS). The results of quantitative phase analysis by Rietveld refinements are given in Table 1. These amounts represent the relative amounts of crystalline phases normalized to 100%. The Rietveld refinement plot is shown in Figure 1.

Table 1. Results of quantitative phase analysis (wt.%)

Mineral	**Ideal Formula**	**#3 Test 29 – Zn Ro Tail Cyc 1-6**
Ankerite-Dolomite	$Ca(Fe^{2+},Mg,Mn)(CO_3)_2$-$CaMg(CO_3)_2$	10.7
Barite	$BaSO_4$	2.4
Chalcopyrite	$CuFeS_2$	0.7
Clinochlore	$(Mg,Fe^{2+})_5Al(Si_3Al)O_{10}(OH)_8$	4.2
Gypsum	$CaSO_4 \cdot 2H_2O$	0.9
Illite-Muscovite 2M1	$K_{0.65}Al_{2.0}Al_{0.65}Si_{3.35}O_{10}(OH)_2$-$KAl_2AlSi_3O_{10}(OH)_2$	9.9
Magnetite	$Fe^{2+}Fe^{3+}{}_2O_4$	3.6
Pyrite	FeS_2	51.1
Pyrrhotite	$Fe_{1-x}S$	3.1
Quartz	SiO_2	9.1
Siderite	$Fe^{2+}CO_3$	4.2
Total		**100.0**

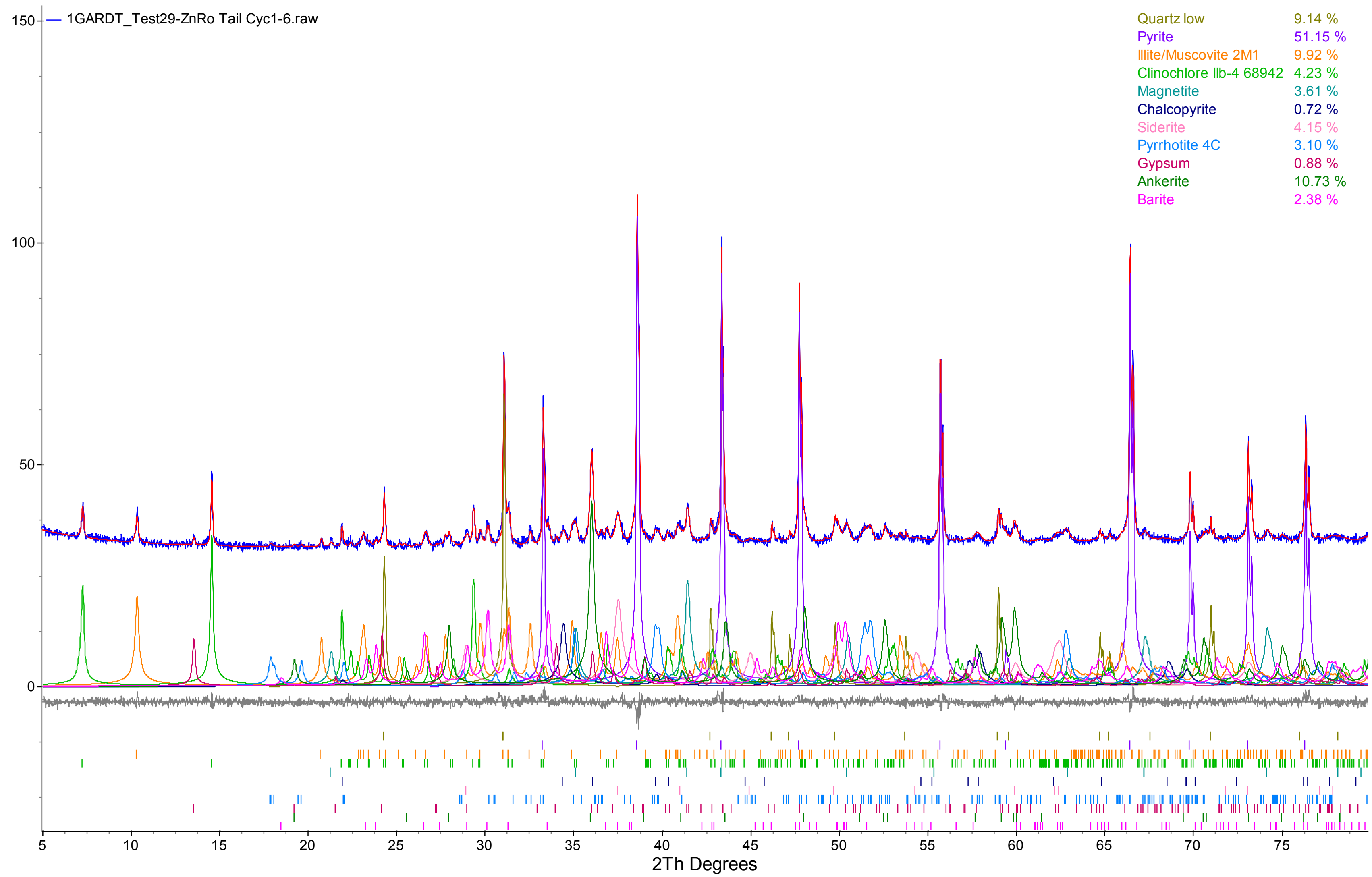

Figure 1. Rietveld refinement plot of sample **Global ARD Testing Services Inc. #3 Test 29 – Zn Ro Tail Cyc 1-6** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars, positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresses:	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

RESULTS		
Reported To:	**1**	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
	4	Jane Capp (jane@omipl.com.au)
Date Reported:		Version 1 (SFE results): June 29, 2016; V2: June 30, 2016.

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kellib@bmcminerals.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
cc:	BMC Accounts (accounts@bmcminerals.com)
Global Invoice No:	ARD1522-0616A
Date Submitted:	June 30, 2016 (Thursday)

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

REPORTING	
Global Project No:	1522
Report Version:	2
Pages (Including Cover):	6
Report Title:	COA 16 BMC-KZK Overburden Samples (rec'd 9-Jun16)
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

NOTES
All samples are stored at no charge for 90 days except on-going HCT head client samples.
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

PAGE: 2 of 6
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Interval (m)	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes (if any)
1	TP16-05	3.0 - 3.3	Grab (gravel/stones/clay)	3.72	Wet	
2	TP16-06	0.5 - 1.6	Grab (gravel/stones/clay)	2.52	Wet	
3	TP16-07	2.3 - 2.4	Grab (gravel/stones/clay)	2.98	Wet	
4	TP16-08	0.5 - 1.0	Grab (gravel/stones/clay)	3.28	Wet	
5	TP16-09	3.8 - 3.9	Grab (gravel/stones/clay)	2.90	Wet	
6	TP16-11	0.4 - 0.8	Grab (gravel/stones/clay)	0.98	Wet	
7	TP16-18	2.0 - 2.3	(gravel/stones/clay)	3.36	Wet	"Grab" not written on label inside bag.
8	TP16-19	1.0 - 1.5	Grab (gravel/stones/clay)	4.94	Wet	
9	TP16-22	4.4 - 4.5	Grab (gravel/stones/clay)	4.64	Wet	
10	TP16-25	1.3 - 1.5	Grab (gravel/stones/clay)	2.86	Wet	
11	TP16-27	2.5 - 2.8	Grab (gravel/stones/clay)	3.76	Wet	
12	TP16-31	4.0 - 4.5	Grab (gravel/stones/clay)	3.30	Wet	
13	TP16-38	4.0 - 4.5	Grab (gravel/stones/clay)	3.62	Wet	
14	TP16-44	3.5 - 4.0	Grab (gravel/stones/clay)	3.58	Wet	
15	TP16-45	3.0 - 3.3	Grab (gravel/stones/clay)	3.78	Wet	
16	TP16-49	0.5 - 0.7	Grab (gravel/stones/clay)	3.10	Wet	

Note: Highlighted samples requested for 24h MEND-SFE.

Total wt. of sample rec'd (kg): **53**

Sample Receipt Info:	
Date Sample Received:	June 9, 2016 (Thursday)
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Kai Woloshyn (kwoloshyn@alexcoresource.com) By Email/COC.
Date Instruction Received:	June 6, 2016 (Monday)

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents*1	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*2	AP*3	Mod. ABA NP	NNP*4	NPR*5
	Units:	pH Units		wt %	kg CaCO3/tonne	wt.%	wt.%	wt.%		kg CaCO3/tonne		
	Reported Detection Limit:	*0.01*		*0.02*	*1.7*	0.01	0.01	0.01	0.3	*0.5*		
1	TP16-05	7.7	None	<0.02	<1.7	0.01	0.01	<0.01	<0.3	3.9	3.9	N/A
2	TP16-06	8.1	None	<0.02	<1.7	0.10	0.03	0.07	2.2	4.5	2.3	2.1
3	TP16-07	7.6	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	5.0	5.0	N/A
4	TP16-08	7.3	None	<0.02	<1.7	0.02	0.02	<0.01	<0.3	6.8	6.8	N/A
5	TP16-09	8.3	None	0.02	1.7	<0.01	<0.01	<0.01	<0.3	10.1	10.1	N/A
6	TP16-11	8.4	None	0.03	2.5	<0.01	<0.01	<0.01	<0.3	12.7	12.7	N/A
7	TP16-18	8.0	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	8.8	8.8	N/A
8	TP16-19	7.9	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	8.1	8.1	N/A
9	TP16-22	8.2	None	0.07	5.8	0.01	<0.01	0.01	0.3	10.7	10.4	34.2
10	TP16-25	7.3	None	0.02	1.7	<0.01	<0.01	<0.01	<0.3	7.0	7.0	N/A
11	TP16-27	8.5	Strong	1.36	113.3	<0.01	<0.01	<0.01	<0.3	118.0	118.0	N/A
12	TP16-31	8.2	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	10.2	10.2	N/A
13	TP16-38	7.9	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	8.7	8.7	N/A
14	TP16-44	8.4	Slight	0.13	10.8	<0.01	<0.01	<0.01	<0.3	18.0	18.0	N/A
15	TP16-45	8.0	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	7.3	7.3	N/A
16	TP16-49	8.6	Moderate	0.46	38.3	<0.01	<0.01	<0.01	<0.3	47.9	47.9	N/A
						QUALITY ASSURANCE / QUALITY CONTROL						
Replicates:												
1	TP16-05			<0.02	<1.7							
1 R	TP16-05 (Rep)			<0.02	<1.7							
2	TP16-06					0.10						
2 R	TP16-06 (Rep)					0.11						
10	TP16-25	7.3	None				<0.01			7.0		
10 R	TP16-25 (Rep)	7.2	None				<0.01			6.6		
Certified Reference Material (CRM) Analysis:												
Certified Reference Material		KZK-1		SY-4		OREAS 24b	RTS-3a			1) KZK-1 (Slight) 2) KZK-1 (Moderate)		
CRM True Value		**8.80**		**0.96**		**0.190**	**1.10**			**1) 58.9 2) 61.6**		
Reference Material Results		8.81		0.93		0.180	1.16			1) 55.8 2) N/A		
Tolerance (+/-)		***0.09***		***0.03***		***IND***	***0.20***			***1) 1.1 2) 3.4***		
Method Blank Analysis:												
Method Blank Results				<0.02		<0.01	<0.01					
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*ARD-013 (HCl Leach)*	*Calc.*	*Calc.*	*ARD-005*	*Calc.*	*Calc.*

NOTES:

Date of Analysis (24h): June 20/21, 2016.
pH of DI water (pH Units): 5.79
EC of DI water (µS/cm): 0.63
For STD SY-4, the TIC results are evaluated against the COA CO2 (3.5%) value calculated as carbon - i.e. 0.96%. The COA 95% Confidence Interval then calculates to 0.03%.

METHODS:

Total sulphur by LECO, total inorganic carbon by HCl leach followed by Leco analysis. Job No: MA0075-JUN16.

ABBREVIATIONS:

R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)
D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request.
NP = Neutralization Potential
Calc. = Calculation
COA = Certificate Of Analysis
IND = Indeterminate

CALCULATIONS:

*1 $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)
*2 Sulphide-Sulphur: Total-sulphur - sulphate-sulphur
*3 AP (Acid Potential): Sulphide-sulphur x 31.25
*4 NNP (Net Neutralization Potential): NP - AP
*5 NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:

Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)
ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).
Modified ABA (Sobek) NP: MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.
Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).
Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Method / Analyte / Unit / MDL / Sample Type	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Method	IMS-130																									
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
		Sample Type																										
1	TP16-05	Pulp	0.92	0.85	28.2	0.006	<10	185	0.45	1.21	0.19	3.39	52.81	6.4	101	1.52	87.1	1.80	3.47	0.19	0.20	0.09	0.022	0.29	26.6	10.2	0.41	267
2	TP16-06	Pulp	0.22	0.68	6.9	<0.005	<10	104	0.34	0.40	0.22	0.85	52.5	4.8	91	1.01	25.4	1.58	2.84	0.18	0.15	0.02	0.014	0.28	24.4	8.2	0.35	291
3	TP16-07	Pulp	0.51	0.75	24.1	<0.005	<10	239	0.27	0.46	0.25	2.11	75.28	8.4	76	1.20	59.0	2.70	3.08	0.22	0.12	0.07	0.018	0.24	33.1	6.3	0.37	722
4	TP16-08	Pulp	1.95	1.17	55.5	0.02	<10	514	0.49	1.76	0.34	2.51	52.55	10.4	98	3.31	80.9	2.37	4.71	0.20	0.15	0.19	0.032	0.38	25.0	13.1	0.73	448
5	TP16-09	Pulp	0.22	1.02	8.6	<0.005	<10	159	0.35	0.22	0.75	0.85	47.09	9.8	87	1.39	21.5	2.20	4.00	0.19	0.14	0.03	0.019	0.21	20.1	10.2	0.62	446
6	TP16-11	Pulp	0.18	3.58	34.6	0.007	<10	120	0.46	0.14	0.52	0.81	36.93	31.7	311	1.22	64.6	5.65	10.41	0.28	0.15	0.02	0.041	0.16	20.4	19.0	3.59	902
7	TP16-18	Pulp	0.17	2.42	20.6	0.013	<10	222	0.35	0.08	0.42	0.65	65.44	23.4	72	1.13	41.3	5.40	9.43	0.30	0.15	<0.01	0.038	0.22	26.7	15.6	1.63	1017
8	TP16-19	Pulp	0.10	2.07	6.4	<0.005	<10	216	0.45	0.14	0.48	0.4	57.99	17.4	66	1.53	27.9	4.32	8.52	0.25	0.13	<0.01	0.035	0.23	23.1	14.9	1.31	755
9	TP16-22	Pulp	0.21	1.50	26.6	<0.005	<10	288	0.47	0.19	0.56	0.89	41.24	15.0	100	1.70	45.2	3.44	5.29	0.21	0.16	0.05	0.027	0.24	20.0	17.9	0.92	752
10	TP16-25	Pulp	0.14	1.41	4.5	<0.005	<10	221	0.56	0.23	0.33	0.48	64.91	11.1	94	2.69	31.2	2.47	5.58	0.24	0.12	0.02	0.023	0.36	31.0	17.5	0.83	446
11	TP16-27	Pulp	0.14	2.22	15.3	<0.005	<10	109	0.26	0.11	4.39	0.41	43.96	19.9	95	0.88	34.1	4.49	7.60	0.20	0.11	0.01	0.031	0.18	22.2	12.2	1.63	1141
12	TP16-31	Pulp	0.19	1.53	11.2	<0.005	<10	160	0.55	0.32	0.48	0.63	54.54	12.8	98	2.40	34.4	3.11	6.02	0.22	0.08	0.02	0.026	0.33	25.8	14.6	0.94	562
13	TP16-38	Pulp	0.16	1.45	6.7	<0.005	<10	258	0.56	0.24	0.44	0.45	48.59	12.4	110	3.40	39.3	2.59	5.83	0.21	0.10	0.02	0.028	0.38	25.0	20.9	0.89	584
14	TP16-44	Pulp	0.14	1.15	5.0	<0.005	<10	212	0.50	0.26	0.76	0.35	72.77	8.7	94	2.46	22.2	2.20	4.83	0.22	0.14	0.01	0.022	0.42	34.2	16.3	0.61	454
15	TP16-45	Pulp	0.21	1.13	8.5	<0.005	<10	196	0.51	0.35	0.41	0.4	67.1	8.9	88	2.55	23.3	2.29	4.72	0.22	0.11	0.01	0.020	0.37	31.6	14.6	0.6	524
16	TP16-49	Pulp	0.13	4.65	95.7	<0.005	<10	255	0.43	0.04	2.02	0.33	34	38.0	178	3.57	95.4	9.30	17.23	0.41	0.10	<0.01	0.062	0.51	16.5	34.8	3.26	1367
QUALITY ASSURANCE / QUALITY CONTROL																												
Pulp Replicates:																												
14	TP16-44	Pulp	0.14	1.15	5.0	<0.005	<10	212	0.50	0.26	0.76	0.35	72.77	8.7	94	2.46	22.2	2.20	4.83	0.22	0.14	0.01	0.022	0.42	34.2	16.3	0.61	454
14 R	TP16-44	Pulp-Rep	0.14	1.15	7.6	<0.005	<10	213	0.53	0.25	0.76	0.37	69.71	8.8	94	2.44	22.0	2.18	4.85	0.21	0.13	0.01	0.022	0.42	32.8	16.6	0.61	458
Certified Reference Material																												
STD OREAS 24b			0.080	3.24	8.20	0.0	<10	146	1.65	0.66	0.45	0.06	60.6	15.8	103	9.42	36.2	3.82	10.98	0.32	0.53	0.01	0.046	1.15	29.6	46.4	1.36	334
True Value STD OREAS 24b			**0.058**	**3.15**	**7.96**	**0.002**	**6.23**	**146**	**1.65**	**0.73**	**0.461**	**0.046**	**61.0**	**15.7**	**106**	**9.15**	**36.4**	**3.93**	**10.80**	**0.26**	**0.52**	**<0.01**	**0.048**	**1.17**	**29.2**	**45.6**	**1.36**	**350**
% Difference			37.9	2.9	3.0			0.0	0.0	-9.6	-2.4	30.4	-0.7	0.6	-2.8	3.0	-0.5	-2.8	1.7	23.1	1.9		-4.2	-1.7	1.4	1.8	0.0	-4.6
Tolerance (%)			***NR***	***0.2***	***0.95***	***NR***	***NR***	***12***	***NR***	***0.13***	***0.030***	***NR***	***NR***	***1.9***	***9***	***0.56***	***3.3***	***0.21***	***1.1***	***NR***	***NR***	***NR***	***NR***	***0.07***	***NR***	***3.5***	***0.07***	***20***
Method Blank:																												
Method Blank			<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5

