



**FIRST MINING
GOLD**



APPENDIX K

GEOCHEMISTRY TECHNICAL SUPPORT DOCUMENTS

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K-1.2 Tailings ML/ARD Assessment – Static Testing Results

K-1.3 Kinetic Geochemistry Report 2023

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K-1.6 Preliminary Geochemical Assessment of CDF Quarry

K-2 Mine Site Water Quality Modelling



Static Geochemical Testing Baseline Report

Springpole Gold Project
First Mining Gold Corp.

ONS2104

Prepared by:
Wood Environment & Infrastructure Americas
a Division of Wood Canada Limited

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Static Geochemical Testing Baseline Report Springpole Gold Project

Red Lake District, Northwest Ontario
Project #ONS2104

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EXECUTIVE SUMMARY

First Mining Gold Corp. (FMG) proposes to develop an open pit mine and with supporting facilities known as the Springpole Gold Project (SGP, or the Project). The Project is located in a remote area of northwestern Ontario, approximately 110 kilometres (km) northeast of the Municipality of Red Lake and 145 km north of the Municipality of Sioux Lookout (Figure 1-1).

Baseline static geochemical testing is required to support mine planning, mine rock management decisions and permitting for the Project. This report documents the study approach, methods, and results of the static geochemical testing of rock at the Project.

The baseline static geochemical characterization program included samples collected by Wood along with baseline static geochemical data collected by others as part of previous programs for the Project (e.g., MDAG 2012 and KCC 2020). The geochemical dataset presented in this report includes a total of 876 samples and covers the range of identified lithologies and geologic zones at the Project and included mine rock (716 samples) and ore-grade materials (160 samples). Samples were tested at the laboratory for acid base accounting (ABA) parameters, elemental content, and metal leaching capability. Screening of the data was completed to assess the potential for neutral and acidic metal leaching in the future. For project planning purposes, ABA results with a ratio of neutralization potential to acid potential (NPR) <2 were assumed to be potentially acid generating (PAG) in accordance with industry-standard guidance.

Based on the results of this study, major rock units expected to be encountered by future mine development were sulphide-bearing (often >1% sulphur), with ore-bearing material generally having a higher sulphide content (>3% sulphur). Samples from the Portage Zone generally had higher sulphur contents (median 1.5% sulphur) than samples from the East Extension Zone (median 0.7% sulphur) and Camp Zone (median 0.5% sulphur). No strong patterns were apparent in sulphur content among different rock types. Pyrite was the most commonly observed sulphide mineral.

The neutralization potential (NP) content of the samples was variable, ranging from -1 to approximately 500 kg CaCO₃/t, and the samples formed two distinct groups based on their neutralization potential content. One group of samples had a low neutralization potential (averaging 10 kg CaCO₃/t, ranging from -1 to 20 kg CaCO₃/t) and the other group of samples had a higher neutralization potential content (approximately 200 kg CaCO₃/t, ranging from approximately 50 kg CaCO₃/t to 500 kg CaCO₃/t). The low neutralization potential group of samples were exclusively from the Portage Zone, whereas the higher neutralization potential group of samples included samples from the Portage Zone, the East Extension Zone, and the Camp Zone.

Carbonate neutralization potential (CarbNP) was typically similar to or slightly lower than the neutralization potential content for samples with a higher NP content (e.g., NP >50 kg CaCO₃/t) indicating that neutralization potential was present as carbonate minerals in these samples; and calcite and dolomite were identified in mineralogical testing.

The samples with a lower NP content (e.g., NP <20 kg CaCO₃/t) generally had low levels of carbonate neutralization potential (<10 kg CaCO₃/t), suggesting that non-carbonate minerals comprised a higher proportion of the NP in these samples. Based on currently available information, some samples with low levels of carbonate NP may contain reactive non-carbonate NP (e.g., feldspars). A subset of samples with a low NP content had notably elevated levels of carbonate NP, suggesting that these samples may contain non-net neutralizing carbonate minerals (e.g., siderite).

Overall, geospatial factors governing the NP content of the rock from the various zones is not currently well understood. At present it is hypothesized that the low NP rock from the Portage Zone is associated with the porphyry style mineralization and related advanced argillic and potassic alteration unique to this Zone,



with the higher NP rock from the Portage, East Extension and Camp Zones associated with the lode gold / epithermal gold vein style mineralization in these zones.

The Acid Base Accounting (ABA) results were screened to assess the potential for acidic drainage in the future. On the order of 46% of the mine rock samples and 85% of the ore-grade samples from the Portage Zone, which represents the most volumetrically significant zone of the open pit, were classified as PAG. In the East Extension and Camp Zones, approximately 85% of the mine rock and approximately 70% of the ore-grade material was classified as non-acid generating (NPAG), owing to the generally higher neutralization potential and relatively lower sulphur content of rock from these zones.

The elemental content of the mine rock samples was qualitatively evaluated against average elemental crustal compositions (Price 1997). For screening purposes, samples with more than 10 times the average crustal abundance for a given element were considered to be enriched in that element. This approach provides an indication of the minor and trace element characteristics of the rock but does not provide a direct assessment of metal leaching potential.

Elemental content analysis indicated that 70% of the mine rock samples and 80% of the ore-grade samples were enriched in arsenic relative to screening values. In general arsenic concentrations were higher in samples from the East Extension Zone and Camp Zone compared to the Portage Zone. Overall, arsenic concentrations were not notably elevated in either the mine rock or ore samples, with median concentrations on the order of 30 to 40 mg/kg, and concentrations of arsenic of up to 1,200 mg/kg for the mine rock samples and 450 mg/kg in ore. Comparison of arsenic to sulphur molar ratios indicated that the arsenic content of the samples was notably lower than the sulphur content for nearly all of the samples. This suggests that arsenopyrite (FeAsS) is not a significant sulphide in the samples, and arsenic may be present in other sulphide minerals (e.g., substituted in pyrite). This is consistent with mineralogical testwork results and geological observations for the Project, whereby pyrite is identified as the only sulphide mineral present in the rock.

Concentrations of other metals including selenium, molybdenum, silver, and antimony were greater than the respective screening values for these elements in approximately 30% of mine rock samples and 40 to 80% of ore-grade samples. Some samples (approximately 10% of mine rock and 15% of ore-grade materials) showed enrichment in lead and cadmium, and there were isolated occurrences (<5% of the samples) of enrichment of boron, copper, mercury, tungsten, chromium, thallium, uranium, and zinc.

Shake flask extraction (SFE) leachate results indicated that arsenic may be a parameter of potential interest under short term neutral leaching conditions for both mine rock and ore, with approximately 40% of the samples being higher than the interim Ontario Provincial Water Quality Objectives (PWQO) value for arsenic when compared for screening purposes. Few samples (<10%) of mine rock or ore had arsenic concentrations greater than the in place PWQO value. Cobalt concentrations in SFE leachates were above the PWQO screening value in 50% of ore-grade samples, but only 10% of mine rock samples. Several other metals including antimony, copper, cadmium, and lead have concentrations greater than their respective PWQO screening values in the SFE leachates for approximately 10-30% of the samples. It is recognized that short term leaching tests such as SFE do not directly represent mine drainage quality and comparisons with screening values hold no regulatory significance.

Net acid generation leachate results for mine rock samples indicated that aluminum, cadmium, chromium, cobalt, copper, iron, lead, nickel, silver, thallium, uranium, vanadium, and zinc may be of potential interest under acidic leaching conditions.

Kinetic testing, currently underway, is expected to provide additional understanding of the future acid generation and metal leaching potential of mine rock and ore at the Springpole Gold Project.



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LIST OF ACRONYMS AND ABBREVIATIONS

ABA	acid base accounting
AND_TUFF_MSEDS	Andesite, Tuff, and Metasediments
AP	acid potential
CarbNP	Carbonate neutralization potential
FeAsS	arsenopyrite
FMG	First Mining Gold Corp.
g/t Au	grams of gold per tonne of material
IAAC	Impact Assessment Agency of Canada
ICP-MS	inductively coupled plasma-mass spectrometry
kg CaCO ₃ /t	kilograms of calcium carbonate per tonne
km	kilometres
MDAG	Minesite Drainage Assessment Group
MEM	British Columbia Ministry of Energy and Mines
MEND	Mine Environment Neutral Drainage
mg/kg	milligram per kilogram
mg/L	milligram per liter
ML/ARD	Metal leaching and acid rock drainage
Mt	million tonnes
NP	neutralization potential
NPAG	non-acid generating
NPR	neutralization potential ratio
PAG	potentially acid generating
POR	Porphyry
PWQO	Ontario Provincial Water Quality Objectives
R-XRD	Rietveld X-Ray Diffraction
SFE	Shake flask extraction
SGP	Springpole Gold Project
The Project	The Springpole Gold Project
tpd	tonnes per day
TRA	Trachyte
VBX	Volcanic Breccia
Wood	Wood Environment & Infrastructure Americas, a division of Wood Canada Limited



1.0 INTRODUCTION

First Mining Gold Corp. (FMG) proposes to develop, operate and eventually decommission / close an open pit mine and ore process plant with supporting facilities known as the Springpole Gold Project (SGP, or the Project). The Project is located in a remote area of northwestern Ontario, approximately 110 kilometres (km) northeast of the Municipality of Red Lake and 145 km north of the Municipality of Sioux Lookout (Figure 1-1).