Notes:

Job No: MA0075-JUN16

Analytical Methods (IMS-130):

A 0.5 g of pulp sample is leached in hot (95°C) 3:1 aqua regia digestion followed by ICP Mass Spec analysis.
Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5 g).
Refractory and graphitic samples can limit Au solubility.

Abbreviations:

R / Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)
D / Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a second split of the original client sample received)
MDL = Measurable Detection Limit
IND = Indeterminate

On Cerfified Reference Material and Tolerance:

Any one element in a run reporting outside tolerance limits does not constitute failure of the standard.
As per Certificate of Analysis (COA): All values indicated are Certified. Values indicated in green are indicative only.
NR = Not Reported (in the Certificate Of Analysis).

![Global ARD Testing Services Inc. logo]

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

S. No.	Sample ID	Method Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
		Unit	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**%**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
		MDL	**0.05**	**0.01**	**0.05**	**0.2**	**10**	**0.2**	**0.1**	**0.001**	**0.01**	**0.05**	**0.1**	**0.2**	**0.2**	**0.2**	**0.01**	**0.01**	**0.2**	**0.005**	**0.02**	**0.05**	**1**	**0.05**	**0.05**	**2**	**0.5**
		Sample Type																									
1	TP16-05	Pulp	2.25	0.02	0.71	15.5	461	101.9	21.7	<0.001	0.01	2.28	2.9	0.4	1.2	11	0.03	0.04	14.5	0.061	0.25	1.5	22	12.86	11.53	569	8.2
2	TP16-06	Pulp	2.18	0.02	0.97	9.1	455	26.7	17.5	<0.001	0.12	0.28	1.7	0.6	0.6	10.2	0.02	0.15	14.1	0.039	0.15	1.89	12	6.00	10.88	143	7.9
3	TP16-07	Pulp	2.68	0.02	0.90	15.7	812	74.2	13.7	<0.001	0.01	0.97	2.5	0.4	0.4	13.2	0.02	0.12	13.5	0.047	0.17	1.35	22	3.92	9.37	369	6.6
4	TP16-08	Pulp	1.68	0.03	1.01	26.7	718	135.4	35.6	<0.001	0.02	23.74	4	1.2	0.9	15.8	0.02	0.11	12.6	0.122	0.49	1.35	39	3.22	13.72	440	7.9
5	TP16-09	Pulp	1.50	0.03	1.90	20.9	1365	31.5	16.3	<0.001	<0.01	0.68	3.9	<0.2	0.7	23.1	0.03	0.09	8.7	0.178	0.14	0.91	35	2.82	8.73	134	7.0
6	TP16-11	Pulp	1.70	0.02	0.88	140.3	1228	22.3	14.7	<0.001	<0.01	0.31	16.8	0.6	0.5	19	0.03	0.1	6.4	0.231	0.14	0.97	134	2.18	11.23	121	6.4
7	TP16-18	Pulp	2.34	0.02	0.99	28.8	1633	23.2	14.8	<0.001	<0.01	0.12	8.5	0.9	0.4	20.3	0.05	0.09	9.3	0.105	0.13	0.96	104	1.88	18.26	167	7.1
8	TP16-19	Pulp	1.24	0.02	1.11	20.4	1436	15.5	20.8	<0.001	<0.01	0.12	6.1	0.5	0.6	20.9	0.02	0.07	9.1	0.16	0.16	0.84	83	1.62	12.83	121	6.3
9	TP16-22	Pulp	2.75	0.03	0.52	50.6	1139	13.0	17.1	<0.001	0.02	0.63	5.7	0.3	0.7	30.5	<0.01	0.08	7.2	0.081	0.14	0.94	61	1.47	11.27	120	8.0
10	TP16-25	Pulp	1.16	0.03	0.95	29.1	780	17.6	31.6	<0.001	<0.01	0.23	4.7	<0.2	0.9	16.5	0.03	0.07	13.2	0.129	0.22	1.3	46	1.38	16.31	109	6.2
11	TP16-27	Pulp	1.05	0.02	0.42	37.5	1224	12.6	12.9	<0.001	<0.01	0.13	8.2	0.4	0.3	156.5	0.02	0.06	6.7	0.091	0.11	0.56	74	1.06	16.67	157	4.7
12	TP16-31	Pulp	1.47	0.02	1.13	30.9	975	23.6	29.4	<0.001	<0.01	0.19	5.4	0.3	0.7	19	0.03	0.05	11.6	0.121	0.2	1.18	56	1.12	16.05	138	5.3
13	TP16-38	Pulp	1.48	0.03	0.96	38.7	845	17.7	33.7	<0.001	<0.01	0.17	5.5	0.2	0.8	17.7	0.01	0.07	10.4	0.134	0.25	1.23	54	1.03	15.45	103	5.1
14	TP16-44	Pulp	1.23	0.03	0.72	24.2	670	19.0	31.0	<0.001	<0.01	0.20	4	0.4	0.8	24.2	0.01	0.04	16	0.106	0.22	1.18	36	1.09	15.23	81	6.2
15	TP16-45	Pulp	1.68	0.03	1.61	22.7	778	18.5	29.2	<0.001	<0.01	0.24	3.8	<0.2	0.8	16.9	0.01	0.06	13.9	0.095	0.2	0.99	36	1.34	13.32	82	6.8
16	TP16-49	Pulp	1.10	0.02	0.77	106.0	1519	3.9	36.0	0.001	<0.01	0.14	21	0.7	0.6	63.6	0.05	0.06	2.6	0.41	0.3	2.2	210	0.87	13.75	115	4.8
QUALITY ASSURANCE / QUALITY CONTROL																											
Pulp Replicates:																											
14	TP16-44	Pulp	1.23	0.03	0.72	24.2	670	19.0	31.0	<0.001	<0.01	0.20	4	0.4	0.8	24.2	0.01	0.04	16.0	0.106	0.22	1.18	36	1.09	15.23	81	6.2
14 R	TP16-44	Pulp-Rep	1.20	0.03	0.72	24.5	659	18.9	30.5	<0.001	<0.01	0.19	4.1	<0.2	0.8	23.8	0.02	0.05	15.8	0.106	0.22	1.24	36	0.87	15.43	80	6.1
Certified Reference Material																											
STD OREAS 24b			3.78	0.11	0.32	58.9	617	9.90	116.2	<0.001	0.19	0.48	9.80	0.50	2.30	31.2	0.01	<0.01	14.4	0.205	0.66	1.76	80	1.15	12.31	99	24.1
True Value STD OREAS 24b			**3.86**	**IND**	**0.31**	**57.0**	**620**	**9.23**	**114**	**<0.001**	**0.20**	**0.48**	**9.51**	**0.42**	**2.26**	**29.0**	**<0.05**	**<0.02**	**14.3**	**0.198**	**0.66**	**1.74**	**79**	**1.19**	**12.30**	**93**	**24.5**
% Difference			-2.1		3.2	3.3	-0.5	7.3	1.9	0.0	-5.0	0.0	3.0		1.8	7.6			0.7	3.5	0.0	1.1	1.3	-3.4	0.1	6.5	-1.6
Tolerance (%)			***0.37***	***NR***	***N/B***	***5***	***NR***	***1.29***	***15***	***NR***	***0.02***	***NR***	***1.39***	***NR***	***0.30***	***NR***	***NR***	***NR***	***1.1***	***0.017***	***0.08***	***0.26***	***5***	***NR***	***1.7***	***6***	***3.2***
Method Blank:																											
Method Blank			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5

CERTIFICATE OF ANALYSIS ▪ MEND-SHAKE FLASK EXTRACTION RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

Parameter	Method	Unit	RDL	1 TP16-05	2 TP16-06	3 TP16-07	4 TP16-08	6 TP16-11	7 TP16-18	14 TP16-44	16 TP16-49	16 D TP16-49 (Dup)	Method Blank
Weight of dry sample used	Weighing Scale	g	0.01	250	250	250	250	250	250	250	250	250	N/A
Volume of DI water used	Graduated Cylinder	mL	0.50	750	750	750	750	750	750	750	750	750	750
On filtered samples using 0.45 micron filter paper													
pH	pH Meter	pH units	0.01	6.4	6.6	5.9	5.7	6.3	6.2	7.4	7.8	7.8	5.6
EC	EC Meter	µS/cm	1	18	27	11	60	12	7	42	51	53	1.02
Acidity (to pH 8.3)	Titration/Calc.	mg CaCO3/L	0.5	15.5	10.0	11.5	7.3	7.5	7.0	5.8	3.0	2.8	6.5
Alkalinity (to pH 4.5)	Titration/Calc.	mg CaCO3/L	0.5	3.8	8.5	1.8	1.0	3.5	2.0	19.0	24.0	25.3	1.5
Dissolved Sulphate (SO4)	Turbidimetry	mg/L	0.50	2.85	2.23	0.59	2.70	<0.50	<0.50	0.51	<0.50	<0.50	<0.50
Fluoride (F)	Selective Ion Electrode	mg/L	0.010	0.190	0.048	0.038	0.046	0.049	0.049	0.120	0.075		
Dissolved Metals Analysis by ICP-MS:													
Hardness, Total (as CaCO3)	ICP-MS	mg/L	0.1	5	8	3	9	5	2	14	20		<0.1
Aluminum, dissolved	ICP-MS	mg/L	0.001	0.282	0.032	0.044	0.108	0.087	0.022	0.116	0.103		<0.001
Antimony, dissolved	ICP-MS	mg/L	0.00005	0.00051	0.00009	0.00014	0.00445	0.00017	<0.00005	0.00009	0.00005		<0.00005
Arsenic, dissolved	ICP-MS	mg/L	0.00005	0.00078	0.00036	0.00049	0.00046	0.00084	0.00015	0.0002	0.0025		<0.00005
Barium, dissolved	ICP-MS	mg/L	0.0001	0.0109	0.0072	0.0039	0.0405	0.0072	0.0036	0.0124	0.0077		<0.0001
Beryllium, dissolved	ICP-MS	mg/L	0.00001	0.00002	<0.00001	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	<0.00001		<0.00001
Bismuth, dissolved	ICP-MS	mg/L	0.00001	0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001
Boron, dissolved	ICP-MS	mg/L	0.001	0.003	0.003	0.003	0.003	0.004	0.002	0.002	0.003		<0.001
Cadmium, dissolved	ICP-MS	mg/L	0.000002	0.000358	0.000075	0.000085	0.001200	0.000054	0.000011	0.000008	0.000004		<0.000002
Calcium, dissolved	ICP-MS	mg/L	0.04	1.28	2.70	1.05	2.86	1.89	0.72	4.87	7.61		<0.040
Chromium, dissolved	ICP-MS	mg/L	0.0001	0.0006	<0.0001	<0.0001	0.0002	0.0004	<0.0001	0.0003	0.0002		<0.0001
Cobalt, dissolved	ICP-MS	mg/L	0.000005	0.000147	0.000041	0.000041	0.000173	0.000147	0.00005	0.000049	0.000098		<0.000005
Copper, dissolved	ICP-MS	mg/L	0.0001	0.0052	0.0037	0.0035	0.0036	0.0065	0.0012	0.0009	0.0011		0.0002
Iron, dissolved	ICP-MS	mg/L	0.002	0.444	0.042	0.096	0.161	0.121	0.037	0.154	0.069		<0.002
Lead, dissolved	ICP-MS	mg/L	0.00005	0.00271	0.00034	0.00148	0.00123	0.00036	0.0002	0.00023	0.00006		<0.00005
Lithium, dissolved	ICP-MS	mg/L	0.00005	0.00127	0.00063	0.00067	0.00171	0.00029	0.00018	0.00205	0.00026		<0.00005
Magnesium, dissolved	ICP-MS	mg/L	0.005	0.466	0.343	0.101	0.414	0.097	0.052	0.405	0.183		<0.005
Manganese, dissolved	ICP-MS	mg/L	0.00005	0.0046	0.00793	0.00669	0.0176	0.00604	0.00419	0.00199	0.00244		<0.00005
Mercury, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001
Molybdenum, dissolved	ICP-MS	mg/L	0.00001	0.00036	0.00113	0.00018	0.00005	0.0007	0.00021	0.00258	0.0017		<0.00001
Nickel, dissolved	ICP-MS	mg/L	0.00002	0.00074	0.00028	0.00033	0.00142	0.00151	0.00014	0.00024	0.00020		<0.00002
Phosphorus, dissolved	ICP-MS	mg/L	0.01	<0.010	0.01	<0.010	<0.010	<0.010	0.012	<0.010	0.011		<0.010
Potassium, dissolved	ICP-MS	mg/L	0.01	0.832	1.350	0.386	1.200	0.227	0.281	0.934	0.631		<0.010
Selenium, dissolved	ICP-MS	mg/L	0.0001	0.0005	0.0002	0.0002	0.0001	0.0001	<0.0001	<0.0001	<0.0001		<0.0001
Silicon, dissolved	ICP-MS	mg/L	0.05	1.23	0.40	0.45	1.12	0.49	0.38	1.25	0.69		<0.050
Silver, dissolved	ICP-MS	mg/L	0.00001	0.00004	0.00004	0.00007	<0.00001	0.00008	0.00008	<0.00001	0.00001		<0.00001
Sodium, dissolved	ICP-MS	mg/L	0.01	0.224	0.197	0.232	4.930	0.170	0.173	0.223	0.160		<0.010
Strontium, dissolved	ICP-MS	mg/L	0.0001	0.004	0.0088	0.0031	0.0122	0.0066	0.0034	0.0111	0.0164		<0.0001
Sulphur, dissolved	ICP-MS	mg/L	0.5	0.696	0.720	<0.500	0.883	<0.500	<0.500	<0.500	<0.500		<0.500
Tellurium, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005
Thallium, dissolved	ICP-MS	mg/L	0.000004	0.000009	0.000009	0.000005	0.000014	<0.000004	<0.000004	<0.000004	<0.000004		<0.000004
Thorium, dissolved	ICP-MS	mg/L	0.00001	0.00031	0.00002	0.00012	0.00009	0.00019	0.00002	0.00012	0.00003		<0.00001
Tin, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005
Titanium, dissolved	ICP-MS	mg/L	0.0002	0.0153	0.0010	0.0012	0.0061	0.0027	0.0009	0.0061	0.0024		<0.0002
Uranium, dissolved	ICP-MS	mg/L	0.000001	0.000039	0.000122	0.000101	0.000023	0.000205	0.000013	0.000068	0.000081		<0.000001
Vanadium, dissolved	ICP-MS	mg/L	0.0002	0.0007	<0.0002	<0.0002	0.0003	0.0003	<0.0002	0.0004	0.0007		<0.0002
Zinc, dissolved	ICP-MS	mg/L	0.001	0.046	0.004	0.005	0.061	0.002	<0.001	0.001	<0.001		<0.001
Zirconium, dissolved	ICP-MS	mg/L	0.00002	0.00033	0.00011	0.00038	0.00016	0.00138	0.00009	0.00011	0.00010		<0.00002
Ion Balance													
Major Anions	Calc.	meq/L		0.14	0.22	0.05	0.08	0.07	0.04	0.40	0.48		
Major Cations	Calc.	meq/L		0.18	0.21	0.09	0.44	0.13	0.06	0.33	0.43		
Difference	Calc.	meq/L		-0.04	0.01	-0.04	-0.36	-0.06	-0.02	0.07	0.05		
Balance (%)	Calc.	%		-11.7%	1.6%	**-28.4%**	**-69.8%**	**-28.4%**	**-16.3%**	9.4%	5.6%		
			Shake Flask Extract ID:	*6061535-01*	*6061535-02*	*6061535-03*	*6061535-04*	*6061535-05*	*6061535-06*	*6061535-07*	*6061535-08*		*6061535-09*