This document is one of a series of baseline reports prepared by Wood Environment & Infrastructure Americas, a division of Wood Canada Limited (Wood) on behalf of FMG to describe the current environmental conditions and update existing information. This introduction is included in each baseline document, such that the reports can be read independent of one another. Other environmental baseline reports in the series address the following environmental aspects:

- Air Quality;
- Noise;
- Hydrogeology;
- Hydrology;
- Aquatic Resources;
- Terrestrial Resources; and
- Socioeconomic.

1.1 Background

This report has been prepared to describe the geochemistry of the rock likely to be encountered during future mine development at the Project. Specifically, this report documents the approach, methods, and results of the static geochemical testing program to assess the metal leaching and acid rock drainage (ML/ARD) potential of rock at the Project. It is recommended that this report be read in conjunction with the *Baseline Kinetic Geochemical Testing Report* for the Project, prepared by Wood (2021).

For the purposes of this assessment, rock at the Project has been classified into two groups.

- **Ore-grade materials** - Rock with potentially economic gold content. For the purposes of this assessment, ore-grade materials were assumed to contain 0.4 grams of gold per tonne (g/t Au) or greater, based on discussions with Project geologists.
- **Mine rock** - All mine rock excluding ore-grade material and including future exposed rock surfaces.

Other rock sources associated with the Project including rock from the fish habitat development area will be discussed under a separate cover.

1.2 Scope of Work

The geochemical characterization work being completed by Wood includes the following scope:

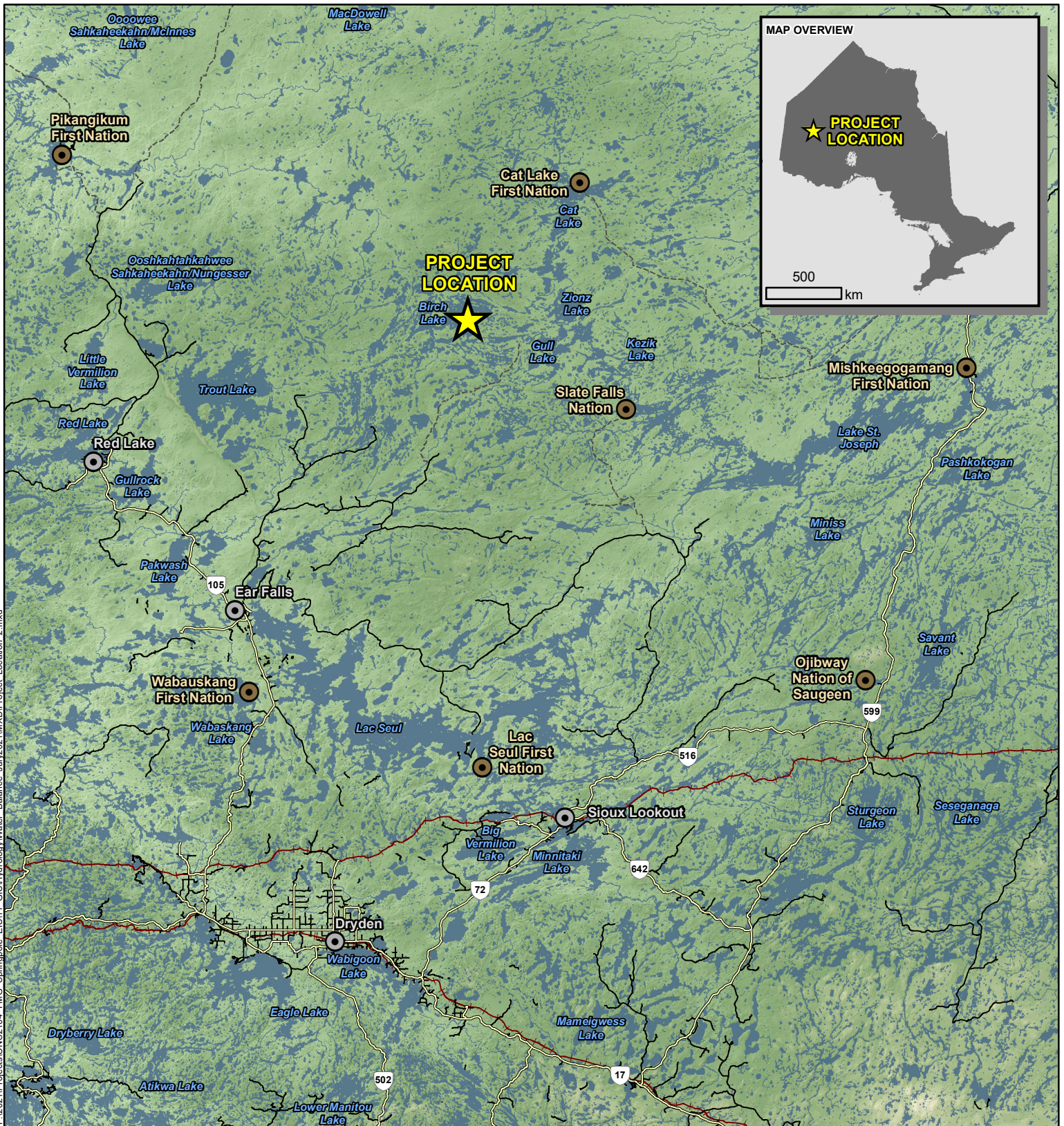
- Analysis and interpretation of data from existing geological and geochemical characterization studies.
- Execution of a metal leaching and acid rock drainage (ML/ARD) characterization program, including static and kinetic testing, to evaluate the geochemical characteristics of ore-grade material, future stockpiled mine rock and exposed mine rock surfaces for the Project.

1.3 Ongoing Geochemical Studies

Geochemical investigations for the Project are currently ongoing and this report documents the results of the static testing program undertaken by Wood up to November 2021, along with the results of static testing programs previously conducted for the Project.

A kinetic testing program is currently ongoing in support of the Project and is documented in Wood (2021).





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LEGEND

- Project Location
- Town
- First Nation Reserve
- Highway
- Secondary Road
- Resource / Winter Road
- Railway

NOTES:
 - Topographic information extracted from LIO, MNRF.



SPRINGPOLE GOLD PROJECT

Project Location

Datum: NAD83
 Projection: UTM Zone 15N

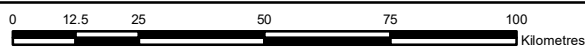


PROJECT N^o: ONS2104

FIGURE: 1-1

SCALE: 1:1,500,000

DATE: December 2021



2.0 GEOLOGY

2.1 Deposit Geology and Gold Mineralization

The geology of the Springpole deposit is described in detail in SRK (2012), FMG (2017), and AGP (2021). Key information from these reports is provided below.

The SGP property is underlain by a sequence of altered and metamorphosed mafic to intermediate volcanic rocks and associated volcanoclastics, derived siliciclastic sedimentary rocks, chemical sediments (including banded iron formation) and coarse pebble conglomerates (Timiskaming polymictic conglomerates). The sequence is complexly folded, sheared and faulted and form the host rocks into which the polyphase alkali suite of rocks that form the core of the deposit has intruded. The intrusion is a polyphase alkali trachyte intrusion with autolithic breccia, understood to be part of a larger syenite intrusive stock. Early intrusive phases consist of medium to coarse grained megacrystic albite and orthoclase feldspar phenocrysts in an aphanitic groundmass. Successive phases show progressively finer-grained porphyritic textures, while final intrusive phases are aphanitic. Feldspar porphyry diatreme dikes and dikelets transect mafic to intermediate basement lithologies throughout the property; generally fine grained with orthoclase feldspar phenocrysts and locally abundant exotic fragments.

The property hosts two types of mineralization, including porphyry style gold mineralization and lode gold mineralization. Mineralization is present in three geologic zones including the Portage Zone, the East Extension Zone, and the Camp Zone. Mineralization is understood to be a result of the emplacement of multiple phases of trachyte porphyry and associated diatreme breccias, hydrothermal breccias, dikes and sills. Gold may have also been remobilized during subsequent metamorphic events.

Porphyry-style mineralization includes disseminated gold-silver mineralization hosted by the main intrusive complex. Mineralization of this style is observed in the Portage Zone and portions of the East Extension zone, where gold mineralization is hosted by diatreme breccias and aphanitic trachytes. Blocks of mineralized rock have also been structurally redistributed via shearing and faulting. Alteration zones are difficult to define due to complex sheared geometry and poorly defined contact zones of the deposit. However, potassic and phyllic/sericitic alteration is nearly pervasive in the alkali intrusive rocks, with intense potassic alteration in some zones with complete replacement of the rock mass with pyrite and biotite. Advanced argillic alteration is understood to occur throughout the porphyry intrusive and in some late-stage lamprophyre dykes and appears to define an envelope around the potassic alteration zones. Overall pyrite is the most common sulphide mineral observed with the disseminated gold-silver mineralization.

Mesothermal lode gold to epithermal style vein gold mineralization is also present. Mesothermal style quartz-biotite-calcite-sulphide gold-bearing veins are present in the porphyry intrusive in the Portage Zone, and at the contact between the intrusive and wall rock in the East Extension Zone and localized within the Camp Zone. Farther from the intrusive complex and wall rock contact zones, epithermal style vein textures and mineralization dominate including quartz-calcite veins, sericite, +/- biotite, orthoclase/adularia, calcite, dolomite, ankerite, with gold present as electrum and gold-silver tellurides. Pyrite is the most common sulphide mineral observed with vein style gold mineralization and typically other sulphide minerals are not present.

2.2 Lithological Interpretation

Project geologic information has been subdivided into various key lithology groups. The various lithological subdivisions may be important in terms of ML/ARD assessment. Therefore, for planning purposes, sampling and interpretation has focused on mine rock subdivisions based on primary logged lithologies. In addition to the logged lithologies, the various geologic Zones of the deposit (e.g., Portage, East Extension and Camp



Zones) were considered separately, owing to their apparently unique geological characteristics which may be important for the Project ML/ARD assessment.

Lithologies and their associated rock codes are provided in Table 2-1.

Major lithologies which comprise mine rock at the Project include:

- Andesite, Tuff, and Metasediments (AND_TUFF_MSEDS);
- Trachyte (TRA);
- Volcanic Breccia (VBX); and
- Porphyry (POR).

Ore-grade materials are most often associated with the following lithologies:

- Trachyte (TRA);
- Volcanic Breccia (VBX);
- Andesite, Tuff, and Metasediments (AND_TUFF_MSEDS); and
- Porphyry (POR).

Previous ML/ARD studies for the Project included sampling of 'Other' lithologies described with historical rock codes that are no longer part of the Project lithological interpretation and/or have not been carried forward into the current lithology groups for the Project. These lithologies are understood to be low volume units relative to the lithologies presented above. 'Other' lithologies were described as carbonatite, felsic intrusives, mafic intrusives, gypsum, altered, muscovite seams, and greyish green magnetic rock. As discussed in Section 3.0, several samples of these lithologies were collected as part of historical ML/ARD sampling programs for the Project. These samples represent a small fraction of the ML/ARD dataset presented in this report and have been included in this report as lithology type 'Other' for completeness.

Table 2-1: Lithology Groups

Lithology Group	Lithology Code	Rock Types
Andesite, Tuff, and Metasediments	AND_TUFF_MSEDS	Andesite
		Metasediment
		Tuff
		Iron Formation
		Quartz Porphyry Dyke
		Conglomerate
Trachyte	TRA	Trachyte
Volcanic Breccia	VBX	Volcanic Breccia
Porphyry	POR	Porphyry
Lamprophyre	LAM	Lamprophyre Dyke



3.0 STATIC TESTING PROGRAM

The study approach and rationale for the static geochemistry testing program are described below. Detailed information on analytical methods is provided in Appendix A.

3.1 Objectives and Approach

The overall goal of the ML/ARD program is to establish the necessary data to support mine planning, mine rock management decisions, and obtaining environmental approvals for the Project. The static geochemistry assessment covered the range of lithological groups at the Project and included mine rock and ore-grade materials. The overall objectives of the program included:

- Obtaining samples that accurately represent the geochemical variation of the mine rock lithology types to be mined; and
- Capturing both the spatial and geochemical variability of mine rock and ore-grade materials in the vicinity of the proposed development.

3.2 Regulatory Context

The approach and methodology for the program and data interpretation used in this report were based on the requirements described under the Ontario *Mining Act*; namely guidance found within the documents *DRAFT Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia* (Price 1997), and *Policy for Metal Leaching and Acid Rock Drainage at Minesites in British Columbia* (MEM 1998).

Additional guidance was provided by the reference document *Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials* (MEND 2009), which represents best practice and industry standard approaches and methodologies for ML/ARD sampling and characterization in Canada.

3.3 ML/ARD Data Included in the Geochemistry Baseline

Several geochemistry studies have been conducted for the Project including the Minesite Drainage Assessment Group (MDAG 2012) and KCC Geoconsulting (KCC 2020). These studies were undertaken as part of early baseline work for the Project, based on initial mine plan concepts. Wood continues to advance these studies as part of an ongoing baseline geochemistry program for the current Project mine plan. As shown in Table 3-1, the baseline static geochemistry data presented herein includes data obtained from previous programs and recent studies conducted by Wood, including 253 samples collected by Wood in 2021, and 623 samples collected as part of previous programs (MDAG 2012; KCC 2020). Data from all programs have been synthesized into one combined dataset (n=876 samples) and are presented in this report. A summary of drill holes sampled in this combined dataset are shown in Figure 3-1.

Initial geochemical testing undertaken by MDAG (2012) included analysis of 184 rock samples collected from archived drill core. Static testing was conducted including Acid Base Accounting (ABA) and elemental content analysis. Geochemical studies undertaken by KCC (2020) included analysis of 444 rock samples collected from archived drill core and pulp rejects. The samples represented rock materials from within the open pit volume. Further details of the sample selection process for previous studies are provided in KCC (2020) and MDAG (2012). Static testing including ABA and elemental content was conducted for all samples. Several samples (n=10) were tested by additional static methods including Shake Flask Extraction (SFE) testing, net acid generating testing, and mineralogical analysis by Rietveld X-Ray Diffraction (R-XRD). Geochemical studies conducted by Wood included analysis of 253 samples for ABA and elemental content, along with 99 samples by SFE testing, 75 samples by net acid generating testing, and 15 samples by R-XRD.

This report focuses on rock samples collected during previous and current baseline programs. Updated ML/ARD test information for tailings material will be reported under separate cover when samples of the



currently planned Project tailings are available from ongoing metallurgical testwork. Although tailings were analysed in previous studies, they are not representative of the current mine plan / ore processing approach, and as a result, are not summarized in this document.

Owing to the historical nature of the previous studies, data from previous programs were integrated into Wood's baseline geochemical database from available laboratory certificates of analysis. Historical rock codes were updated to align with the current Project lithologic interpretation, based on information provided by FMG. Mine rock and ore-grade materials were reclassified as required, to align with current mine plan information. Analytical methods were reviewed to ensure consistency between the various programs, so results were directly comparable. The compilation of ML/ARD test results were reviewed and presented in aggregate as one combined dataset to support the geochemistry baseline presented in this report.

3.4 2021 Sample Selection and Collection

To build upon the baseline ML/ARD data collected as part of previous studies, Wood developed a sampling program to collect additional drill core samples from recent drill core archived at the Project site. Wood developed a target sample list based on review of geologic information including cross sections, borehole logs and geochemical data provided by FMG. The program was designed to capture spatial and geochemical variability in mine rock in the region of the proposed development and supplement the currently available static testing data for the Project from previous studies. An overview of the samples collected by Wood along with samples from previous studies is provided in Table 3-1.

A summary of the sample selection process for Wood's samples is presented below.

- Samples were selected from recent, available archived drill core. Available core was identified by FMG. Approximately 40% of the samples were from drill core obtained in the last two years. The remaining samples were from drill core obtained between 2011 and 2016 due to core availability.
- Samples were selected to cover a range of lithologies, sulphur content, and alteration types. Samples were selected from the Portage Zone, East Extension Zone, and Camp Zone based on available drill core at the time of sampling. Higher sample densities were targeted for major lithologies.
- Samples were differentiated between ore and mine rock based on a cutoff grade of 0.4 g/t Au. The selection of ore-grade samples was not exhaustive and was included for completeness to extend interpretation of the overall ML/ARD data.
- Each drill core sample typically comprised an approximate 1 to 2 metres (m) sample interval. Individual samples were generally selected at 50 m spacing from a range of drillholes for each Zone of the open pit. In some Zones, where the density of available core was low, samples were collected at a higher frequency to ensure sufficient samples were available for ML/ARD testing.

Wood personnel collected 253 samples of drill core from the Project in June 2021, which were packaged and shipped to Global ARD, Burnaby, British Columbia for analysis. A summary of the collected samples and analyses is provided in Table 3-1.

3.5 Analytical Methods

An overview of static test methods used for ML/ARD testing and the purpose of each test is discussed below. Further details on these methods are presented in Appendix A. As previously discussed, samples collected by Wood were analyzed at Global ARD, Burnaby, British Columbia.

It is noted that data generated as part of previous studies, which is also included in the geochemical dataset presented in this report, used the same methods as described below, with the exception of 182 samples analyzed for elemental content by four-acid digest (MDAG 2012). All other ML/ARD samples for the Project



have been analyzed by aqua regia digest for elemental content. The integration of different test methods into interpretation of the test results is discussed in Section 4.3.