Notes:

Job No: Anions: B648924V1; Metals (Cations): 6061535

Ion balance high for bolded samples (#4 & #6) due to absence of contributing anions missing (e.g. Cl)? For samples #3 & #7 - anion/cation values are too low hence seems high.

Date of Analysis (24h): June 15/16, 2016.

pH of DI water used (pH Units): 5.69

EC of DI water used (µS/cm): 0.41

Abbreviations:

R / Rep = Replicate (which involves the analysis of the same Shake Flask Extract aliquot).

D / Dup = Duplicate (which involves the analysis of a 2nd SF extract, produced by processing a separate split of the original client sample received).

EC = Electrical Conductivity

ORP = Oxidation Reduction Potential

RDL = Reportable Detection Limit.

Calc. = Calculation

Method Reference: Prediction Manual for Drainage Chemistry from Sulphidic Geologic Material, MEND Report 1.20.1; Version 0 - Dec. 2009. Section 11.5; P 11 (8-9).

Extraction Method used: Using Gyratory Shaker for 24 h (± 2 h - gentle agitation).

Liquid:Solid ratio used: 3:1; 750 mL DI H_2O: 250 g of crushed <1/4 inch (<6.3 mm) material.

CERTIFICATE OF ANALYSIS ▪ MEND-SFE QA/QC RESULTS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

Sulphate & Fluoride:

QA/QC Batch	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8306744	[OW0876-01]	Fluoride (F)	2016/06/21		98	%	80 - 120
8306744	Spiked Blank	Fluoride (F)	2016/06/21		90	%	80 - 120
8306744	Method Blank	Fluoride (F)	2016/06/21	<0.010		mg/L	
8306744	RPD	Fluoride (F)	2016/06/21	0		%	20
8306756	Matrix Spike	Fluoride (F)	2016/06/21		96	%	80 - 120
8306756	Spiked Blank	Fluoride (F)	2016/06/21		92	%	80 - 120
8306756	Method Blank	Fluoride (F)	2016/06/21	<0.010		mg/L	
8306756	RPD	Fluoride (F)	2016/06/21	4.7		%	20
8306762	Matrix Spike	Fluoride (F)	2016/06/21		NC	%	80 - 120
8306762	Spiked Blank	Fluoride (F)	2016/06/21		92	%	80 - 120
8306762	Method Blank	Fluoride (F)	2016/06/21	<0.010		mg/L	
8306762	RPD	Fluoride (F)	2016/06/21	0		%	20
8306778	Spiked Blank	Dissolved Sulphate (SO4)	2016/06/21		92	%	80 - 120
8306778	Method Blank	Dissolved Sulphate (SO4)	2016/06/21	<0.50		mg/L	
8306778	RPD	Dissolved Sulphate (SO4)	2016/06/21	NC		%	20
		Dissolved Sulphate (SO4)	2016/06/21	1.9		%	20

Notes:

Job No: B648924V1

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Dissolved Metals by ICP-MS:

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6061535_B6F1385-BLK1	Aluminum dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.001	mg/L		
6061535_B6F1385-BLK1	Antimony dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK1	Arsenic dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK1	Barium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0001	mg/L		
6061535_B6F1385-BLK1	Beryllium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK1	Bismuth dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK1	Boron dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.001	mg/L		
6061535_B6F1385-BLK1	Cadmium dissolved	<	0.000002	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.000002	mg/L		
6061535_B6F1385-BLK1	Calcium dissolved	<	0.04	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.04	mg/L		
6061535_B6F1385-BLK1	Chromium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0001	mg/L		
6061535_B6F1385-BLK1	Cobalt dissolved	<	0.000005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.000005	mg/L		
6061535_B6F1385-BLK1	Copper dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0001	mg/L		
6061535_B6F1385-BLK1	Iron dissolved	<	0.002	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.002	mg/L		
6061535_B6F1385-BLK1	Lead dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK1	Lithium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK1	Magnesium dissolved	<	0.005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.005	mg/L		
6061535_B6F1385-BLK1	Manganese dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK1	Mercury dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK1	Molybdenum dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK1	Nickel dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00002	mg/L		
6061535_B6F1385-BLK1	Phosphorus dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.01	mg/L		
6061535_B6F1385-BLK1	Potassium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.01	mg/L		
6061535_B6F1385-BLK1	Selenium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0001	mg/L		
6061535_B6F1385-BLK1	Silicon dissolved	<	0.05	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.05	mg/L		
6061535_B6F1385-BLK1	Silver dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK1	Sodium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.01	mg/L		
6061535_B6F1385-BLK1	Strontium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0001	mg/L		
6061535_B6F1385-BLK1	Sulfur dissolved	<	0.5	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.5	mg/L		
6061535_B6F1385-BLK1	Tellurium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK1	Thallium dissolved	<	0.000004	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.000004	mg/L		
6061535_B6F1385-BLK1	Thorium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK1	Tin dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK1	Titanium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0002	mg/L		
6061535_B6F1385-BLK1	Uranium dissolved	<	0.000001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.000001	mg/L		
6061535_B6F1385-BLK1	Vanadium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0002	mg/L		
6061535_B6F1385-BLK1	Zinc dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.001	mg/L		
6061535_B6F1385-BLK1	Zirconium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK2	Aluminum dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.001	mg/L		
6061535_B6F1385-BLK2	Antimony dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK2	Arsenic dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK2	Barium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0001	mg/L		
6061535_B6F1385-BLK2	Beryllium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK2	Bismuth dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK2	Boron dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.001	mg/L		
6061535_B6F1385-BLK2	Cadmium dissolved	<	0.000002	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.000002	mg/L		
6061535_B6F1385-BLK2	Calcium dissolved	<	0.04	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.04	mg/L		
6061535_B6F1385-BLK2	Chromium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0001	mg/L		
6061535_B6F1385-BLK2	Cobalt dissolved	<	0.000005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.000005	mg/L		
6061535_B6F1385-BLK2	Copper dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0001	mg/L		
6061535_B6F1385-BLK2	Iron dissolved	<	0.002	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.002	mg/L		
6061535_B6F1385-BLK2	Lead dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK2	Lithium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK2	Magnesium dissolved	<	0.005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.005	mg/L		
6061535_B6F1385-BLK2	Manganese dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK2	Mercury dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK2	Molybdenum dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK2	Nickel dissolved	<	0.00002	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00002	mg/L		
6061535_B6F1385-BLK2	Phosphorus dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.01	mg/L		
6061535_B6F1385-BLK2	Potassium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.01	mg/L		
6061535_B6F1385-BLK2	Selenium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0001	mg/L		
6061535_B6F1385-BLK2	Silicon dissolved	<	0.05	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.05	mg/L		
6061535_B6F1385-BLK2	Silver dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK2	Sodium dissolved	<	0.01	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.01	mg/L		
6061535_B6F1385-BLK2	Strontium dissolved	<	0.0001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0001	mg/L		
6061535_B6F1385-BLK2	Sulfur dissolved	<	0.5	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.5	mg/L		
6061535_B6F1385-BLK2	Tellurium dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK2	Thallium dissolved	<	0.000004	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.000004	mg/L		
6061535_B6F1385-BLK2	Thorium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		
6061535_B6F1385-BLK2	Tin dissolved	<	0.00005	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00005	mg/L		
6061535_B6F1385-BLK2	Titanium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0002	mg/L		
6061535_B6F1385-BLK2	Uranium dissolved	<	0.000001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.000001	mg/L		
6061535_B6F1385-BLK2	Vanadium dissolved	<	0.0002	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.0002	mg/L		
6061535_B6F1385-BLK2	Zinc dissolved	<	0.001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.001	mg/L		
6061535_B6F1385-BLK2	Zirconium dissolved	<	0.00001	mg/L	F	metals	APHA 3125 B	26-Jun-16	0.00001	mg/L		

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 2

Sulphate & Fluoride:

6061535_B6F1385-SRM1	Aluminum dissolved	89	%	F	metals	APHA 3125 B	26-Jun-16	1	%	142	58
6061535_B6F1385-SRM1	Antimony dissolved	120	%	F	metals	APHA 3125 B	26-Jun-16	1	%	125	75
6061535_B6F1385-SRM1	Arsenic dissolved	96	%	F	metals	APHA 3125 B	26-Jun-16	1	%	119	81
6061535_B6F1385-SRM1	Barium dissolved	108	%	F	metals	APHA 3125 B	26-Jun-16	1	%	117	83
6061535_B6F1385-SRM1	Beryllium dissolved	103	%	F	metals	APHA 3125 B	26-Jun-16	1	%	120	80
6061535_B6F1385-SRM1	Boron dissolved	96	%	F	metals	APHA 3125 B	26-Jun-16	1	%	117	74
6061535_B6F1385-SRM1	Cadmium dissolved	97	%	F	metals	APHA 3125 B	26-Jun-16	1	%	117	83
6061535_B6F1385-SRM1	Calcium dissolved	101	%	F	metals	APHA 3125 B	26-Jun-16	1	%	124	76
6061535_B6F1385-SRM1	Chromium dissolved	89	%	F	metals	APHA 3125 B	26-Jun-16	1	%	119	81
6061535_B6F1385-SRM1	Cobalt dissolved	93	%	F	metals	APHA 3125 B	26-Jun-16	1	%	124	76
6061535_B6F1385-SRM1	Copper dissolved	100	%	F	metals	APHA 3125 B	26-Jun-16	1	%	116	84
6061535_B6F1385-SRM1	Iron dissolved	100	%	F	metals	APHA 3125 B	26-Jun-16	1	%	126	74
6061535_B6F1385-SRM1	Lead dissolved	102	%	F	metals	APHA 3125 B	26-Jun-16	1	%	128	72
6061535_B6F1385-SRM1	Lithium dissolved	115	%	F	metals	APHA 3125 B	26-Jun-16	1	%	140	60
6061535_B6F1385-SRM1	Magnesium dissolved	101	%	F	metals	APHA 3125 B	26-Jun-16	1	%	119	81
6061535_B6F1385-SRM1	Manganese dissolved	90	%	F	metals	APHA 3125 B	26-Jun-16	1	%	116	84
6061535_B6F1385-SRM1	Molybdenum dissolved	96	%	F	metals	APHA 3125 B	26-Jun-16	1	%	117	83
6061535_B6F1385-SRM1	Nickel dissolved	91	%	F	metals	APHA 3125 B	26-Jun-16	1	%	126	74
6061535_B6F1385-SRM1	Phosphorus dissolved	111	%	F	metals	APHA 3125 B	26-Jun-16	1	%	132	68
6061535_B6F1385-SRM1	Potassium dissolved	100	%	F	metals	APHA 3125 B	26-Jun-16	1	%	126	74
6061535_B6F1385-SRM1	Selenium dissolved	96	%	F	metals	APHA 3125 B	26-Jun-16	1	%	130	70
6061535_B6F1385-SRM1	Sodium dissolved	99	%	F	metals	APHA 3125 B	26-Jun-16	1	%	128	72
6061535_B6F1385-SRM1	Strontium dissolved	93	%	F	metals	APHA 3125 B	26-Jun-16	1	%	113	84
6061535_B6F1385-SRM1	Thallium dissolved	95	%	F	metals	APHA 3125 B	26-Jun-16	1	%	143	57
6061535_B6F1385-SRM1	Uranium dissolved	92	%	F	metals	APHA 3125 B	26-Jun-16	1	%	115	85
6061535_B6F1385-SRM1	Vanadium dissolved	99	%	F	metals	APHA 3125 B	26-Jun-16	1	%	113	87
6061535_B6F1385-SRM1	Zinc dissolved	104	%	F	metals	APHA 3125 B	26-Jun-16	1	%	128	72
6061535_B6F1385-SRM2	Aluminum dissolved	92	%	F	metals	APHA 3125 B	26-Jun-16	1	%	142	58
6061535_B6F1385-SRM2	Antimony dissolved	119	%	F	metals	APHA 3125 B	26-Jun-16	1	%	125	75
6061535_B6F1385-SRM2	Arsenic dissolved	97	%	F	metals	APHA 3125 B	26-Jun-16	1	%	119	81
6061535_B6F1385-SRM2	Barium dissolved	109	%	F	metals	APHA 3125 B	26-Jun-16	1	%	117	83
6061535_B6F1385-SRM2	Beryllium dissolved	116	%	F	metals	APHA 3125 B	26-Jun-16	1	%	120	80
6061535_B6F1385-SRM2	Boron dissolved	109	%	F	metals	APHA 3125 B	26-Jun-16	1	%	117	74
6061535_B6F1385-SRM2	Cadmium dissolved	98	%	F	metals	APHA 3125 B	26-Jun-16	1	%	117	83
6061535_B6F1385-SRM2	Calcium dissolved	116	%	F	metals	APHA 3125 B	26-Jun-16	1	%	124	76
6061535_B6F1385-SRM2	Chromium dissolved	90	%	F	metals	APHA 3125 B	26-Jun-16	1	%	119	81
6061535_B6F1385-SRM2	Cobalt dissolved	93	%	F	metals	APHA 3125 B	26-Jun-16	1	%	124	76
6061535_B6F1385-SRM2	Copper dissolved	101	%	F	metals	APHA 3125 B	26-Jun-16	1	%	116	84
6061535_B6F1385-SRM2	Iron dissolved	100	%	F	metals	APHA 3125 B	26-Jun-16	1	%	126	74
6061535_B6F1385-SRM2	Lead dissolved	117	%	F	metals	APHA 3125 B	26-Jun-16	1	%	128	72
6061535_B6F1385-SRM2	Lithium dissolved	130	%	F	metals	APHA 3125 B	26-Jun-16	1	%	140	60
6061535_B6F1385-SRM2	Magnesium dissolved	102	%	F	metals	APHA 3125 B	26-Jun-16	1	%	119	81
6061535_B6F1385-SRM2	Manganese dissolved	90	%	F	metals	APHA 3125 B	26-Jun-16	1	%	116	84
6061535_B6F1385-SRM2	Molybdenum dissolved	96	%	F	metals	APHA 3125 B	26-Jun-16	1	%	117	83
6061535_B6F1385-SRM2	Nickel dissolved	91	%	F	metals	APHA 3125 B	26-Jun-16	1	%	126	74
6061535_B6F1385-SRM2	Phosphorus dissolved	101	%	F	metals	APHA 3125 B	26-Jun-16	1	%	132	68
6061535_B6F1385-SRM2	Potassium dissolved	101	%	F	metals	APHA 3125 B	26-Jun-16	1	%	126	74
6061535_B6F1385-SRM2	Selenium dissolved	101	%	F	metals	APHA 3125 B	26-Jun-16	1	%	130	70
6061535_B6F1385-SRM2	Sodium dissolved	100	%	F	metals	APHA 3125 B	26-Jun-16	1	%	128	72
6061535_B6F1385-SRM2	Strontium dissolved	93	%	F	metals	APHA 3125 B	26-Jun-16	1	%	113	84
6061535_B6F1385-SRM2	Thallium dissolved	109	%	F	metals	APHA 3125 B	26-Jun-16	1	%	143	57
6061535_B6F1385-SRM2	Uranium dissolved	106	%	F	metals	APHA 3125 B	26-Jun-16	1	%	115	85
6061535_B6F1385-SRM2	Vanadium dissolved	100	%	F	metals	APHA 3125 B	26-Jun-16	1	%	113	87
6061535_B6F1385-SRM2	Zinc dissolved	105	%	F	metals	APHA 3125 B	26-Jun-16	1	%	128	72

Notes:

Job No: 6061535
BLK = Method Blank
EQL = Estimated Quantitation Limits
PQL = Practical Quantitation Limits
UCL = Upper Control Limit
LCL = Lower Control Limit
SRM = Standard Reference Materials

CERTIFICATE OF ANALYSIS ▪ COVER PAGE

Global ARD Testing Services Inc.