Geochemical tests for the drill core samples included the following analyses, as summarized in Table 3-2:

- ABA tests were conducted to assess the potential for a sample to generate acidity, determined by the balance of acid generating minerals and neutralizing minerals in a sample. ABA testing included determination of:
 - Paste pH, to assess the current balance of acidity / alkalinity of the samples.
 - Sulphur content and speciation, to determine the acid potential (AP) of the samples. Total sulphur was determined by Leco analyzer, sulphate sulphur was determined by HCl-leach, and sulphide sulphur was determined by difference (Total sulphur less sulphate sulphur).
 - The neutralization potential (NP) content and form was determined by the Sobek NP method. Carbonate neutralization potential was determined by total inorganic carbon analysis (HCl-Leco method). Total carbon content by Leco analyzer was also determined.
 - Results of the NP tests and calculation of acid potential (or maximum potential acidity) from sulphur test results were used to assess the neutralization potential ratio (NPR, NP/AP) of the samples and determine their potential to generate ARD. NPR values were assessed based on the criteria provided in Table 3-3, as identified in MEND (2009); however, for initial screening purposes, the threshold for separating potentially acid generating (PAG) and non-acid generating (NPAG) rock was an NPR value of 2. This value is generally accepted as industry best practice.
- Elemental content analyses were conducted by aqua regia digestion and inductively coupled plasma-mass spectrometry (ICP-MS) scan. The purpose of this test is to assess the presence of environmentally significant elements and screen samples against qualitative threshold values. As previously described, some samples from previous programs were analyzed for elemental content by four-acid digestion. The results from the four-acid test are considered a more complete digestion and are not directly comparable to results from the aqua regia digestion. Test results focused on samples analyzed by aqua regia (n=694 samples) for the purposes of this report.
- Net acid generation testing was conducted to compliment the ABA analyses. This test involves rapid oxidation of sulphide with hydrogen peroxide to determine if the sample has enough neutralization capacity to buffer the acidity generated during sulphide oxidation.
- SFE testing was conducted to assess the potential release of soluble metals during the initial (i.e., short-term) stages of weathering but is not a direct indicator of drainage quality. Leachates were analyzed for pH, conductivity, sulphate, and dissolved metals. Results were screened against qualitative threshold values to identify leachable elements of interest.
- Net acid generation leachate testing was conducted to identify potential parameters that may be of interest for mine rock under net-acidic conditions. Leachates were analyzed for pH, conductivity, sulphate, and dissolved metals. These results provide only a total metal release under complete oxidation of the sulphide content of a sample and should not be interpreted as a direct indicator of drainage quality.
- Mineralogical testing was conducted by X-ray diffraction with R-XRD, to identify major and minor minerals, including those potentially involved in acid-generating and neutralizing reactions.



Table 3-1: Summary of Drill Core Samples

Type	Description	Previous Samples ⁽¹⁾	2021 Samples	Total Samples
Overall				
All Samples		623	253	876
Mine Rock		502	214	716
Ore-Grade Materials		121	39	160
Zone				
All Samples	Portage	419	190	609
	Camp	107	30	137
	East Extension	97	33	130
Mine Rock	Portage	325	154	479
	Camp	90	29	119
	East Extension	87	31	118
Ore-Grade Materials	Portage	94	36	130
	Camp	17	1	18
	East Extension	10	2	12
Lithology				
Mine Rock	Andesite, Tuff and Metasediments	204	108	312
	Trachyte	110	58	168
	Volcanic Breccia	82	28	110
	Porphyry	93	16	109
	Lamprophyre	6	1	7
	Other ⁽²⁾	7	3	10
Ore-Grade Materials	Andesite, Tuff and Metasediments	38	10	48
	Trachyte	38	15	53
	Volcanic Breccia	28	9	37
	Porphyry	12	5	17
	Lamprophyre	1	0	1
	Other ⁽²⁾	4	0	4

Notes:

Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

- 1 Samples from previous programs including MDAG (2012) and KCC (2020).
- 2 "Other" lithologies include altered, carbonatite, muscovite seam, felsic intrusive, and mafic intrusive samples primarily collected during previous sampling programs.



Table 3-2: Summary of Static Testing Program

Type	Description	All Samples						2021 Samples						Previous Samples					
		ABA	Elemental Content ⁽¹⁾	Net Acid Generation pH	SFE	Net Acid Generation Leachate	R-XRD	ABA	Elemental Content ⁽¹⁾	Net Acid Generation pH	SFE	Net Acid Generation Leachate	R-XRD	ABA	Elemental Content ⁽¹⁾	Net Acid Generation pH	SFE	Net Acid Generation Leachate	R-XRD
Overall																			
All Samples		876	694	85	109	25	25	253	253	75	99	15	15	623	441	10	10	10	10
Mine Rock		716	550	69	91	14	18	214	214	64	86	9	13	502	336	5	5	5	5
Ore-Grade Materials		160	144	16	18	11	7	39	39	11	13	6	2	121	105	5	5	5	5
Zone																			
All Samples	Portage	609	488	52	66	22	19	190	190	45	59	15	12	419	298	7	7	7	7
	Camp	137	104	19	22	2	4	30	30	17	20	0	2	107	74	2	2	2	2
	East Extension	130	102	14	21	1	2	33	33	13	20	0	1	97	69	1	1	1	1
Mine Rock	Portage	479	370	38	51	12	13	154	154	35	48	9	10	325	216	3	3	3	3
	Camp	119	88	17	20	1	3	29	29	16	19	0	2	90	59	1	1	1	1
	East Extension	118	92	14	20	1	2	31	31	13	19	0	1	87	61	1	1	1	1
Ore-Grade Materials	Portage	130	118	14	15	10	6	36	36	10	11	6	2	94	82	4	4	4	4
	Camp	18	16	2	2	1	1	1	1	1	1	0	0	17	15	1	1	1	1
	East Extension	12	10	0	1	0	0	2	2	0	1	0	0	10	8	0	0	0	0
Lithology																			
Mine Rock	Andesite, Tuff and Metasediments	312	237	33	44	4	8	108	108	31	42	2	6	204	129	2	2	2	2
	Trachyte	168	141	18	27	4	5	58	58	17	26	3	4	110	83	1	1	1	1
	Volcanic Breccia	110	94	13	14	4	3	28	28	12	13	3	2	82	66	1	1	1	1
	Porphyry	109	63	4	5	2	2	16	16	3	4	1	1	93	47	1	1	1	1
	Lamprophyre	7	7	0	0	0	0	1	1	0	0	0	0	6	6	0	0	0	0
	Other ⁽²⁾	10	8	1	1	0	0	3	3	1	1	0	0	7	5	0	0	0	0
Ore-Grade Materials	Andesite, Tuff and Metasediments	48	41	6	7	4	3	10	10	3	4	1	0	38	31	3	3	3	3
	Trachyte	53	50	5	6	5	3	15	15	4	5	4	2	38	35	1	1	1	1
	Volcanic Breccia	37	35	3	3	1	1	9	9	2	2	0	0	28	26	1	1	1	1
	Porphyry	17	13	2	2	1	0	5	5	2	2	1	0	12	8	0	0	0	0
	Lamprophyre	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
	Other ⁽²⁾	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0

Notes:

Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

1 Includes samples analyzed by 3:1 aqua regia digestion and ICP-MS finish (see text).

2 "Other" lithologies include altered, carbonatite, muscovite seam, felsic intrusive, and mafic intrusive samples primarily collected during previous sampling programs.



Table 3-3: Acid Rock Classification Criteria

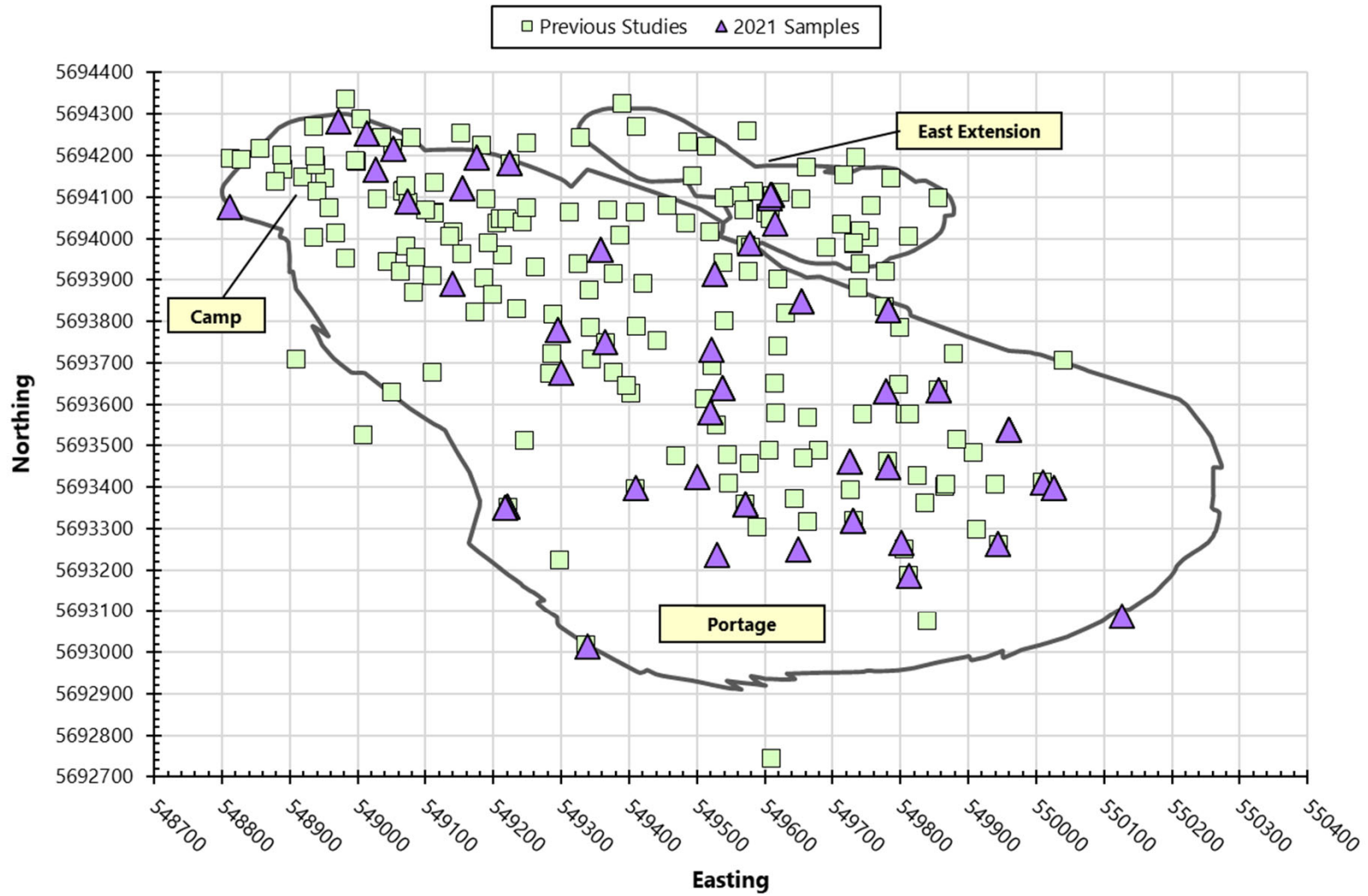
Acid Rock Drainage Classification⁽¹⁾	Screening Criteria	Implications
PAG (potentially acid generating)	NPR < 1	Materials are potentially acid generating
Uncertain	1 < NPR < 2	Materials have an uncertain acid generating potential
NPAG (non-acid generating)	NPR > 2	Materials have a low probability of becoming acid generating

Note:

1 MEND 2009.



Drill Collar Locations for ML/ARD Samples



Ultimate pit limits represented by solid grey line.

Pit outline shown based on available mine planning information at the time the baseline report was prepared.

Static Geochemical Testing Baseline Report

Springpole Gold Project
Red Lake District, Ontario

wood.

Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 3-1

4.0 RESULTS

Results are presented in Figure 4-1 to Figure 4-16 and tabulated in Appendices B and C. Laboratory certificates of analysis are provided in Appendix D.

The results presented below are based on results from both Wood samples and samples collected by others as part of previous testing programs.

4.1 Acid Base Accounting

ABA results are provided in Appendix B, Table B-1 to Table B-4, including a statistical summary of the results for each lithology and Zone. Results are discussed below for each component of the ABA testing.

4.1.1 Paste pH

Paste pH results are presented in Table 4-1 and summarized below.

- Overall, mine rock paste pH ranged from 4.0 to 10 (median 8.9) and ore-grade materials ranged from 4.3 to 9.8 (median 8.3); however, samples typically had paste pH values between 7.6 (10th percentile) and 9.5 (90th percentile).
- Although some samples had an acidic paste pH, indicating that these samples contained stored acidity, this represented a small fraction of the tested samples and included approximately 2% of the mine rock (n=12) and 6% of the ore-grade (n=9) samples. These samples were from the Portage Zone. No samples from the Camp and East Extension had an acidic paste pH.

4.1.2 Forms of Sulphur

The concentration of total sulphur and sulphide sulphur are presented in Figure 4-1 and Figure 4-2. Results are summarized in Table 4-2 and tabulated in Appendix B, Tables B-1 to B-4. Sulphur content and speciation are discussed below.

- Overall, the mine rock and ore-grade samples had variable sulphur contents, with sulphur concentrations ranging from below detection (i.e., 0.005%) to 10% for the mine rock and 0.01 to 7.5% for ore-grade materials. Mine rock samples generally had lower sulphur contents (median 0.9% sulphur) than samples classified as ore-grade materials (median 3% sulphur), however, many mine rock samples had high sulphur contents, similar to ore-grade materials.
- Samples from the Portage Zone generally had higher sulphur contents (median of 1.2% in the mine rock and 3.3% in ore-grade materials) than samples from the East Extension Zone (median 0.60% in the mine rock and 2.1% for ore-grade materials) and Camp Zone (median 0.5% and 2.2% in the mine rock and ore-grade materials, respectively; Table 4-2).
- In general, the sulphur content of the andesite, tuff, and metasediment samples was lower than other lithologies, and the sulphur content of the trachyte and volcanic breccia samples was higher than other lithologies. However, generally similar ranges of sulphur contents were observed for all Project rock types (Table 4-2).
- Comparison of total sulphur and sulphide sulphur contents indicated that sulphide sulphur represented the dominant form of sulphur in the samples, as presented in Figure 4-1 and Figure 4-2.
- Sulphate sulphur concentrations were generally low and often at or near the analytical detection limit. Overall, sulphate concentrations ranged from 0.005 to 0.3% (median 0.03%) for both the mine rock and the ore-grade materials samples. Little variability in sulphate content was observed among the Zones or lithologies.



As previously noted, most of the drill core samples were obtained from recent drilling, but some samples collected as part of previous studies were obtained from older drill core (>10 years old at the time of sampling). Therefore, sulphur speciation tests results were inspected on the basis of core age at the time of analysis to assess if the archived drill core may have weathered in storage, which can influence interpretation of ABA test results.

A higher sulphate content or a greater proportion of sulphur present as sulphate sulphur in older drill core would suggest the possibility of in-situ weathering. No major differences in the concentration and form of sulphur were identified among the drill core samples of various ages, suggesting that in-situ weathering was limited.

4.1.3 Acid Potential

The acid potential of the samples was calculated from sulphide sulphur. A summary of AP values is provided in Table 4-3 and discussed below. Results are tabulated in Appendix B, Tables B-1 to B-4.

- AP values for the mine rock samples ranged from 0.13 to 312 kg CaCO₃/t (median 27 kg CaCO₃/t; Table 4-3). AP values for the ore-grade samples ranged from 0.25 to 232 kg CaCO₃/t (median 97 kg CaCO₃/t; Table 4-3).
- The highest AP values were observed in samples collected from the Portage Zone for both mine rock (median 36 kg CaCO₃/t) and ore-grade materials (median 102 kg CaCO₃/t), consistent with higher sulphur contents observed for this Zone. Lower AP values were observed for the Camp Zone (median AP of 14 kg CaCO₃/t in the mine rock and 66 kg CaCO₃/t in the ore-grade materials) and East Extension Zone (median AP of 19 kg CaCO₃/t in the mine rock and 64 kg CaCO₃/t in the ore-grade materials).
- In general, similar ranges of AP values were observed among the Project rock types (Table 4-3). However, the highest median AP values were generally observed for trachyte and volcanic breccia in the mine rock and ore-grade materials. Lower median AP values were noted for the andesite, tuff and metasediments.

4.1.4 Forms of Neutralization Potential

Neutralization potential (NP) content and form was assessed by two complementary methods, including the Sobek NP method and carbonate neutralization potential (CarbNP) by total inorganic carbon analysis. The results are presented in Table 4-4 as well as Figure 4-3 and Figure 4-4 and discussed below. NP and CarbNP results for all samples are tabulated in Appendix B, Tables B-1 to B-4.

- Overall, the NP content of the samples was variable, ranging from -1 to 546 kg CaCO₃/t (Table 4-4). NP ranged from -1 to 546 kg CaCO₃/t (median 126 kg CaCO₃/t) for mine rock samples and 0.10 to 407 kg CaCO₃/t (median 16 kg CaCO₃/t) for the ore-grade samples (Table 8). One sample of mine rock from the Portage Zone had a negative NP value (-1 kg CaCO₃/t). Although this sample also had non-detectable carbonate NP (<1.7 kg CaCO₃/t), it had low levels of sulphate sulphur (0.03%) and a circumneutral paste pH (pH 6.8). Based on these results, it is unclear if this sample contained stored acidity or if the slightly negative NP value is due to the precision of the NP test. No other samples had negative NP values.
- The samples formed two distinct groups based on their NP content. One group of samples had a low NP content (approximately 10 kg CaCO₃/t, ranging from -1 to 20 kg CaCO₃/t) and the other group of samples had a higher NP content (approximately 200 kg CaCO₃/t, ranging from approximately 50 to 500 kg CaCO₃/t). The low NP content group of samples were almost exclusively from the Portage Zone, whereas the higher NP content group included samples from the Portage, East Extension, and Camp Zones (Figure 4-3).



While samples of all Project lithologies were among the two NP groups, samples of andesite, tuff, and metasediments and volcanic breccia were predominantly within the higher NP group, and samples of trachyte and porphyry generally comprised most of the samples within the low NP group. However, these patterns were not always consistent, and some andesite, tuff and metasediments samples were among the low NP group, and numerous samples of trachyte and porphyry were also among the high NP group (Figure 4-4). The relationship between CarbNP and NP is presented in Figure 4-3 and Figure 4-4 and indicated the following:

- Carbonate neutralization potential was typically similar to or slightly lower than the neutralization potential content for samples with a higher NP content (e.g., NP >50 kg CaCO₃/t), indicating that most of the NP was present as carbonate minerals in these samples.
- The samples with lower NP content (e.g., NP <20 kg CaCO₃/t) generally had low levels of CarbNP (<10 kg CaCO₃/t), suggesting that non-carbonate minerals comprised a higher proportion of the NP in these samples. These samples were exclusively from the Portage Zone and included both mine rock and ore-grade samples of all Project lithologies (Figure 4-3).