CLIENT INFORMATION		
Client:		BMC MINERALS (No.1) LTD.
Consulting Client:		Access Mining Consultants Ltd.
Project Manager(s):		Andrew Gault (agault@alexcoresource.com)
		Kai Woloshyn (kwoloshyn@alexcoresource.com)
		Linda Broughton (lbroughton@alexcoresource.com)
Mailing Addresses:	**BMC:**	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
	Alexco:	400 - 8 King Street East, Toronto, Ontario, Canada M5C 1B5.
Contact No:	**BMC:**	(778) 233-7058
	Alexco:	(867) 668-6463 x289
Fax No:	**BMC:**	
	Alexco:	(867) 633-4882

COMPANY INFORMATION	
Legal Name:	Global ARD Testing Services Inc.
Mailing Address:	6891 Antrim Avenue, Burnaby, BC, Canada V5J 4M5.
Contact No:	Main: (604) 428-2730
	Ivy Rajan (Cell): (604) 319-7707
	Prab Bhatia (Cell): (604) 603-1359
Fax No:	(604) 428-2731

PROJECT INFORMATION	
Client Project Name:	Kudz Ze Kayah
Client Project Number:	BMC-15-03

REPORTING	
Global Project No:	1522
Report Version:	1
Pages (Including Cover):	6
Report Title:	COA 30 BMC-KZK Overburden Samples (rec'd 3-Oct16
Analysis Reviewed By:	Ivy Rajan (IRajan@GlobalARDTesting.com)
Position:	Acid Rock Drainage (ARD) Lab & Project Manager
Report Certified By:	Ivy Rajan
Signature:	Ivy Rajan

RESULTS		
Reported To:	**1**	Andrew Gault (agault@alexcoresource.com)
	2	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	3	Linda Broughton (lbroughton@alexcoresource.com)
	4	Jane Capp (jane@omipl.com.au)
Date Reported:		October 26, 2016 (Wednesday)

INVOICE	
Submitted To:	Kelli Bergh, BSc, MET, RP Bio (kellib@bmcminerals.com)
	Environmental Manager
Mailing Address:	530-1130 West Pender Street, Vancouver, BC, Canada V6E 4A4.
Contact No:	(778) 233-7058
cc:	BMC Accounts (accounts@bmcminerals.com)
Global Invoice No:	ARD1522-1016E.
Date Submitted:	October 26, 2016 (Wednesday)

NOTES
All samples are stored at no charge for 90 days. Head HCT samples will be stored
until the kinetic testing program is completed.
Please contact the lab if you require additional sample storage time.
Storage charges will apply.

CERTIFICATE OF ANALYSIS ▪ SAMPLE DETAILS

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Sample Description	Wt. of Sample Rec'd (kg)	Condition (Wet/Dry)	Global Notes (if any)
1	TP-OEL-1	Sediment	11.0	Wet	
2	TP-OEL-2	Sediment	12.1	Wet	
3	TP-OEL-3	Sediment	10.2	Wet	
4	TP-OEL-4	Sediment	12.4	Wet	
5	TP-OEL-5	Sediment	8.7	Wet	
6	TP-OEL-6	Sediment	11.8	Wet	
7	TP-OEL-9	Sediment	8.7	Wet	
8	TP-OEL-10	Rock	8.8	Wet	
9	TP-OEL-12	Rock	5.6	Wet	
10	TP-OEL-13	Rock	5.4	Damp	
11	TP-OEL-14	Rock	8.2	Wet	
12	TP-OEL-15	Rock	7.3	Wet	
13	TP-OEL-16	Rock	7.9	Wet	
14	TP-OEL-17	Rock	7.3	Wet	
15	TP-OEL-18	Sediment	10.2	Wet	
16	TP-OEL-19	Rock	5.8	Damp	
17	TP-OEL-JA50	Sediment	7.5	Wet	
18	TP-OEL-JA51	Sediment	7.1	Wet	
19	TP-OEL-JA52	Sediment	10.2	Wet	
20	TP-OEL-JA53	Sediment	7.9	Wet	
21	TP-OEL-JA54	Sediment	6.5	Wet	
22	TP-OEL-JA55	Sediment	10.1	Wet	
23	TP-OEL-JA56	Sediment	7.0	Wet	
24	TP-OEL-JA57	Sediment	7.8	Wet	
25	TP-OEL-JA58	Sediment	8.0	Wet	
26	TP-OEL-JA59	Sediment	5.8	Wet	
27	TP-OEL-JA61	Sediment	7.5	Wet	
28	TP-OEL-JA62	Sediment	6.1	Wet	
29	TP-OEL-JA63	Sediment	6.9	Damp	
30	TP-OEL-JA64	Sediment	8.1	Wet	

Total wt. of sample rec'd (kg): **248.1**

Sample Receipt Info:	
Date Sample Received:	October 3, 2016 (Monday)
Samples Received By:	Ivy Rajan

Analytical Instructions:	
From:	Kai Woloshyn (kwoloshyn@alexcoresource.com)
	By Email/COC.
Date Instruction Received:	October 3, 2016 (Monday)

Global ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ ABA + QA/QC RESULTS

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Paste pH	Fizz Rating	Total Inorganic C	$CaCO_3$ Equivalents[*1]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur[*2]	AP[*3]	Mod. ABA NP	NNP[*4]	NPR[*5]
	Units:	**pH Units**		**wt %**	**kg CaCO3/tonne**	**wt.%**	**wt.%**	**wt.%**	**kg CaCO3/tonne**			
Reported Detection Limit:		***0.01***		***0.02***	***1.7***	**0.01**	**0.01**	**0.01**	**0.3**	***0.5***		
1	TP-OEL-1	8.7	Moderate	0.47	39.2	0.01	0.01	<0.01	<0.3	42.4	42.4	N/A
2	TP-OEL-2	7.7	None	0.02	1.7	<0.01	<0.01	<0.01	<0.3	8.2	8.2	N/A
3	TP-OEL-3	8.7	Slight	0.33	27.5	<0.01	<0.01	<0.01	<0.3	30.9	30.9	N/A
4	TP-OEL-4	8.6	Strong	1.15	95.8	0.01	0.01	<0.01	<0.3	95.2	95.2	N/A
5	TP-OEL-5	8.4	None	<0.02	<1.7	0.01	0.01	<0.01	<0.3	7.7	7.7	N/A
6	TP-OEL-6	8.7	Moderate	0.29	24.2	<0.01	<0.01	<0.01	<0.3	29.8	29.8	N/A
7	TP-OEL-9	9.0	Moderate	0.35	29.2	<0.01	<0.01	<0.01	<0.3	35.4	35.4	N/A
8	TP-OEL-10	8.8	Strong	2.93	244.2	0.04	0.02	0.02	0.6	241.5	240.9	386.4
9	TP-OEL-12	8.7	Moderate	0.21	17.5	0.02	0.02	<0.01	<0.3	28.8	28.8	N/A
10	TP-OEL-13	9.2	Strong	0.85	70.8	<0.01	0.01	<0.01	<0.3	72.3	72.3	N/A
11	TP-OEL-14	8.7	Strong	1.71	142.5	0.03	0.03	<0.01	<0.3	139.7	139.7	N/A
12	TP-OEL-15	9.0	Strong	0.64	53.3	<0.01	<0.01	<0.01	<0.3	65.4	65.4	N/A
13	TP-OEL-16	8.9	Strong	1.43	119.2	0.01	0.01	<0.01	<0.3	118.1	118.1	N/A
14	TP-OEL-17	8.6	Strong	0.47	39.2	0.01	0.01	<0.01	<0.3	45.7	45.7	N/A
15	TP-OEL-18	7.6	None	<0.02	<1.7	0.02	0.02	<0.01	<0.3	1.8	1.8	N/A
16	TP-OEL-19	8.8	Slight	0.09	7.5	0.02	0.01	0.01	0.3	14.9	14.6	47.7
17	TP-OEL-JA50	7.8	None	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	5.4	5.4	N/A
18	TP-OEL-JA51	8.7	Moderate	0.44	36.7	0.02	0.02	<0.01	<0.3	42.9	42.9	N/A
19	TP-OEL-JA52	8.5	Slight	0.14	11.7	<0.01	<0.01	<0.01	<0.3	17.3	17.3	N/A
20	TP-OEL-JA53	8.8	Strong	1.09	90.8	0.01	0.01	<0.01	<0.3	93.5	93.5	N/A
21	TP-OEL-JA54	8.8	Strong	0.51	42.5	<0.01	<0.01	<0.01	<0.3	11.3	11.3	N/A
22	TP-OEL-JA55	8.8	Strong	0.80	66.7	0.01	0.01	<0.01	<0.3	71.3	71.3	N/A
23	TP-OEL-JA56	8.8	Strong	0.55	45.8	0.03	0.02	0.01	0.3	51.9	51.6	166.1
24	TP-OEL-JA57	8.6	Moderate	0.79	65.8	0.01	0.01	<0.01	<0.3	71.9	71.9	N/A
25	TP-OEL-JA58	8.7	Strong	0.70	58.3	0.02	0.02	<0.01	<0.3	63.3	63.3	N/A
26	TP-OEL-JA59	8.5	Strong	0.80	66.7	0.01	0.01	<0.01	<0.3	69.3	69.3	N/A
27	TP-OEL-JA61	8.8	Strong	0.70	58.3	0.03	0.03	<0.01	<0.3	59.4	59.4	N/A
28	TP-OEL-JA62	8.4	Slight	0.21	17.5	0.02	0.02	<0.01	<0.3	24.1	24.1	N/A
29	TP-OEL-JA63	8.9	Strong	0.66	55.0	0.01	0.01	<0.01	<0.3	59.4	59.4	N/A
30	TP-OEL-JA64	8.8	Strong	0.82	68.3	<0.01	<0.01	<0.01	<0.3	70.8	70.8	N/A
QUALITY ASSURANCE / QUALITY CONTROL												
Replicates:												
2	TP-OEL-2					<0.01						
2 R	TP-OEL-2 (Rep)					<0.01						
10	TP-OEL-13	9.2	Strong				0.02			72.3		
10 R	TP-OEL-13 (Rep)	9.2	Strong				0.02			72.5		
12	TP-OEL-15									65.4		
12 R	TP-OEL-15									69.9		
20	TP-OEL-JA53	8.8	Strong				0.02			93.5		
20 R	TP-OEL-JA53 (Rep	8.8	Strong				0.02			95.7		
28	TP-OEL-JA62			0.21	17.5							
28 R	TP-OEL-JA62 (Rep)			0.21	17.5							
30	TP-OEL-JA64	8.8	Strong				0.02			70.8		
30 R	TP-OEL-JA64 (Rep	8.8	Strong				0.02			70.8		
Certified Reference Material (CRM) Analysis:												
Certified Reference Material		KZK-1		SY-4		OREAS 24b	RTS-3a			2) KZK-1 (Moderate)		
CRM True Value		**8.80**		**0.96**		**0.190**	**1.10**			**1) 58.9** **2) 61.6**		
Reference Material Results		8.93		0.93		0.190	1.32			1) 60.6 2) 57.6		
Tolerance (+/-)		***0.09***		***0.03***		***IND***	***0.20***			***1) 1.1*** ***2) 3.4***		
Method Blank Analysis:												
Method Blank Results				<0.02		<0.01	<0.01					
GLOBAL SOP No. / METHOD:		*ARD-004*	*ARD-005*	*HCl Leach/ LECO*	*Calc.*	*LECO*	*(HCl Leach)*	*Calc.*	*Calc.*	*ARD-005*	*Calc.*	*Calc.*

NOTES:

Date of Analysis (24h): October 13/14, 2016.

pH of DI water (pH Units): 5.57

EC of DI water (µS/cm): 0.19

For STD SY-4, the TIC results are evaluated against the COA CO2 (3.5%) value calculated as carbon - i.e. 0.96%. The COA 95% Confidence Interval then calculates to 0.03%.

METHODS:

Total sulphur by LECO, total inorganic carbon by HCl leach followed by Leco analysis. Job No: MA0033-OCT16.

ABBREVIATIONS:

R = Rep = Replicate (a replicate is a sub-sample scooped from a single pulp sample bag produced per client sample)

D = Dup = Duplicate (a duplicate is 2nd sub-pulp sample bag produced by processing a 2nd split of the client sample. A duplicate pulp sample is prepared only at client request

NP = Neutralization Potential

Calc. = Calculation

COA = Certificate Of Analysis

IND = Indeterminate

CALCULATIONS:

- *[1] $CaCO_3$ Equivalents: Is based on TIC (Total Inorganic Carbon)
- *[2] Sulphide-Sulphur: Total-sulphur - sulphate-sulphur
- *[3] AP (Acid Potential): Sulphide-sulphur x 31.25
- *[4] NNP (Net Neutralization Potential): NP - AP
- *[5] NPR (Neutralization Potential Ratio): NP/AP

REFERENCES:

Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)

ABA: Air-dried, jaw-crushed, split by riffling and pulverized to 85% passing 200 mesh (75 µm).

Modified ABA (Sobek) NP: MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).

Sulphate Sulphur: Based on MEND method. The S extracted is determined by analysing the extract for SO4 using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

Global
ARD Testing Services Inc.