A subset of samples with a low NP content (approximately 10% of the dataset) had notably elevated levels of carbonate NP, suggesting that these samples may contain non-net neutralizing carbonate minerals. Samples in this group included both mine rock and ore-grade samples of all Project lithologies (Figure 4-4). Drill core logs indicated that many samples in this group had argillic alteration, although potassic (biotite) and sericitic alteration was also noted in many of the low NP samples. Neutralization potential content and form results were inspected based on core age at the time of analysis to assess if the archived drill core may have weathered in storage, which can influence interpretation of ABA results. Lower NP content in older drill core would suggest the possibility of in situ weathering. However, no major difference in the NP content was observed among samples based on core age.

4.1.5 Neutralization Potential Ratios

As described in Section 3.0, a sample's ARD potential is primarily assessed based on its neutralization potential ratio (NPR). NPR values were calculated for each sample based on the sample's neutralization potential (NP) and acid potential (AP) ratio (NP/AP). For the purposes of this assessment, NPR values were calculated by two approaches including NPR and CarbNPR (ratio of Carb NP to AP), which assumes that only carbonate minerals (Carb NP) are available for neutralization. This approach was used to be conservative, as some of the samples contained relatively low neutralization potential content and non-detectable levels of carbonate NP.

- As described in Section 3.0, for screening purposes, samples with an NPR of <2 were assumed to be PAG in accordance with industry standard guidance. The proportion of samples classified as PAG and NPAG based on this threshold is summarized in Table 3-3. NPR values based on NP/AP and CarbNP/AP (CarbNPR) are presented in Figure 4-5 to Figure 4-8. A statistical summary of NPR and CarbNPR values is provided in Appendix B, Tables B-1 to B-4.
- Over half of the samples (58%) were classified as NPAG, with NPR>2 (Table 4-5). Whereas 42% of the samples were classified as PAG based on NPR<2, with 35% of the mine rock samples and 74% of the ore-grade samples classified as PAG based on this threshold (Table 4-5). Similar distributions were observed for CarbNPR values as presented in Table 4-5).
- 54% of samples from the Portage Zone had NPR <2 and were classified as PAG. Most samples (e.g., on the order of 85%) from the East Extension Zone and Camp Zone were classified as NPAG (NPR>2; Table 4-5) owing to the generally higher NP content and relatively lower sulphur content of these samples.
- Among the Project lithologies, approximately 80% of the andesite, tuff, and metasediment mine rock samples were classified as NPAG (NPR>2, Table 4-5). Approximately half of the mine rock



samples were classified as PAG (NPR<2) for the trachyte (48% PAG), porphyry (45% PAG), and volcanic breccia (46% PAG; Table 4-5) lithologies. As presented in Table 4-5, ore-grade samples of the Project lithologies were more frequently classified as PAG relative to the mine rock samples.

- As previously described, approximately 10% of the samples had Carb NP values that were notably higher than NP values suggesting the presence of non-net neutralizing carbonate minerals in these samples. Despite this, most of these samples were consistently classified as PAG or NPAG when both NPR and Carb NPR values were considered. Approximately 1% of the samples (n=10 samples) were classified as NPAG based on Carb NPR, and PAG when NPR was considered (NPR<2).

4.2 Net Acid Generation pH

The net acid generation test is considered a complementary analysis to ABA which provides an estimate of the potential of a sample to generate acid (MEND 2009). Results of the net acid generation test were screened against net acid generation pH criteria for PAG and NPAG materials (AMIRA 2002). Net acid generation pH <4.5 is indicative of PAG material, whereas a net acid generation pH >4.5 indicates that a sample has little potential to produce net acidity in the future and may be NPAG. Results of the net acid generation pH test are shown in Figure 4-9 and Figure 4-10 and discussed below. Net acid generation testing results are provided in Appendix B, Table B-5.

- 22% of the samples (n=19 samples) had an acidic net acid generation pH (<4.5) and were classified as PAG. This was consistent with the classification for those samples based on ABA testing (NPR <2).
- 78% of the samples (n=66 samples) had a net acid generation pH (>4.5) and were classified as NPAG.
 - Approximately half (55%, n=47) of these samples were classified as NPAG by ABA testing and have a low probability of producing ARD in the future.
 - However, 22% of the samples (n=19 samples) classified as NPAG by net acid generation testing were classified as PAG by ABA testing (NPR <2). These samples typically had high levels of sulphur (i.e., >2% sulphur); while the samples appeared to be unreactive in the net acid generation test, due to their high sulphur content their classification as NPAG may be a result of incomplete oxidation of sulphur in the single addition net acid generation test.
- Samples classified as PAG by the net acid generation test were exclusively from the Portage Zone. Samples classified as NPAG by the net acid generation test were from all three geologic Zones of the deposit.

4.3 Metals / Elemental Content

Elemental analysis is used to quantify the concentration of elements in solid phases (i.e., minerals), but does not provide a direct assessment of metal leaching potential or resulting water quality. The elemental content of the samples was screened against ten times average crustal abundance values (Price 1997). Samples with elemental concentrations greater than these screening values were considered enriched in those elements.

The information presented below focuses on selected elements and includes those that are of key relevance to ML/ARD. Data for all elements analyzed as part of the elemental content analysis and screening of these results relative to ten times crustal abundance values is provided in Appendix B, Tables B-6 to B-9.

Results were reviewed to verify that enrichment was based on concentrations greater than the analytical detection limit, and that detection limits were lower than ten times the crustal abundance values. Some elements, including boron, were below detection in most samples.



The proportions of samples greater than the ten times crustal abundance screening values are summarized in Table 4-6 for selected elements and discussed below. Elemental content results and a statistical summary are provided in Appendix B, Table B-6 to B-9. It is noted that the comparison to ten times crustal abundance values was conducted for samples analyzed by aqua regia digestion (n=694 samples). The four-acid digestion (n=182 samples) test results from previous studies (MDAG 2012) were excluded owing to the more aggressive nature of this digestion method and its potential to overestimate metal concentrations due to the digestion of refractory silicate phases. As expected, the concentration of major rock forming elements were generally higher in samples analyzed by four acid digestion relative to the aqua regia digestion; however, the proportion of samples indicated to be enriched in certain elements was generally consistent for both methods. Elemental content data are provided in Appendix B, Table B-6.

The following observations were made with respect to elemental enrichment in the samples for key metals.

- **Arsenic:** 71% (n=495 samples) of the samples had arsenic concentrations greater than the screening value of 18 mg/kg, including approximately 70% (n=382) of the mine rock samples and 80% (n=114) of the ore-grade samples (Table 4-6; Appendix B, Tables B-6 to B-9). Arsenic concentrations ranged from 1.6 to 1254 mg/kg (median 34 mg/kg) and 3.8 to 451 mg/kg (median 44 mg/kg) for mine rock and ore-grade samples respectively. In general, arsenic concentrations were higher for the Camp Zone (median 55 mg/kg, ranging from 4.4 to 451 mg/kg) and East Extension Zone (median 69 mg/kg, ranging from 9.0 to 1254 mg/kg), relative to the Portage Zone (median 25 mg/kg, ranging from 1.6 to 612 mg/kg). As shown in Table 4-6, arsenic concentrations were greater than the screening value in 61% of the mine rock samples from the Portage Zone and 81% and 93% of mine rock samples from the Camp Zone and East Extension Zones respectively.
- **Selenium:** 43% of samples (n=299) had selenium concentrations greater than the screening value of 0.5 mg/kg, including approximately 33% (n=181) of the mine rock samples and 82% (n=118) of the ore-grade samples (Table 4-6; Appendix B, Tables B-6 to B-9). Overall, 22% of the dataset (n=147 samples) had selenium concentrations that were below the analytical detection limit. Selenium concentrations ranged from 0.2 to 16 mg/kg (median 0.3 mg/kg) for mine rock samples and were slightly higher for ore-grade samples, ranging from 0.2 to 26 mg/kg (median 2.2 mg/kg). Overall, selenium enrichment was more common for mine rock and ore-grade samples from the Portage Zone (56% of samples) relative to the Camp Zone (16% of samples) and East Extension Zone (9% of samples; Table 4-6). Among mine rock samples, samples of porphyry had the highest proportion of samples with selenium concentrations above the 0.2 mg/kg screening value (60% of samples, Table 4-6). Among ore-grade samples, trachyte samples had the greatest proportion of samples above the screening value (92% of samples, Table 4-6).
- **Molybdenum:** 39% of samples (n=271) had molybdenum concentrations greater than the screening value of 12 mg/kg, including 30% of mine rock samples and 75% of ore-grade samples (Table 4-6; Appendix B, Tables B-6 to B-9). Molybdenum concentrations ranged from 0.07 to 977 mg/kg (median 5 mg/kg) in the mine rock samples and 0.3 to 1228 mg/kg (median 28 mg/kg) in the ore-grade samples (Appendix B, Tables B-6 to B-8). Overall, molybdenum enrichment was more commonly observed for mine rock and ore-grade samples from the Portage Zone (49% of samples) than for the Camp (17% of samples) and East Extension (13% of samples) Zones. The proportion of samples with molybdenum concentrations above the screening value was notably lower in the andesite tuff, and metasediments rock type (15% of mine rock samples and 59% of ore-grade samples) relative to samples from other Project lithologies (Table 4-6).
- **Silver:** 39% of samples (n=272) had silver concentrations greater than the screening value of 0.75 mg/kg, including approximately 29% (n=159) of the mine rock samples and 79% (n=114) of the ore-grade samples (Table 4-6; Appendix B, Tables B-6 to B-9). As presented in Appendix B, Tables B-6 to B-8, silver concentrations were typically low for mine rock, ranging from 0.01 to



60 mg/kg (median 0.31 mg/kg) and for ore-grade materials, ranging from 0.04 to 57 mg/kg (median 0.31 mg/kg). Overall, silver enrichment was more common for mine rock and ore-grade samples from the Portage Zone (51% of samples) relative to the Camp Zone (15 % of samples) and East Extension Zones (9% of samples; Table 4-6).

- **Antimony:** 33% of samples (n=229) had antimony concentrations greater than the screening value of 2.0 mg/kg, with 33% (n=179) of mine rock and 35% (n=50) of ore-grade samples enriched. Most samples had concentrations below this screening threshold, with antimony concentrations ranging from 0.1 to 55 mg/kg (median 1.3 mg/kg) in the mine rock samples and 0.18 to 108 mg/kg (median 1.4 mg/kg) for ore-grade samples (Appendix B, Tables B-6 to B-8). Antimony enrichment was more common for mine rock and ore samples from the East Extension Zone (78% of samples) than relative to the Camp Zone (45% of samples) and Portage Zone (21% of samples). Among mine rock samples, the volcanic breccia rock type had the greatest proportion (46%) of samples with concentrations above the screening value. In the ore-grade samples, the porphyry rock type had the greatest proportion (54%) of samples enriched in antimony for major rock types.
- **Lead:** 9% of samples (n=64) had lead concentrations greater than the screening value of 140 mg/kg. This included 8% (n=42) of the mine rock samples and 15% (n=22) of ore-grade samples. Lead concentrations ranged from 0.6 to 3,324 mg/kg (median 9.9 mg/kg) for mine rock samples and 1.5 to 2,755 mg/kg (median 26 mg/kg) for ore-grade samples (Appendix B, Tables B-6 to B-8). Overall lead enrichment was more common for mine rock and ore samples from the Portage Zone (12% of samples) relative to the Camp Zone (2% of samples) and East Extension Zone (4% of samples).
- **Cadmium:** 9% of samples (n=61) had cadmium concentrations greater than the screening value of 1.5 mg/kg, including 7% (n=39) of the mine rock samples and 15% (n=22) of the ore-grade samples. Cadmium concentrations were generally low, ranging from 0.01 to 51 mg/kg (median 0.13 mg/kg) for mine rock samples and 0.02 to 20 mg/kg (median 0.25 mg/kg) for ore-grade samples (Appendix B, Tables B-6 to B-8). Samples from the Portage Zone were most often enriched in cadmium (12% of samples) relative to samples from the Camp Zone (2% of samples) and East Extension Zone (2% of samples).
- Isolated instances of metal concentrations greater than the screening values (i.e., $\leq 5\%$ of the 694 samples) were observed for mercury (n=22) and tungsten (n=20), although concentrations were generally only marginally greater than the screening values for these elements. Isolated occurrences of enrichment were also observed for chromium (n=2), copper (n=3), thallium (n=4), boron (n=1), uranium (n=1), and zinc (n=7).

In general, higher metal concentrations were observed for samples with a greater sulphur content, with trends in elemental content and sulphur content observed for a number of elements including iron, arsenic, selenium, molybdenum, silver, antimony, lead, cadmium, copper, mercury, and uranium. However, the overall concentrations of most of these elements were low relative to screening values, as discussed above.

Elemental content data were compared to sulphur content on a molar basis for selected elements to assess the potential presence of metal sulphide minerals in the samples which could influence their ML/ARD potential.

Although certain elements that can be present as sulphide minerals were elevated relative to screening values, iron to sulphur molar ratios were in line with the presence of (FeS₂) for many of the samples, as shown in Figure 4-11. Higher concentrations of iron relative to sulphur were observed for some samples, attributed to the dissolution of biotite or chlorite in the aqua regia digestion. While arsenic was identified to be elevated relative to screening values in approximately 70% of the samples, a comparison of arsenic to sulphur molar ratios indicated that the arsenic content of the samples was notably lower than the sulphur content for nearly all of the samples, as shown in Figure 4-12. A subset of samples, generally from the East



Extension Zone and Camp Zone, had slightly higher arsenic concentrations relative to most other samples in the dataset, however, arsenic concentrations were still lower than sulphur concentrations for most of these samples. This suggests that arsenopyrite (FeAsS) is not a significant sulphide in the samples, and arsenic may be present in other sulphide minerals (e.g., substituted in pyrite). This is consistent with mineralogical testwork results and geological observations for the Project, whereby pyrite is identified as the only sulphide mineral present in the rock.

4.4 Leachable Metals

Several static tests were conducted to assess parameters of potential interest for metal leaching from selected drill core samples, including the SFE test and the net acid generation leachate test. The results of these tests are discussed below.

4.4.1 Shake Flask Extraction

Overall, 109 samples were analyzed by the SFE test including a range of drill core samples from each of the Project lithologic groups and geologic Zones of the deposit. Leachate chemistry was compared to screening values to identify parameters of potential interest for metal leaching. The screening analysis included comparison of the SFE leachate chemistry to Ontario Provincial Water Quality Objectives (PWQO) for the protection of aquatic life, both PWQO and interim PWQO values. As described previously, the SFE test and screening approach is not a direct assessment of minewater quality and comparisons to screening criteria holds no regulatory significance.

SFE leachate results are tabulated in Appendix B, Table B-10, and parameters greater than the screening values are summarized in Table 4-7. Key observations of the SFE test results are summarized below.

The pH of all SFE leachates was circumneutral to weakly alkaline, ranging from pH 6.7 to 8.8 (median pH 7.3). One sample was slightly higher than the maximum PWQO screening value for pH (pH 8.5). This may be related to the SFE test conditions rather than representative of the drainage quality under field conditions.

Sulphate concentrations were generally low in the SFE leachates, on the order of 10 to 20 milligrams per litre (mg/L) for most samples. Two samples had sulphate concentrations on the order of 100 mg/L and 600 mg/L in their SFE leachates, suggesting that these two samples contained stored oxidation products or other soluble sulphate minerals. Mineralogical data (R-XRD) confirmed the presence of gypsum in the sample with 600 mg/L of sulphate in its SFE leachate (Appendix C, Table C-1). However, the reason for the higher sulphate concentration in the SFE leachate from the other sample is unclear as other tests did not suggest the presence of stored oxidation products or soluble sulphate phases in this sample.

Metal concentrations in the SFE leachates were low for most metals. However, several elements showed elevated concentrations relative to their respective screening values including arsenic (42% of the tested samples), antimony (13% of the tested samples), cobalt (17% of the tested samples), copper (18% of the tested samples), cadmium (9% of the tested samples), and lead (8% of the tested samples). Detection limits for mercury and phosphorous were greater than screening values for these elements for some samples (analyzed as part of a previous program), resulting in several samples that had mercury (10% of tested samples) and phosphorus (11% of tested samples) concentrations above the screening value. When only detectable results were considered, only 1% (n=1) and 5% (n=6) of the tested samples were above the screening values for mercury and phosphorous, respectively. Additional information on metal concentrations in the SFE leachates is provided below.

- Aluminum concentrations were higher than the interim PWQO screening value (0.075 mg/L) in 85% of samples tested. This is likely an artefact of the testing procedure due to the presence of colloidal aluminum and is unlikely to be observed under field conditions at neutral pH.