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Method	IMS-130																										
		Analyte	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Gold (Au)	Boron (B)	Barium (Ba)	Beryllium (Be)	Bismuth (Bi)	Calcium (Ca)	Cadmium (Cd)	Cerium (Ce)	Cobalt (Co)	Chromium (Cr)	Cesium (Cs)	Copper (Cu)	Iron (Fe)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Mercury (Hg)	Indium (In)	Potassium (K)	Lanthanum (La)	Lithium (Li)	Magnesium (Mg)	Manganese (Mn)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
		MDL	0.01	0.01	0.1	0.005	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5
		Sample Type																										
1	TP-OEL-1	Pulp	0.16	1.00	16.6	<0.005	<10	341	0.30	0.15	1.62	0.46	25.88	9.3	96	0.56	25.5	2.33	2.99	0.10	0.14	0.05	0.017	0.13	11.3	9.7	0.69	562
2	TP-OEL-2	Pulp	0.11	1.06	43.0	0.01	<10	131	0.33	0.13	0.43	0.78	39.21	10.4	91	0.80	21.5	2.83	4.97	0.12	0.06	0.02	0.032	0.13	15.3	11.9	0.59	576
3	TP-OEL-3	Pulp	0.20	1.08	18.7	<0.005	<10	245	0.36	0.20	1.23	0.77	40.89	11.1	70	1.48	32.8	2.54	3.82	0.12	0.16	0.05	0.021	0.18	19.3	10.5	0.77	421
4	TP-OEL-4	Pulp	0.13	0.75	27.6	<0.005	<10	222	0.24	0.12	3.30	0.54	22.31	7.8	84	0.52	21.0	2.20	2.34	0.07	0.10	0.03	0.016	0.12	9.6	6.9	0.82	631
5	TP-OEL-5	Pulp	0.29	0.88	21.4	<0.005	<10	233	0.29	0.19	0.39	0.67	32.21	8.6	96	0.94	30.4	2.13	2.94	0.10	0.07	0.04	0.018	0.15	14.0	9.3	0.6	444
6	TP-OEL-6	Pulp	0.10	1.10	9.4	<0.005	<10	157	0.47	0.32	1.10	0.26	39.79	9.5	119	2.06	24.5	2.29	4.14	0.12	0.06	0.01	0.024	0.29	18.5	14.3	0.85	413
7	TP-OEL-9	Pulp	0.12	0.82	12.2	<0.005	<10	235	0.31	0.15	1.34	0.42	34.02	8.5	137	1.22	22.9	1.92	2.82	0.10	0.10	0.04	0.016	0.20	14.8	8.2	0.66	338
8	TP-OEL-10	Pulp	0.08	2.25	21.3	<0.005	<10	43	0.14	0.04	8.81	0.32	26.93	13.4	87	0.21	23.0	4.12	7.12	0.17	<0.02	<0.01	0.049	0.01	10.7	12.9	2.17	1181
9	TP-OEL-12	Pulp	0.08	4.64	26.4	<0.005	<10	44	0.23	0.03	1.71	0.28	11.13	44.3	75	0.28	35.5	9.51	10.03	0.27	0.04	<0.01	0.017	0.02	4.2	27.0	3.17	1478
10	TP-OEL-13	Pulp	0.06	0.97	20.2	<0.005	<10	120	0.18	0.02	2.94	0.22	35.37	13.0	110	0.43	30.8	2.24	2.97	0.09	<0.02	<0.01	0.019	0.11	12.9	6.0	0.7	815
11	TP-OEL-14	Pulp	0.33	1.87	19.4	<0.005	<10	128	0.26	0.12	5.38	0.9	31.92	18.4	143	0.60	74.8	4.00	5.05	0.09	0.13	<0.01	0.050	0.19	14.0	8.5	1.49	1577
12	TP-OEL-15	Pulp	0.05	2.12	8.9	<0.005	<10	70	0.26	0.04	2.24	0.35	48.32	20.1	90	0.54	17.1	4.90	9.68	0.17	0.08	<0.01	0.052	0.08	17.5	8.2	1.52	711
13	TP-OEL-16	Pulp	1.73	0.39	13.1	<0.005	<10	91	0.18	3.72	4.48	0.25	61.8	9.4	81	0.87	21.2	1.69	1.32	0.13	0.09	<0.01	0.009	0.27	28.2	1.9	0.12	1234
14	TP-OEL-17	Pulp	0.21	2.53	12.8	<0.005	<10	69	0.35	0.04	1.82	0.67	68.07	21.6	71	0.74	18.7	7.26	11.73	0.23	0.03	<0.01	0.079	0.12	28.9	13.2	1.51	922
15	TP-OEL-18	Pulp	0.28	0.48	10.7	<0.005	<10	88	0.25	0.81	0.12	1.21	42.65	5.2	71	0.83	34.2	1.34	1.80	0.09	0.15	0.03	0.032	0.18	18.4	4.4	0.19	385
16	TP-OEL-19	Pulp	0.05	1.23	3.5	<0.005	<10	377	0.30	0.03	0.60	0.2	46.71	7.4	127	2.36	12.2	3.34	6.72	0.16	0.07	<0.01	0.041	0.38	18.8	8.4	0.55	397
17	TP-OEL-JA50	Pulp	0.02	1.95	1.3	<0.005	<10	89	0.54	0.02	0.18	0.03	38.59	27.9	64	0.30	70.8	4.26	6.07	0.13	0.14	<0.01	0.019	0.12	17.2	26.3	0.8	1798
18	TP-OEL-JA51	Pulp	0.14	0.89	9.8	<0.005	<10	325	0.31	0.15	1.48	0.45	23.51	7.9	100	0.64	21.3	1.93	2.66	0.07	0.07	0.04	0.015	0.14	10.3	9.8	0.76	421
19	TP-OEL-JA52	Pulp	0.21	1.09	25.5	<0.005	<10	275	0.44	0.25	0.78	0.5	40.75	10.1	102	1.62	28.4	2.50	4.28	0.13	0.11	0.05	0.026	0.23	19.3	13.6	0.68	484
20	TP-OEL-JA53	Pulp	0.13	0.91	17.2	<0.005	<10	294	0.33	0.37	3.52	0.42	23.98	6.6	104	0.84	19.3	1.87	2.78	0.07	0.09	0.07	0.016	0.16	10.6	9.0	0.7	369
21	TP-OEL-JA54	Pulp	0.15	0.92	18.3	<0.005	<10	258	0.28	0.12	1.93	0.41	30.37	8.4	89	0.73	21.9	2.04	2.78	0.08	0.06	0.05	0.016	0.13	13.4	8.2	0.67	399
22	TP-OEL-JA55	Pulp	0.18	0.96	9.0	<0.005	<10	370	0.38	0.34	2.44	0.64	25.28	7.0	98	1.01	19.7	1.73	2.82	0.07	0.12	0.06	0.017	0.18	11.1	10.1	0.91	346
23	TP-OEL-JA56	Pulp	0.20	0.87	10.1	<0.005	<10	633	0.42	0.17	1.82	0.59	24.32	7.8	107	1.10	23.9	1.76	2.95	0.08	0.15	0.05	0.017	0.16	10.4	12.3	0.76	419
24	TP-OEL-JA57	Pulp	0.21	1.12	15.7	<0.005	<10	351	0.41	0.15	2.32	0.62	30.23	10.0	102	1.05	31.8	2.53	3.11	0.08	0.08	0.14	0.021	0.22	13.2	10.0	1.15	537
25	TP-OEL-JA58	Pulp	0.19	0.95	10.2	<0.005	<10	605	0.37	0.14	2.19	0.59	26.31	7.1	102	0.91	20.5	1.90	2.82	0.07	0.11	0.06	0.017	0.18	11.4	9.5	0.8	476
26	TP-OEL-JA59	Pulp	0.21	1.14	12.4	<0.005	<10	418	0.44	0.21	2.34	0.76	31.91	9.5	74	1.25	27.7	2.29	3.36	0.09	0.11	0.08	0.021	0.20	14.1	12.9	1	480
27	TP-OEL-JA61	Pulp	0.15	0.93	8.6	<0.005	<10	649	0.37	0.15	2.10	0.41	24.92	6.3	87	1.06	20.7	1.98	2.74	0.08	0.14	0.04	0.018	0.17	10.8	12.3	0.85	497
28	TP-OEL-JA62	Pulp	0.21	1.19	11.7	<0.005	<10	451	0.45	0.19	0.94	0.52	29.99	9.8	88	1.19	36.6	2.36	3.46	0.10	0.10	0.10	0.020	0.19	13.2	10.4	0.86	569
29	TP-OEL-JA63	Pulp	0.16	0.77	11.5	<0.005	<10	333	0.29	0.11	2.16	0.51	25.96	7.2	91	0.68	21.3	1.78	2.43	0.07	0.09	0.07	0.014	0.15	11.3	7.5	0.82	380
30	TP-OEL-JA64	Pulp	0.06	1.89	4.3	<0.005	<10	240	0.32	0.07	2.95	0.23	28.79	8.4	55	0.75	14.7	2.71	4.75	0.08	0.08	0.04	0.018	0.13	12.6	22.4	1.41	482
QUALITY ASSURANCE / QUALITY CONTROL																													
Pulp Replicates:																													
24	TP-OEL-JA57	Pulp	0.21	1.12	15.7	<0.005	<10	351	0.41	0.15	2.32	0.62	30.23	10.0	102	1.05	31.8	2.53	3.11	0.08	0.08	0.14	0.021	0.22	13.2	10.0	1.15	537
24 R	TP-OEL-JA57	Pulp-Rep	0.21	1.15	16.1	<0.005	<10	360	0.42	0.16	2.32	0.63	30.33	10.4	102	1.07	33.2	2.59	3.20	0.08	0.07	0.12	0.021	0.22	13.3	10.2	1.17	541
Certified Reference Material																													
STD OREAS 24b			0.070	3.24	7.90	<0.005	<10	148	1.71	0.69	0.46	0.05	62.8	15.9	105	9.89	36.6	3.91	10.95	0.27	0.59	<0.01	0.049	1.17	29.9	47.7	1.36	350
True Value STD OREAS 24b			**0.058**	**3.15**	**7.96**	**0.002**	**6.23**	**146**	**1.65**	**0.73**	**0.461**	**0.046**	**61.0**	**15.7**	**106**	**9.15**	**36.4**	**3.93**	**10.80**	**0.26**	**0.52**	**<0.01**	**0.048**	**1.17**	**29.2**	**45.6**	**1.36**	**350**
% Difference			20.7	2.9	-0.8			1.4	3.6	-5.5	-0.2	8.7	3.0	1.3	-0.9	8.1	0.5	-0.5	1.4	3.8	13.5		2.1	0.0	2.4	4.6	0.0	0.0
Tolerance (%)			***NR***	***0.2***	***0.95***	***NR***	***NR***	***12***	***NR***	***0.13***	***0.030***	***NR***	***NR***	***1.9***	***9***	***0.56***	***3.3***	***0.21***	***1.1***	***NR***	***NR***	***NR***	***NR***	***0.07***	***NR***	***3.5***	***0.07***	***20***
Method Blank:																													
Method Blank			<0.01	<0.01	<0.1	<0.005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	<0.1	<0.01	<5

Notes:
Job No: MA0033-OCT16

Analytical Methods (IMS-130):
A 0.5 g of pulp sample is leached in hot (95°C) 3:1 aqua regia digestion followed by ICP Mass Spec analysis.
Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5 g).
Refractory and graphitic samples can limit Au solubility.

Abbreviations:
R / Rep = Replicate (a replicate is a sub-sample scooped from a single sample bag produced per client sample)
D / Dup = Duplicate (a duplicate is 2nd sub-sample bag produced by processing a second split of the original client sample received)
MDL = Measurable Detection Limit
IND = Indeterminate

On Cerfified Reference Material and Tolerance:
Any one element in a run reporting outside tolerance limits does not constitute failure of the standard.
As per Certificate of Analysis (COA): All values indicated are Certified. Values indicated in green are indicative only.
NR = Not Reported (in the Certificate Of Analysis).

CERTIFICATE OF ANALYSIS ▪ METALS RESULTS BY AQUA REGIA DIGEST & ICP-MS ANALYSIS ON SOLIDS (Code IMS-130)

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

S. No.	Sample ID	Method																									
		Analyte	Molybdenum (Mo)	Sodium (Na)	Niobium (Nb)	Nickel (Ni)	Phosphorous (P)	Lead (Pb)	Rubidium (Rb)	Rhenium (Re)	Sulphur (S)	Antimony (Sb)	Scandium (Sc)	Selenium (Se)	Tin (Sn)	Stronium (Sr)	Tantalum (Ta)	Tellurium (Te)	Thorium (Th)	Titanium (Ti)	Thallium (Tl)	Uranium (U)	Vandium (V)	Tungsten (W)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
		Unit	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		MDL	0.05	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5
		Sample T																									
1	TP-OEL-1	Pulp	2.04	0.03	0.15	33.6	1017	8.0	6.5	0.001	0.03	0.62	2.7	0.3	0.4	47.6	<0.01	0.02	4.3	0.03	0.08	0.89	31	0.13	7.53	68	6.8
2	TP-OEL-2	Pulp	2.73	0.03	0.37	23.4	1327	15.0	7.7	0.001	0.01	0.37	4.2	0.5	0.7	24.4	<0.01	0.1	6.9	0.045	0.07	1.17	37	0.12	10.87	108	5.3
3	TP-OEL-3	Pulp	1.98	0.02	0.25	39.2	1232	16.1	12.4	<0.001	0.01	0.70	3.9	0.4	0.6	41.1	<0.01	0.08	7.4	0.068	0.13	0.76	39	0.23	11.47	114	8.8
4	TP-OEL-4	Pulp	2.31	0.02	0.13	24.9	1053	10.5	6.0	<0.001	0.02	0.38	2.4	0.4	0.4	74	<0.01	0.08	4	0.026	0.05	0.74	26	0.07	8.12	75	6.6
5	TP-OEL-5	Pulp	2.06	0.02	0.25	31.5	1032	20.6	9.4	0.001	0.02	0.56	2.9	0.4	0.5	17.9	<0.01	0.06	5.9	0.057	0.1	0.72	32	0.12	10.85	112	5.7
6	TP-OEL-6	Pulp	1.69	0.04	0.39	35.6	705	10.0	18.8	0.001	<0.01	0.20	3.5	0.3	1	36.3	<0.01	0.07	8.5	0.1	0.14	1.04	36	0.91	11.30	64	4.6
7	TP-OEL-9	Pulp	1.49	0.03	0.22	35.3	944	9.0	13.4	<0.001	<0.01	0.53	2.6	0.3	0.7	39.5	<0.01	0.07	5.4	0.075	0.11	0.78	34	0.34	8.95	69	6.3
8	TP-OEL-10	Pulp	1.14	0.01	0.07	28.7	1196	9.7	0.6	<0.001	0.06	0.10	12.5	0.5	0.4	470.4	<0.01	0.07	2	0.032	<0.02	0.14	102	<0.05	8.86	57	1.8
9	TP-OEL-12	Pulp	1.14	<0.01	0.33	36.4	1610	4.1	1.1	0.001	0.04	0.18	5.1	0.4	0.5	70.1	<0.01	0.05	0.6	0.555	<0.02	0.18	151	<0.05	11.63	182	1.8
10	TP-OEL-13	Pulp	1.79	0.03	0.13	28.4	1028	3.6	4.6	0.001	0.01	<0.05	4.4	0.5	0.3	97.7	<0.01	0.05	3	0.054	0.02	0.66	28	<0.05	12.80	40	1.6
11	TP-OEL-14	Pulp	4.24	0.01	<0.05	47.1	1885	121.3	6.3	0.001	0.05	0.09	7.3	0.7	0.2	223.7	<0.01	0.05	3.8	0.009	0.05	1.91	90	0.07	8.02	164	9.0
12	TP-OEL-15	Pulp	1.18	0.02	0.15	17.1	1260	7.1	3.6	0.001	0.02	<0.05	13.2	0.4	0.5	66.3	<0.01	0.05	6.6	0.079	<0.02	0.5	141	<0.05	15.16	150	5.9
13	TP-OEL-16	Pulp	2.44	0.01	0.30	24.4	806	119.8	9.9	<0.001	0.02	0.05	1.5	0.5	0.3	113.5	<0.01	0.07	11	0.01	0.09	0.64	6	<0.05	18.98	73	7.6
14	TP-OEL-17	Pulp	2.01	0.02	0.20	18.8	1695	2.7	8.0	0.001	0.03	<0.05	15.5	0.7	0.5	63.6	<0.01	0.06	8	0.014	0.03	1.1	173	<0.05	30.57	157	3.5
15	TP-OEL-18	Pulp	1.37	0.01	0.23	9.2	361	65.9	9.5	<0.001	0.03	0.32	1.4	0.3	0.4	6.8	<0.01	0.04	11.6	0.027	0.11	1.02	12	<0.05	8.40	312	9.2
16	TP-OEL-19	Pulp	2.14	0.03	0.33	5.7	949	2.7	18.9	<0.001	0.03	<0.05	5.5	0.4	1.1	25.9	<0.01	0.03	6.6	0.101	0.14	0.68	43	<0.05	13.22	82	5.6
17	TP-OEL-JA50	Pulp	0.63	0.03	<0.05	40.3	779	1.5	5.3	<0.001	<0.01	0.07	2.6	0.3	<0.2	10.6	<0.01	0.04	7.6	<0.005	<0.02	0.72	20	<0.05	4.28	93	11.4
18	TP-OEL-JA51	Pulp	1.31	0.02	0.13	44.4	716	7.9	7.7	<0.001	0.03	0.65	2.3	0.3	0.4	77.8	<0.01	0.04	4.8	0.026	0.1	0.81	29	0.06	7.30	65	5.8
19	TP-OEL-JA52	Pulp	2.37	0.03	0.36	46.8	935	12.6	16.2	0.001	0.02	1.30	4	0.4	0.9	28.8	<0.01	0.05	8	0.069	0.13	1.12	38	0.26	11.22	71	7.7
20	TP-OEL-JA53	Pulp	1.64	0.04	0.17	27.8	818	7.7	9.2	<0.001	0.03	0.53	2.6	0.3	0.6	94.5	<0.01	0.05	4.5	0.045	0.09	0.71	35	0.11	8.23	56	6.0
21	TP-OEL-JA54	Pulp	2.01	0.03	0.18	35.1	1027	8.6	7.0	<0.001	0.02	0.62	2.6	0.3	0.7	55.9	<0.01	0.04	5	0.045	0.08	0.69	32	0.20	8.25	59	5.6
22	TP-OEL-JA55	Pulp	1.73	0.03	0.20	33.4	841	9.3	10.5	0.002	0.03	0.74	2.4	0.4	0.7	69.1	<0.01	0.02	5	0.035	0.14	0.92	38	0.34	8.62	76	6.6
23	TP-OEL-JA56	Pulp	2.23	0.03	0.26	46.1	825	10.7	11.7	0.003	0.05	0.72	2.8	0.5	0.7	74.3	<0.01	0.05	6	0.036	0.15	1.02	33	0.19	10.54	66	8.0
24	TP-OEL-JA57	Pulp	2.42	0.02	0.20	47.5	1016	10.8	10.4	0.002	0.03	1.37	3.2	0.6	0.4	85.5	<0.01	0.04	5.4	0.036	0.12	1.09	42	0.09	8.87	88	7.2
25	TP-OEL-JA58	Pulp	2.34	0.03	0.24	32.8	946	9.5	9.7	0.002	0.03	0.76	2.5	0.5	0.6	78	<0.01	0.03	5	0.033	0.11	1.01	36	0.15	8.52	75	7.7
26	TP-OEL-JA59	Pulp	2.19	0.02	0.19	38.9	835	12.2	11.0	0.002	0.03	0.97	2.9	0.4	0.5	70.4	<0.01	0.03	6.3	0.036	0.16	1.39	42	0.21	9.96	93	7.9
27	TP-OEL-JA61	Pulp	1.96	0.03	0.25	25.7	891	8.8	11.0	0.002	0.05	0.61	2.4	0.5	0.7	76	<0.01	0.03	6.9	0.046	0.12	0.97	34	0.10	9.46	65	7.6
28	TP-OEL-JA62	Pulp	3.39	0.02	0.19	52.1	736	13.2	10.4	0.002	0.05	1.04	3.1	0.4	0.5	36.2	<0.01	0.03	5.6	0.041	0.16	0.92	56	0.13	8.58	88	7.9
29	TP-OEL-JA63	Pulp	1.66	0.02	0.12	36.2	921	8.0	7.7	0.001	0.02	0.86	2.3	0.4	0.4	69.5	<0.01	0.04	4.3	0.033	0.09	0.88	34	0.08	7.77	63	6.0
30	TP-OEL-JA64	Pulp	0.72	0.03	0.11	13.5	575	7.1	4.6	<0.001	0.03	0.29	3.8	0.3	0.4	72.4	<0.01	0.05	4.3	0.043	0.06	0.47	29	<0.05	9.10	67	6.2
QUALITY ASSURANCE / QUALITY CO																											
Pulp Replicates:																											
24	TP-OEL-JA57	Pulp	2.42	0.02	0.20	47.5	1016	10.8	10.4	0.002	0.03	1.37	3.2	0.6	0.4	85.5	<0.01	0.04	5.4	0.036	0.12	1.09	42	0.09	8.87	88	7.2
24 R	TP-OEL-JA57	Pulp-Rep	2.40	0.02	0.20	50.4	1031	10.8	10.5	0.002	0.03	1.43	3.4	0.5	0.4	87.3	<0.01	0.05	5.3	0.037	0.12	1.08	43	0.08	9.08	89	7.5
Certified Reference Material																											
STD OREAS 24b			4.01	0.11	0.37	57.5	608	9.00	114.6	<0.001	0.20	0.47	10.20	0.40	2.40	30.0	<0.01	<0.01	14.3	0.206	0.68	1.75	78	1.26	12.31	98	26.0
True Value STD OREAS 24b			**3.86**	**IND**	**0.31**	**57.0**	**620**	**9.23**	**114**	**<0.001**	**0.20**	**0.48**	**9.51**	**0.42**	**2.26**	**29.0**	**<0.05**	**<0.02**	**14.3**	**0.198**	**0.66**	**1.74**	**79**	**1.19**	**12.30**	**93**	**24.5**
% Difference			3.9		19.4	0.9	-1.9	-2.5	0.5	0.0	0.0	-2.1	7.3		6.2	3.4			0.0	4.0	3.0	0.6	-1.3	5.9	0.1	5.4	6.1
Tolerance (%)			***0.37***	***NR***	***N/B***	***5***	***NR***	***1.29***	***15***	***NR***	***0.02***	***NR***	***1.39***	***NR***	***0.30***	***NR***	***NR***	***NR***	***1.1***	***0.017***	***0.08***	***0.26***	***5***	***NR***	***1.7***	***6***	***3.2***
Method Blank:																											
Method Blank			<0.05	<0.01	<0.05	<0.2	<10	<0.2	<0.1	<0.001	<0.01	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<2	<0.5

Parameter	Method	Unit	RDL	1	4	6	8	8 R	9	10	11	12	13	14
				TP-OEL-1	TP-OEL-4	TP-OEL-6	TP-OEL-10	TP-OEL-10 (Rep)	TP-OEL-12	TP-OEL-13	TP-OEL-14	TP-OEL-15	TP-OEL-16	TP-OEL-17
Weight of dry sample used	Weighing Scale	g	0.01	250	250	250	250	N/A	250	250	250	250	250	250
Volume of DI water used	Graduated Cylinder	mL	0.50	750	750	750	750	N/A	750	750	750	750	750	750
On filtered samples using 0.45 micron filter paper														
pH	pH Meter	pH units	0.01	7.8	8.8	7.8	8.8		7.9	8.2	8.3	8.3	8.6	7.8
EC	EC Meter	µS/cm	1	50	38	45	51		62	65	67	62	60	69
Acidity (to pH 8.3)	Titration/Calc.	mg CaCO3/L	0.5	4.5	<0.5	3.3	<0.5		2.5	0.5	0.5	0.3	<0.5	1.5
Alkalinity (to pH 4.5)	Titration/Calc.	mg CaCO3/L	0.5	25.0	20.0	21.5	22.5		27.0	29.0	30.0	28.8	26.5	31.0
Dissolved Sulphate (SO4)	Turbidimetry	mg/L	1.0	<1.0	<1.0	<1.0	<1.0		2.3	1.3	<1.0	<1.0	<1.0	1.1
Fluoride (F)	Selective Ion Electrode	mg/L	0.010	0.130	0.100	0.082	0.038		0.050	0.058	0.086	0.056	0.061	0.065
Dissolved Organic Carbon		mg/L	0.5	4.2	2.6	3.9								
Dissolved Metals Analysis by ICP-MS:														
Hardness, Total (as CaCO3	ICP-MS	mg/L	0.1	23	17	20	21	21	26	26	28	25	23	28
Aluminum, dissolved	ICP-MS	mg/L	0.001	0.205	0.034	0.094	0.237	0.233	0.33	0.25	0.143	0.294	0.171	0.176
Antimony, dissolved	ICP-MS	mg/L	0.00005	0.00031	0.00007	0.00011	0.00022	0.0002	0.00069	0.00013	0.00022	0.00008	0.00007	0.00007
Arsenic, dissolved	ICP-MS	mg/L	0.00005	0.00087	0.00063	0.00054	0.00371	0.00375	0.00178	0.0022	0.00117	0.00056	0.00047	0.00065
Barium, dissolved	ICP-MS	mg/L	0.0001	0.0376	0.026	0.0167	0.0111	0.0109	0.0312	0.0053	0.0025	0.0057	0.0021	0.007
Beryllium, dissolved	ICP-MS	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth, dissolved	ICP-MS	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	7E-07	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Boron, dissolved	ICP-MS	mg/L	0.001	0.002	0.002	0.001	0.004	0.003	0.004	0.006	0.003	0.002	0.002	0.003
Cadmium, dissolved	ICP-MS	mg/L	0.000002	0.000025	<0.000002	0.000003	0.000010	0.000007	0.000010	0.000002	0.000026	0.000005	0.000003	0.000003
Calcium, dissolved	ICP-MS	mg/L	0.04	7.81	6.05	6.91	7.93	7.96	9.48	9.92	10.60	9.39	8.95	10.60
Chromium, dissolved	ICP-MS	mg/L	0.0001	0.00014	<0.00010	0.00023	<0.00010	0.00003	<0.00010	<0.00010	0.00012	<0.00010	<0.00010	<0.00010
Cobalt, dissolved	ICP-MS	mg/L	0.000005	0.000032	<0.000005	0.000035	0.000021	0.000022	0.000069	0.00003	0.000025	0.000033	0.000007	0.000016
Copper, dissolved	ICP-MS	mg/L	0.0001	0.0017	0.0002	0.0014	0.0010	0.0010	0.0023	0.0018	0.0011	0.0017	0.0007	0.0008
Iron, dissolved	ICP-MS	mg/L	0.002	0.041	0.004	0.076	0.006	0.006	0.006	0.004	0.008	0.012	0.005	0.005
Lead, dissolved	ICP-MS	mg/L	0.00005	0.00009	<0.00005	0.00071	0.00062	0.00062	0.00013	0.00011	0.00039	0.00013	0.0001	<0.00005
Lithium, dissolved	ICP-MS	mg/L	0.00005	0.00009	0.0004	0.00068	0.00012	0.00011	0.00022	0.00008	0.00028	0.00023	0.0007	0.00206
Magnesium, dissolved	ICP-MS	mg/L	0.005	0.765	0.557	0.548	0.398	0.395	0.539	0.186	0.402	0.385	0.2	0.366
Manganese, dissolved	ICP-MS	mg/L	0.00005	0.00107	0.00015	0.00159	0.00095	0.00099	0.00342	0.00143	0.00163	0.00316	0.00074	0.00235
Mercury, dissolved	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum, dissolved	ICP-MS	mg/L	0.00001	0.00129	0.00258	0.00269	0.00313	0.00319	0.00304	0.00239	0.00862	0.00187	0.00596	0.00353
Nickel, dissolved	ICP-MS	mg/L	0.00002	0.00016	<0.00002	0.00040	0.00020	0.00018	0.00022	0.00023	0.00011	0.00015	0.00009	0.00010
Phosphorus, dissolved	ICP-MS	mg/L	0.01	0.011	<0.010	<0.010	<0.010	<0.01	0.011	<0.010	0.01	<0.010	<0.010	<0.010
Potassium, dissolved	ICP-MS	mg/L	0.01	0.195	0.434	0.959	0.166	0.168	0.540	0.714	0.814	1.090	1.700	1.220
Selenium, dissolved	ICP-MS	mg/L	0.0001	0.00015	0.00023	0.00015	0.00038	0.00038	0.00051	0.00065	0.00036	0.00022	0.00033	0.00027
Silicon, dissolved	ICP-MS	mg/L	0.05	0.42	0.45	0.89	0.69	0.69	0.60	0.84	0.95	0.80	0.95	1.12
Silver, dissolved	ICP-MS	mg/L	0.00001	0.000031	<0.000010	0.000031	0.000019	0.000008	0.000012	0.000015	0.000013	0.000013	<0.000010	<0.000010
Sodium, dissolved	ICP-MS	mg/L	0.01	0.111	0.068	0.161	0.186	0.186	0.071	0.873	0.266	0.538	0.156	0.436
Strontium, dissolved	ICP-MS	mg/L	0.0001	0.0155	0.0155	0.0176	0.0345	0.0342	0.0291	0.0311	0.0313	0.0229	0.0205	0.0363
Sulphur, dissolved	ICP-MS	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.900	0.600	<0.5	<0.5	<0.5	<0.5
Tellurium, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Thallium, dissolved	ICP-MS	mg/L	0.000004	0.000011	0.000004	0.000007	0.000027	0.000026	0.000022	0.000066	0.000004	0.000046	<0.000004	0.000015
Thorium, dissolved	ICP-MS	mg/L	0.00001	0.000013	<0.000010	0.000035	<0.000010	0.000003	<0.000010	<0.000010	0.000012	<0.000010	0.000013	<0.000010
Tin, dissolved	ICP-MS	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Titanium, dissolved	ICP-MS	mg/L	0.0002	0.0010	<0.0002	0.0025	<0.0002	0.0001	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Uranium, dissolved	ICP-MS	mg/L	0.000001	0.000105	0.000067	0.000493	0.000070	0.00007	0.000021	0.000238	0.000682	0.000171	0.000180	0.000371
Vanadium, dissolved	ICP-MS	mg/L	0.0002	<0.0002	<0.0002	0.0004	0.0004	0.0004	0.0004	0.0002	0.0005	0.0004	<0.0002	0.0003
Zinc, dissolved	ICP-MS	mg/L	0.001	0.0016	<0.0010	0.0023	<0.0010	0.0008	<0.0010	<0.0010	0.0014	<0.0010	0.0012	<0.0010
Zirconium, dissolved	ICP-MS	mg/L	0.00002	0.00021	<0.00002	0.00009	<0.00002	0.000004	<0.00002	<0.00002	0.00003	<0.00002	<0.00002	<0.00002
Ion Balance														
Major Anions	Calc.	meq/L		0.51	0.41	0.43	0.45	0.45	0.59	0.61	0.60	0.58	0.53	0.65
Major Cations	Calc.	meq/L		0.49	0.37	0.44	0.47	0.47	0.57	0.60	0.61	0.59	0.53	0.63
Difference	Calc.	meq/L		0.02	0.04	0.00	-0.02	-0.02	0.02	0.01	-0.01	-0.01	0.00	0.02
Balance (%)	Calc.	%		1.9%	5.0%	-0.2%	-1.9%	-2.0%	1.4%	1.1%	-0.6%	-0.5%	-0.1%	1.2%
Anions:		*Shake Flask Extract ID:*		*PU1765*	*PU1766*	*PU1767*	*PT6321*	*PT6321*	*PT6322*	*PT6323*	*PT6324*	*PT6325*	*PT6326*	*PT6327*
		Job No:		*B691590*	*B691590*	*B691590*	*B690750*	*B690750*	*B690750*	*B690750*	*B690750*	*B690750*	*B690750*	*B690750*
Cations:		*Shake Flask Extract ID:*		*6101161-01*	*6101161-02*	*6101161-03*	*6101031-01*	*6101031-01*	*6101031-02*	*6101031-03*	*6101031-04*	*6101031-05*	*6101031-06*	*6101031-07*
		Job No:		*6101161*	*6101161*	*6101161*	*6101031*	*6101031*	*6101031*	*6101031*	*6101031*	*6101031*	*6101031*	*6101031*

Notes:

Date of Analysis (24 h): COC-1 (x8 SFE): Oct. 12/13, 2016; COC-2 (additional 8 SFE request 14-Oct-2016): Oct. 16/17, 2016.

pH of DI water used (pH Units): 5.58 / 5.61

EC of DI water used (µS/cm): 0.54 / 0.61

Abbreviations:

R / Rep = Replicate (which involves the analysis of the same Shake Flask Extract aliquot).

D / Dup = Duplicate (which involves the analysis of a 2nd SF extract, produced by processing a separate split of the original client sample received).

EC = Electrical Conductivity

ORP = Oxidation Reduction Potential

RDL = Reportable Detection Limit.

Calc. = Calculation

Method Reference: Prediction Manual for Drainage Chemistry from Sulphidic Geologic Material, MEND Report 1.20.1; Version 0 - Dec. 2009. Section 11.5; P 11 (8-9).

Extraction Method used: Using Gyratory Shaker for 24 h (± 2 h - gentle agitation).

Liquid:Solid ratio used: 3:1; 750 mL DI H_2O: 250 g of crushed <1/4 inch (<6.3 mm) material.

CERTIFICATE OF AI

CERTIFICATE OF ANALYSIS ▪ MEND-SHAKE FLASK EXTRACTION RESULTS

Global ARD Testing Services Inc.

PAGE: 5b of 6
GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

Parameter	Method	Unit	RDL	16	16 D	18	21	23	27	30	30 D	Method Blank - 1	Method Blank - 2
				Sample ID									
				TP-OEL-19	TP-OEL-19 (Dup)	TP-OEL-JA51	TP-OEL-JA54	TP-OEL-JA56	TP-OEL-JA61	TP-OEL-JA64	TP-OEL-JA64 (Dup)		
Weight of dry sample used	Weighing Scale	g	0.01	250	250	250	250	250	250	250	250	N/A	N/A
Volume of DI water used	Graduated Cylinder	mL	0.50	750	750	750	750	750	750	750	750	750	750
On filtered samples using 0.45 micron filter paper													
pH	pH Meter	pH units	0.01	8.0	7.9	8.1	8.5	8.0	8.7	7.8	7.8	5.47	5.49
EC	EC Meter	µS/cm	1	79	73	44	45	55	58	60	59	1.34	1.00
Acidity (to pH 8.3)	Titration/Calc.	mg CaCO3/L	0.5	4.0	1.9	1.5	<0.5	2.0	<0.5	2.0	2.5	7.0	6.5
Alkalinity (to pH 4.5)	Titration/Calc.	mg CaCO3/L	0.5	28.0	27.0	22.0	22.8	25.5	25.5	29.0	29.0	1.0	1.5
Dissolved Sulphate (SO4)	Turbidimetry	mg/L	1.0	7.8	8.1	<1.0	<1.0	<1.0	2.8	<1.0	<1.0		
Fluoride (F)	Selective Ion Electrode	mg/L	0.010	0.072		0.066	0.046	0.180	0.200	0.063			
Dissolved Organic Carbon		mg/L	0.5			3.6	2.3	4.1	2.7	4.1			
Dissolved Metals Analysis by ICP-MS:													
Hardness, Total (as CaCO3	ICP-MS	mg/L	0.1	29		22	20	25	24	27		<0.1	0.1
Aluminum, dissolved	ICP-MS	mg/L	0.001	0.145		0.121	0.157	0.115	0.115	0.301		<0.001	0.00200
Antimony, dissolved	ICP-MS	mg/L	0.00005	0.00008		0.00018	0.00012	0.00053	0.00045	0.00025		<0.00005	<0.00005
Arsenic, dissolved	ICP-MS	mg/L	0.00005	0.00058		0.00067	0.0013	0.00072	0.00104	0.00096		<0.00005	<0.00005
Barium, dissolved	ICP-MS	mg/L	0.0001	0.0598		0.0436	0.0412	0.0268	0.08	0.0462		0.0008	0.0002
Beryllium, dissolved	ICP-MS	mg/L	0.00001	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010
Bismuth, dissolved	ICP-MS	mg/L	0.00001	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010
Boron, dissolved	ICP-MS	mg/L	0.001	0.006		0.001	0.001	0.002	0.003	0.002		<0.001	<0.001
Cadmium, dissolved	ICP-MS	mg/L	0.000002	0.000005		0.000007	0.000002	0.000009	0.000006	0.000009		0.000005	<0.000002
Calcium, dissolved	ICP-MS	mg/L	0.04	11.00		7.66	7.23	7.95	7.72	10.10		<0.04	0.05
Chromium, dissolved	ICP-MS	mg/L	0.0001	<0.00010		0.00016	0.00023	0.00047	0.00016	0.00018		<0.00010	<0.00010
Cobalt, dissolved	ICP-MS	mg/L	0.000005	0.000028		0.000027	0.000035	0.000065	0.000044	0.000066		<0.000005	<0.000005
Copper, dissolved	ICP-MS	mg/L	0.0001	0.0017		0.0014	0.0010	0.0011	0.0007	0.0022		0.00013	0.00027
Iron, dissolved	ICP-MS	mg/L	0.002	0.014		0.015	0.081	0.092	0.04	0.081		<0.002	<0.002
Lead, dissolved	ICP-MS	mg/L	0.00005	0.00008		<0.00005	0.00013	0.00027	0.00009	0.00023		0.0001	<0.00005
Lithium, dissolved	ICP-MS	mg/L	0.00005	0.00063		0.00008	0.0002	0.00117	0.00137	0.00019		<0.00005	<0.00005
Magnesium, dissolved	ICP-MS	mg/L	0.005	0.343		0.821	0.551	1.16	1.21	0.377		<0.005	<0.005
Manganese, dissolved	ICP-MS	mg/L	0.00005	0.00556		0.00077	0.0015	0.00161	0.00124	0.00371		0.00012	0.00007
Mercury, dissolved	ICP-MS	mg/L	0.00001	<0.00001		<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		<0.00001	<0.00001
Molybdenum, dissolved	ICP-MS	mg/L	0.00001	0.0032		0.00149	0.00197	0.00704	0.00826	0.00091		<0.00001	<0.00001
Nickel, dissolved	ICP-MS	mg/L	0.00002	0.00017		0.00034	0.00022	0.00088	0.00028	0.00026		<0.00002	<0.00002
Phosphorus, dissolved	ICP-MS	mg/L	0.01	<0.010		0.018	0.01	0.011	0.015	0.018		<0.010	0.044
Potassium, dissolved	ICP-MS	mg/L	0.01	1.880		0.466	0.296	0.832	1.280	0.675		<0.010	<0.010
Selenium, dissolved	ICP-MS	mg/L	0.0001	0.00046		0.00028	0.00011	0.00205	0.002	0.00012		<0.00010	<0.00010
Silicon, dissolved	ICP-MS	mg/L	0.05	0.97		0.64	0.86	1.60	1.40	0.90		<0.05	0.17
Silver, dissolved	ICP-MS	mg/L	0.00001	<0.000010		0.00004	0.000025	0.000011	0.00001	0.000018		<0.000010	<0.000010
Sodium, dissolved	ICP-MS	mg/L	0.01	0.988		0.170	0.210	0.258	0.295	0.549		<0.010	0.02
Strontium, dissolved	ICP-MS	mg/L	0.0001	0.0462		0.0303	0.0148	0.0255	0.0467	0.0229		<0.00010	<0.00010
Sulphur, dissolved	ICP-MS	mg/L	0.5	2.500		<0.5	<0.5	<0.5	0.700	<0.5		<0.5	<0.5
Tellurium, dissolved	ICP-MS	mg/L	0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	0.00016
Thallium, dissolved	ICP-MS	mg/L	0.000004	<0.000004		<0.000004	<0.000004	0.000006	0.000007	0.000007		<0.000004	<0.000004
Thorium, dissolved	ICP-MS	mg/L	0.00001	<0.000010		<0.000010	0.000018	0.000044	0.000017	0.000029		<0.000010	<0.000010
Tin, dissolved	ICP-MS	mg/L	0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005
Titanium, dissolved	ICP-MS	mg/L	0.0002	<0.0002		0.0005	0.0015	0.0026	0.0012	0.0024		<0.0002	<0.0002
Uranium, dissolved	ICP-MS	mg/L	0.000001	0.000383		0.000459	0.000086	0.000827	0.000605	0.000167		<0.000001	<0.000001
Vanadium, dissolved	ICP-MS	mg/L	0.0002	<0.0002		0.0002	0.0004	0.0005	0.0005	0.0006		<0.0002	<0.0002
Zinc, dissolved	ICP-MS	mg/L	0.001	<0.0010		0.0419	0.0013	0.0013	0.0017	<0.0010		0.0011	<0.0010
Zirconium, dissolved	ICP-MS	mg/L	0.00002	<0.00002		0.00003	0.0001	0.00029	0.00010	0.00030		<0.00002	<0.00002
Ion Balance													
Major Anions	Calc.	meq/L		0.73	0.71	0.44	0.46	0.52	0.58	0.58	0.58		
Major Cations	Calc.	meq/L		0.69	0.69	0.49	0.44	0.54	0.55	0.61	0.61		
Difference	Calc.	meq/L		0.04	0.02	-0.04	0.01	-0.02	0.03	-0.03	-0.03		
Balance (%)	Calc.	%		2.7%	1.4%	-4.6%	1.4%	-2.2%	2.8%	-2.6%	-2.9%		
Anions:		*Shake Flask Extract ID:*		*PT6328*	*N/A*	*PU1768*	*PU1769*	*PU1770*	*PU1771*	*PU1772*			
		Job No:		*B690750*	*N/A*	*B691590*	*B691590*	*B691590*	*B691590*	*B691590*			
Cations:		*Shake Flask Extract ID:*		*6101031-0*	*N/A*	*6101161-04*	*6101161-05*	*6101161-06*	*6101161-07*	*6101161-08*		*6101031-0*	*6101161-0*
		Job No:		*6101031*	*N/A*	*6101161*	*6101161*	*6101161*	*6101161*	*6101161*		*6101031*	*6101161*

Global ARD Testing Services Inc.

GLOBAL PROJECT NO: 1522
CLIENT: BMC MINERALS (No.1) LTD.
CLIENT PROJECT NAME / NO: Kudz Ze Kayah / BMC-15-03
REPORT VERSION: 1

Sulphate & Fluoride:

QA/QC Batch	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
COC-1: # 8 to 14 & 16							
8438533	Spiked Blank	Fluoride (F)	10/18/2016		100	%	80 - 120
8438533	Method Blank	Fluoride (F)	10/18/2016	RDL=0.010		mg/L	
8439441	Matrix Spike	Dissolved Sulphate (SO4)	10/19/2016		NC	%	80 - 120
8439441	Spiked Blank	Dissolved Sulphate (SO4)	10/19/2016		102	%	80 - 120
8439441	Method Blank	Dissolved Sulphate (SO4)	10/19/2016	<1.0		mg/L	
8439441	RPD	Dissolved Sulphate (SO4)	10/19/2016	0.49		%	20
8440207	Matrix Spike	Dissolved Sulphate (SO4)	10/20/2016		NC	%	80 - 120
8440207	Spiked Blank	Dissolved Sulphate (SO4)	10/20/2016		105	%	80 - 120
8440207	Method Blank	Dissolved Sulphate (SO4)	10/20/2016	<1.0		mg/L	
8440207	RPD	Dissolved Sulphate (SO4)	10/20/2016	3.1		%	20

Job No: B690750.

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

COC-2: # 1, 4, 6, 18, 21, 23, 27 & 30							
8438662	Matrix Spike	Dissolved Sulphate (SO4)	10/21/2016		NC	%	80 - 120
8438662	Spiked Blank	Dissolved Sulphate (SO4)	10/21/2016		102	%	80 - 120
8438662	Method Blank	Dissolved Sulphate (SO4)	10/21/2016	<1.0		mg/L	
8438662	RPD	Dissolved Sulphate (SO4)	10/21/2016	0.17		%	20
8441000	Matrix Spike [PU1771-01]	Fluoride (F)	10/20/2016		94	%	80 - 120
8441000	Spiked Blank	Fluoride (F)	10/20/2016		96	%	80 - 120
8441000	Method Blank	Fluoride (F)	10/20/2016	RDL=0.010		mg/L	
8441000	RPD	Fluoride (F)	10/20/2016	NC		%	20

Job Number: B691590

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL

Dissolved Metals by ICP-MS & Dissolved Organic Carbon:

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
COC-1: # 8 to 14, 16 & Method Blank-1												
6101031_B6J1304-DUP1 = 6101031-01 = TP-OEL-10												
6101031_B6J1304-DUP1	Aluminum dissolved		0.233	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.001	mg/L		
6101031_B6J1304-DUP1	Antimony dissolved		0.0002	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101031_B6J1304-DUP1	Arsenic dissolved		0.00375	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101031_B6J1304-DUP1	Barium dissolved		0.0109	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L		
6101031_B6J1304-DUP1	Beryllium dissolved	<	<0.00001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101031_B6J1304-DUP1	Bismuth dissolved		0.0000007	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101031_B6J1304-DUP1	Boron dissolved		0.003	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.001	mg/L		
6101031_B6J1304-DUP1	Cadmium dissolved		0.000007	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000002	mg/L		
6101031_B6J1304-DUP1	Calcium dissolved		7.96	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.04	mg/L		
6101031_B6J1304-DUP1	Chromium dissolved		0.00003	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L		
6101031_B6J1304-DUP1	Cobalt dissolved		0.000022	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000005	mg/L		
6101031_B6J1304-DUP1	Copper dissolved		0.00101	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L		
6101031_B6J1304-DUP1	Iron dissolved		0.006	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.002	mg/L		
6101031_B6J1304-DUP1	Lead dissolved		0.00062	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101031_B6J1304-DUP1	Lithium dissolved		0.00011	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101031_B6J1304-DUP1	Magnesium dissolved		0.395	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.005	mg/L		
6101031_B6J1304-DUP1	Manganese dissolved		0.00099	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101031_B6J1304-DUP1	Mercury dissolved		0.000003	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101031_B6J1304-DUP1	Molybdenum dissolved		0.00319	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101031_B6J1304-DUP1	Nickel dissolved		0.00018	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00002	mg/L		
6101031_B6J1304-DUP1	Phosphorus dissolved	<	<0.01	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.01	mg/L		
6101031_B6J1304-DUP1	Potassium dissolved		0.168	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.01	mg/L		
6101031_B6J1304-DUP1	Selenium dissolved		0.00038	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L		
6101031_B6J1304-DUP1	Silicon dissolved		0.69	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.05	mg/L		
6101031_B6J1304-DUP1	Silver dissolved		0.000008	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101031_B6J1304-DUP1	Sodium dissolved		0.186	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.01	mg/L		
6101031_B6J1304-DUP1	Strontium dissolved		0.0342	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L		
6101031_B6J1304-DUP1	Sulfur dissolved	<	<0.5	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.5	mg/L		
6101031_B6J1304-DUP1	Tellurium dissolved		0.00001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101031_B6J1304-DUP1	Thallium dissolved		0.000026	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000004	mg/L		
6101031_B6J1304-DUP1	Thorium dissolved		0.000003	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101031_B6J1304-DUP1	Tin dissolved		0.000005	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101031_B6J1304-DUP1	Titanium dissolved		0.0001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0002	mg/L		
6101031_B6J1304-DUP1	Uranium dissolved		0.00007	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000001	mg/L		
6101031_B6J1304-DUP1	Vanadium dissolved		0.0004	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0002	mg/L		
6101031_B6J1304-DUP1	Zinc dissolved		0.0008	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.001	mg/L		
6101031_B6J1304-DUP1	Zirconium dissolved		0.000004	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00002	mg/L		

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6101031_B6J1304-MS1	Antimony dissolved		0.0462	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L	114	81
6101031_B6J1304-MS1	Arsenic dissolved		0.0226	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L	115	89
6101031_B6J1304-MS1	Barium dissolved		0.136	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L	115	86
6101031_B6J1304-MS1	Beryllium dissolved		0.01	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L	124	77
6101031_B6J1304-MS1	Cadmium dissolved		0.0104	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000002	mg/L	126	82
6101031_B6J1304-MS1	Chromium dissolved		0.0404	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L	117	85
6101031_B6J1304-MS1	Cobalt dissolved		0.0405	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000005	mg/L	131	76
6101031_B6J1304-MS1	Copper dissolved		0.0442	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L	113	88
6101031_B6J1304-MS1	Iron dissolved		0.215	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.002	mg/L	115	80
6101031_B6J1304-MS1	Lead dissolved		0.0215	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L	121	84
6101031_B6J1304-MS1	Manganese dissolved		0.0434	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L	135	75
6101031_B6J1304-MS1	Nickel dissolved		0.0416	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00002	mg/L	121	83
6101031_B6J1304-MS1	Selenium dissolved		0.011	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L	122	91
6101031_B6J1304-MS1	Silver dissolved		0.0117	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L	120	74
6101031_B6J1304-MS1	Thallium dissolved		0.0107	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000004	mg/L	119	79
6101031_B6J1304-MS1	Vanadium dissolved		0.0393	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0002	mg/L	115	80
6101031_B6J1304-MS1	Zinc dissolved		0.105	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.001	mg/L	123	89
6101031_B6J1304-SRM1	Aluminum dissolved		93	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	142	58
6101031_B6J1304-SRM1	Antimony dissolved		108	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	125	75
6101031_B6J1304-SRM1	Arsenic dissolved		97	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	119	81
6101031_B6J1304-SRM1	Barium dissolved		98	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	117	83
6101031_B6J1304-SRM1	Beryllium dissolved		105	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	120	80
6101031_B6J1304-SRM1	Boron dissolved		94	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	117	74
6101031_B6J1304-SRM1	Cadmium dissolved		97	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	117	83
6101031_B6J1304-SRM1	Calcium dissolved		106	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	124	76
6101031_B6J1304-SRM1	Chromium dissolved		93	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	119	81
6101031_B6J1304-SRM1	Cobalt dissolved		94	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	124	76
6101031_B6J1304-SRM1	Copper dissolved		97	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	116	84
6101031_B6J1304-SRM1	Iron dissolved		95	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	126	74
6101031_B6J1304-SRM1	Lead dissolved		108	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	128	72
6101031_B6J1304-SRM1	Lithium dissolved		104	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	140	60
6101031_B6J1304-SRM1	Magnesium dissolved		93	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	119	81
6101031_B6J1304-SRM1	Manganese dissolved		92	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	116	84
6101031_B6J1304-SRM1	Molybdenum dissolved		101	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	117	83
6101031_B6J1304-SRM1	Nickel dissolved		95	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	126	74
6101031_B6J1304-SRM1	Phosphorus dissolved		93	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	132	68
6101031_B6J1304-SRM1	Potassium dissolved		92	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	126	74
6101031_B6J1304-SRM1	Selenium dissolved		111	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	130	70
6101031_B6J1304-SRM1	Sodium dissolved		95	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	128	72
6101031_B6J1304-SRM1	Strontium dissolved		94	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	113	84
6101031_B6J1304-SRM1	Thallium dissolved		106	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	143	57
6101031_B6J1304-SRM1	Uranium dissolved		108	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	115	85
6101031_B6J1304-SRM1	Vanadium dissolved		91	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	113	87
6101031_B6J1304-SRM1	Zinc dissolved		97	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	128	72

Job No: 6101031

COC-2: # 1, 4, 6, 18, 21, 23, 27, 30 & Method Blank-2

6101161_B6J1192-BLK1	Aluminum dissolved	<	0.001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.001	mg/L		
6101161_B6J1192-BLK1	Antimony dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00005	mg/L		
6101161_B6J1192-BLK1	Arsenic dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00005	mg/L		
6101161_B6J1192-BLK1	Barium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.0001	mg/L		
6101161_B6J1192-BLK1	Beryllium dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00001	mg/L		
6101161_B6J1192-BLK1	Bismuth dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00001	mg/L		
6101161_B6J1192-BLK1	Boron dissolved	<	0.001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.001	mg/L		
6101161_B6J1192-BLK1	Cadmium dissolved	<	0.000002	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.000002	mg/L		
6101161_B6J1192-BLK1	Calcium dissolved	<	0.04	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.04	mg/L		
6101161_B6J1192-BLK1	Chromium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.0001	mg/L		
6101161_B6J1192-BLK1	Cobalt dissolved	<	0.000005	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.000005	mg/L		
6101161_B6J1192-BLK1	Copper dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.0001	mg/L		
6101161_B6J1192-BLK1	Iron dissolved	<	0.002	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.002	mg/L		
6101161_B6J1192-BLK1	Lead dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00005	mg/L		
6101161_B6J1192-BLK1	Lithium dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00005	mg/L		
6101161_B6J1192-BLK1	Magnesium dissolved	<	0.005	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.005	mg/L		
6101161_B6J1192-BLK1	Manganese dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00005	mg/L		
6101161_B6J1192-BLK1	Mercury dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00001	mg/L		
6101161_B6J1192-BLK1	Molybdenum dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00001	mg/L		
6101161_B6J1192-BLK1	Nickel dissolved	<	0.00002	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00002	mg/L		
6101161_B6J1192-BLK1	Phosphorus dissolved	<	0.01	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.01	mg/L		
6101161_B6J1192-BLK1	Potassium dissolved	<	0.01	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.01	mg/L		
6101161_B6J1192-BLK1	Selenium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.0001	mg/L		
6101161_B6J1192-BLK1	Silicon dissolved	<	0.05	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.05	mg/L		
6101161_B6J1192-BLK1	Silver dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00001	mg/L		
6101161_B6J1192-BLK1	Sodium dissolved	<	0.01	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.01	mg/L		
6101161_B6J1192-BLK1	Strontium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.0001	mg/L		
6101161_B6J1192-BLK1	Sulfur dissolved	<	0.5	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.5	mg/L		
6101161_B6J1192-BLK1	Tellurium dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00005	mg/L		
6101161_B6J1192-BLK1	Thallium dissolved	<	0.000004	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.000004	mg/L		
6101161_B6J1192-BLK1	Thorium dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00001	mg/L		
6101161_B6J1192-BLK1	Tin dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00005	mg/L		
6101161_B6J1192-BLK1	Titanium dissolved	<	0.0002	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.0002	mg/L		
6101161_B6J1192-BLK1	Uranium dissolved	<	0.000001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.000001	mg/L		
6101161_B6J1192-BLK1	Vanadium dissolved	<	0.0002	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.0002	mg/L		
6101161_B6J1192-BLK1	Zinc dissolved	<	0.001	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.001	mg/L		
6101161_B6J1192-BLK1	Zirconium dissolved	<	0.00002	mg/L	F	Metals	APHA 3125 B	21-Oct-16	0.00002	mg/L		

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6101161_B6J1192-SRM1	Aluminum dissolved		100	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	142	58
6101161_B6J1192-SRM1	Antimony dissolved		112	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	125	75
6101161_B6J1192-SRM1	Arsenic dissolved		105	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	119	81
6101161_B6J1192-SRM1	Barium dissolved		103	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	117	83
6101161_B6J1192-SRM1	Beryllium dissolved		102	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	120	80
6101161_B6J1192-SRM1	Boron dissolved		107	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	117	74
6101161_B6J1192-SRM1	Cadmium dissolved		98	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	117	83
6101161_B6J1192-SRM1	Calcium dissolved		105	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	124	76
6101161_B6J1192-SRM1	Chromium dissolved		102	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	119	81
6101161_B6J1192-SRM1	Cobalt dissolved		105	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	124	76
6101161_B6J1192-SRM1	Copper dissolved		105	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	116	84
6101161_B6J1192-SRM1	Iron dissolved		106	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	126	74
6101161_B6J1192-SRM1	Lead dissolved		103	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	128	72
6101161_B6J1192-SRM1	Lithium dissolved		105	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	140	60
6101161_B6J1192-SRM1	Magnesium dissolved		105	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	119	81
6101161_B6J1192-SRM1	Manganese dissolved		103	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	116	84
6101161_B6J1192-SRM1	Molybdenum dissolved		107	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	117	83
6101161_B6J1192-SRM1	Nickel dissolved		105	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	126	74
6101161_B6J1192-SRM1	Phosphorus dissolved		103	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	132	68
6101161_B6J1192-SRM1	Potassium dissolved		103	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	126	74
6101161_B6J1192-SRM1	Selenium dissolved		110	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	130	70
6101161_B6J1192-SRM1	Sodium dissolved		104	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	128	72
6101161_B6J1192-SRM1	Strontium dissolved		100	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	113	84
6101161_B6J1192-SRM1	Thallium dissolved		103	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	143	57
6101161_B6J1192-SRM1	Uranium dissolved		101	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	115	85
6101161_B6J1192-SRM1	Vanadium dissolved		100	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	113	87
6101161_B6J1192-SRM1	Zinc dissolved		100	%	F	Metals	APHA 3125 B	21-Oct-16	1	%	128	72
6101161_B6J1200-BLK1	Carbon Dissolved Organic	<	0.5	mg/L	F	General F	APHA 5310 B	24-Oct-16	0.5	mg/L		
6101161_B6J1200-BLK2	Carbon Dissolved Organic	<	0.5	mg/L	F	General F	APHA 5310 B	24-Oct-16	0.5	mg/L		
6101161_B6J1200-BLK3	Carbon Dissolved Organic	<	0.5	mg/L	F	General F	APHA 5310 B	24-Oct-16	0.5	mg/L		
6101161_B6J1200-BLK4	Carbon Dissolved Organic	<	0.5	mg/L	F	General F	APHA 5310 B	24-Oct-16	0.5	mg/L		
6101161_B6J1200-BS1	Carbon Dissolved Organic		96	%	F	General F	APHA 5310 B	24-Oct-16	1	%	120	80
6101161_B6J1200-BS2	Carbon Dissolved Organic		91	%	F	General F	APHA 5310 B	24-Oct-16	1	%	120	80
6101161_B6J1200-BS3	Carbon Dissolved Organic		92	%	F	General F	APHA 5310 B	24-Oct-16	1	%	120	80
6101161_B6J1200-BS4	Carbon Dissolved Organic		99	%	F	General F	APHA 5310 B	24-Oct-16	1	%	120	80
6101161_B6J1304-BLK1	Aluminum dissolved	<	0.001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.001	mg/L		
6101161_B6J1304-BLK1	Antimony dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101161_B6J1304-BLK1	Arsenic dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101161_B6J1304-BLK1	Barium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L		
6101161_B6J1304-BLK1	Beryllium dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101161_B6J1304-BLK1	Bismuth dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101161_B6J1304-BLK1	Boron dissolved	<	0.001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.001	mg/L		
6101161_B6J1304-BLK1	Cadmium dissolved	<	0.000002	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000002	mg/L		
6101161_B6J1304-BLK1	Calcium dissolved	<	0.04	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.04	mg/L		
6101161_B6J1304-BLK1	Chromium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L		
6101161_B6J1304-BLK1	Cobalt dissolved	<	0.000005	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000005	mg/L		
6101161_B6J1304-BLK1	Copper dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L		
6101161_B6J1304-BLK1	Iron dissolved	<	0.002	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.002	mg/L		
6101161_B6J1304-BLK1	Lead dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101161_B6J1304-BLK1	Lithium dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101161_B6J1304-BLK1	Magnesium dissolved	<	0.005	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.005	mg/L		
6101161_B6J1304-BLK1	Manganese dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101161_B6J1304-BLK1	Mercury dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101161_B6J1304-BLK1	Molybdenum dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101161_B6J1304-BLK1	Nickel dissolved	<	0.00002	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00002	mg/L		
6101161_B6J1304-BLK1	Phosphorus dissolved	<	0.01	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.01	mg/L		
6101161_B6J1304-BLK1	Potassium dissolved	<	0.01	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.01	mg/L		
6101161_B6J1304-BLK1	Selenium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L		
6101161_B6J1304-BLK1	Silicon dissolved	<	0.05	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.05	mg/L		
6101161_B6J1304-BLK1	Silver dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101161_B6J1304-BLK1	Sodium dissolved	<	0.01	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.01	mg/L		
6101161_B6J1304-BLK1	Strontium dissolved	<	0.0001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0001	mg/L		
6101161_B6J1304-BLK1	Sulfur dissolved	<	0.5	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.5	mg/L		
6101161_B6J1304-BLK1	Tellurium dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101161_B6J1304-BLK1	Thallium dissolved	<	0.000004	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000004	mg/L		
6101161_B6J1304-BLK1	Thorium dissolved	<	0.00001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00001	mg/L		
6101161_B6J1304-BLK1	Tin dissolved	<	0.00005	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00005	mg/L		
6101161_B6J1304-BLK1	Titanium dissolved	<	0.0002	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0002	mg/L		
6101161_B6J1304-BLK1	Uranium dissolved	<	0.000001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.000001	mg/L		
6101161_B6J1304-BLK1	Vanadium dissolved	<	0.0002	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.0002	mg/L		
6101161_B6J1304-BLK1	Zinc dissolved	<	0.001	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.001	mg/L		
6101161_B6J1304-BLK1	Zirconium dissolved	<	0.00002	mg/L	F	Metals	APHA 3125 B	22-Oct-16	0.00002	mg/L		

Sample Code	Parameter	Prefix	Result	Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
6101161_B6J1304-SRM1	Aluminum dissolved		93	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	142	58
6101161_B6J1304-SRM1	Antimony dissolved		108	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	125	75
6101161_B6J1304-SRM1	Arsenic dissolved		97	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	119	81
6101161_B6J1304-SRM1	Barium dissolved		98	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	117	83
6101161_B6J1304-SRM1	Beryllium dissolved		105	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	120	80
6101161_B6J1304-SRM1	Boron dissolved		94	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	117	74
6101161_B6J1304-SRM1	Cadmium dissolved		97	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	117	83
6101161_B6J1304-SRM1	Calcium dissolved		106	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	124	76
6101161_B6J1304-SRM1	Chromium dissolved		93	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	119	81
6101161_B6J1304-SRM1	Cobalt dissolved		94	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	124	76
6101161_B6J1304-SRM1	Copper dissolved		97	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	116	84
6101161_B6J1304-SRM1	Iron dissolved		95	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	126	74
6101161_B6J1304-SRM1	Lead dissolved		108	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	128	72
6101161_B6J1304-SRM1	Lithium dissolved		104	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	140	60
6101161_B6J1304-SRM1	Magnesium dissolved		93	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	119	81
6101161_B6J1304-SRM1	Manganese dissolved		92	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	116	84
6101161_B6J1304-SRM1	Molybdenum dissolved		101	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	117	83
6101161_B6J1304-SRM1	Nickel dissolved		95	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	126	74
6101161_B6J1304-SRM1	Phosphorus dissolved		93	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	132	68
6101161_B6J1304-SRM1	Potassium dissolved		92	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	126	74
6101161_B6J1304-SRM1	Selenium dissolved		111	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	130	70
6101161_B6J1304-SRM1	Sodium dissolved		95	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	128	72
6101161_B6J1304-SRM1	Strontium dissolved		94	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	113	84
6101161_B6J1304-SRM1	Thallium dissolved		106	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	143	57
6101161_B6J1304-SRM1	Uranium dissolved		108	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	115	85
6101161_B6J1304-SRM1	Vanadium dissolved		91	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	113	87
6101161_B6J1304-SRM1	Zinc dissolved		97	%	F	Metals	APHA 3125 B	22-Oct-16	1	%	128	72
Job No: 6101161												

BLK = Method Blank
EQL = Estimated Quantitation Limits
PQL = Practical Quantitation Limits
UCL = Upper Control Limit
LCL = Lower Control Limit
SRM = Standard Reference Materials