- Arsenic concentrations were greater than the interim PWQO screening value (0.005 mg/L) for 42% of the tested samples (n=46 samples) and the PWQO screening value (0.1 mg/L) for 4% of the tested samples (n=4; Table 4-7). In general samples from the Portage Zone showed lower arsenic concentrations in SFE leachates than samples from the East Extension and Camp Zones, but there were no strong patterns between arsenic leachability and lithology type. A relationship between arsenic content and leachable arsenic was observed, with higher arsenic content samples generally observed to show higher leachable arsenic concentrations in the SFE test (Figure 4-13).
- Copper concentrations were greater than the PWQO screening value (0.005 mg/L) in 17% of the tested samples (n=20, Table 4-7). All samples with elevated copper concentrations in SFE leachates were from the Portage Zone, including mine rock and ore-grade samples, with copper concentrations on the order of two- to eight-fold greater than the screening value. While some samples with a higher copper content showed higher copper concentrations in the SFE leachates for those samples, a strong relationship between copper content and SFE leachable copper was not observed (Figure 4-14).
- Cobalt concentrations were greater than the PWQO screening value (0.0009 mg/L) in 17% of analyzed samples (n=19, Table 4-7). All samples with elevated cobalt concentrations were from the Portage Zone, including mine rock and ore-grade samples (Table 4-7). A strong relationship between cobalt content and leachable cobalt was not observed.
- Antimony concentrations were greater than the interim PWQO screening value (0.02 mg/L) in 13% (n=14) of the tested samples (Table 4-7). Samples with antimony concentrations greater than the screening value included exclusively mine rock (Table 4-7), and samples with a higher antimony content showed higher leachable antimony concentrations in the SFE test (Figure 4-15). Overall antimony concentrations in SFE leachates were low and up to approximately two times higher than the interim PWQO screening value.
- Cadmium concentrations were greater than the PWQO (0.0002 mg/L) and interim PWQO (0.0001 mg/L) screening values in 7% (n=8) and 9% (n=10) of the tested samples, respectively (Table 4-7). Samples with elevated cadmium included mine rock and ore from the Portage Zone (Table 4-7) and most samples with elevated cadmium concentrations were only marginally greater than the screening values. Although samples with a lower cadmium content generally showed lower cadmium concentrations in SFE leachates, there was no consistent relationship between cadmium content and leachability in the SFE test.
- Lead concentrations were greater than the interim PWQO screening value (0.001 mg/L) in 8% of samples (n=9) and greater than the PWQO screening value (0.005 mg/L) in 4% of samples (n=4). Samples with elevated lead concentrations included mine rock and ore from the Portage Zone. Samples with a higher lead content generally had higher lead concentrations in SFE leachates (Figure 4-16).
- Isolated instances of leachate concentrations greater than the PWQO screening values (i.e., $\leq 5\%$ of the 109 samples) were observed for zinc (n=8), nickel (n=5), silver (n=4), molybdenum (n=3), thallium (n=3), tungsten (n=2), chromium (n=1), iron (n=1), and uranium (n=1).

4.4.2 Net Acid Generation Leachate

Net acid generation leachate testing of 25 samples was undertaken to assess metal leaching under acidic conditions (Appendix B, Table B-11).

As discussed in Section 4.2, 22% of the samples (n=19 samples) analyzed by net acid generation testing produced acidic leachate and were identified as PAG.



Results for samples with acidic leachate suggested that aluminum, cadmium, chromium, cobalt, copper, iron, lead, nickel, silver, thallium, uranium, vanadium, and zinc are the most likely elements of potential interest under acidic leaching conditions.

4.4.3 Mineralogy

Mineralogical identification using R-XRD was completed on 25 drill core samples to assess their mineralogical composition including the presence of acid generating and acid neutralizing minerals. Samples of all major lithologic groups were tested. Results are presented in Appendix C, Table C-1. Chemical formulae of the minerals discussed below are provided in Table 4-8. It is noted that R-XRD can identify minerals at concentrations to fractions of a weight percent when suitable diffraction conditions exist.

Overall, pyrite was the only sulphide mineral identified by R-XRD. Pyrite was identified in 24 of the 25 tested samples, with pyrite contents ranging from 0.3 to 13%. One sample had no detectable sulphide minerals. Pyrite was identified in samples of all lithologies and in all Zones.

A comparison between R-XRD results (expressed as sulphide sulphur) and ABA sulphide analysis (sulphide sulphur by difference) indicated very good agreement between the two tests.

Low levels of sulphate minerals (gypsum, 0.8%) were identified in one sample of trachyte. Sulphate minerals were not identified in other samples.

Overall, most samples analyzed contained carbonate minerals, predominately represented by calcite and dolomite. Additional carbonate minerals including ankerite-dolomite and siderite were also identified. A comparison between R-XRD results (expressed as kg CaCO₃/t) and CarbNP analysis indicated generally good agreement between the two tests.

Carbonate mineralogy observations are described below:

- Calcite (identified as calcite and magnesian calcite by R-XRD) and dolomite (identified as dolomite by R-XRD) was present in most samples. Calcite concentrations ranged from 0.3 to 18% and dolomite concentrations ranged from 0.7 to 18%. Calcite and dolomite co-occurred in some samples, but other samples contained exclusively calcite or dolomite. In general, the highest concentrations of calcite and dolomite were observed in samples from the andesite, tuff, and metasediments lithology.
- Non-net neutralizing carbonate minerals including siderite (identified as siderite or calcian siderite by R-XRD) and potentially ankerite were identified in 17 out of the 25 tested samples.
 - When identified, siderite was generally present with other calcite and dolomite, often at lower concentrations than these phases (on the order of 0.2 to 2.1%), although siderite represented the only carbonate mineral detected by R-XRD in 2 of the 8 samples that contained siderite. Siderite was primarily identified in samples from the Portage Zone and where identified it was present in samples of all lithologies.
 - The presence of ankerite could not be resolved with R-XRD and this phase was identified as an ankerite-dolomite solid solution (possibly ferroan dolomite). Ankerite-dolomite was identified to be present in ten samples including samples from all tested lithologies, with concentrations ranging from 0.8 to 20%. Eight of the ten samples with ankerite-dolomite also contained percent-level concentrations of dolomite or calcite. Carb NP values were slightly lower than NP values for the samples where ankerite-dolomite was identified, suggesting that if present ankerite likely did not comprise a high proportion of the carbonates in these samples.



The following additional observations are provided from the R-XRD results:

- Potassium feldspar (microcline) was variably present in the samples, most often identified in samples of the trachyte and volcanic breccia rock types. Plagioclase feldspar (albite) was present in nearly all of the samples, with concentrations ranging from several percent up to 40%. Higher concentrations of plagioclase were most commonly identified in samples of the andesite, tuff, and metasediment rock type.
- Phyllosilicate minerals including clinocllore, illite/muscovite, biotite, phlogopite and kaolinite were also observed. Illite/muscovite was observed in all of the samples whereas clinocllore was present only in samples of the andesite, tuff and metasediments rock type. Biotite was variably present among the samples, with the highest biotite concentrations observed in some of the ore-grade samples of trachyte (20 to 30%). Kaolinite was observed at relatively low concentrations (0.3 to 2%) in a few samples from the Portage Zone.
- Quartz was present in all of the samples with concentrations on the order of several percent up to 25% (Appendix C). Other oxide minerals including magnetite, ilmenite and rutile were present at generally low amounts (up to several percent) in some of the samples. Halide minerals (fluorite, halite) were identified to be present in several samples in generally low abundance (Appendix C).



Table 4-1: Summary of Paste pH Values

Type	Description	Count	Median	Range
			Paste pH	
Overall				
All Samples		876	8.9	4.0 - 10
Mine Rock		716	8.9	4.0 - 10
Ore-Grade Materials		160	8.3	4.3 - 9.8
Zone				
All Samples	Portage	609	8.7	4.0 - 10
	Camp	137	9.0	7.9 - 9.9
	East Extension	130	9.2	8.1 - 9.9
Mine Rock	Portage	479	8.8	4.0 - 10
	Camp	119	9.0	7.9 - 9.9
	East Extension	118	9.3	8.1 - 9.9
Ore-Grade Materials	Portage	130	8.1	4.3 - 9.5
	Camp	18	8.9	8.3 - 9.5
	East Extension	12	8.8	8.2 - 9.8
Lithology				
Mine Rock	Andesite, Tuff and Metasediments	312	9.0	5.0 - 10
	Trachyte	168	8.9	6.1 - 9.8
	Porphyry	110	8.9	5.2 - 9.8
	Volcanic Breccia	109	8.9	4.0 - 9.7
	Lamprophyre	7	8.3	7.4 - 9.6
	Other ⁽¹⁾	10	8.8	6.8 - 9.2
Ore-Grade Materials	Andesite, Tuff and Metasediments	48	8.6	6.7 - 9.8
	Trachyte	53	7.9	4.3 - 9.3
	Porphyry	37	8.1	6.5 - 9.5
	Volcanic Breccia	17	8.5	5.4 - 9.6
	Lamprophyre	1	7.9	--
	Other ⁽¹⁾	4	8.6	6.9 - 9.3

Notes:

Classification of waste and ore based on a cutoff grade of 0.4 g/t Au

1 "Other" lithologies include samples classified as altered, carbonatite, muscovite seam, felsic intrusive, and mafic intrusive, primarily collected during previous sampling programs.



Table 4-2: Sulphur Speciation Summary

Type	Description	Count	Median	Range	Median	Range	Median	Range
			Total S (%)		Sulphate S (%)		Sulphide S (%)	
Overall								
All Samples		876	1.2	0.0050 - 10	0.030	0.0050 - 0.30	1.2	0.0040 - 10
Mine Rock		716	0.89	0.0050 - 10	0.030	0.0050 - 0.30	0.87	0.0040 - 10
Ore-Grade Materials		160	3.2	0.010 - 7.5	0.030	0.0050 - 0.25	3.1	0.0080 - 7.4
Zone								
All Samples	Portage	609	1.5	0.010 - 10	0.030	0.0050 - 0.30	1.5	0.0040 - 10
	Camp	137	0.52	0.0050 - 6.0	0.030	0.0050 - 0.18	0.50	0.010 - 6.0
	East Extension	130	0.71	0.010 - 6.4	0.020	0.0050 - 0.040	0.69	0.010 - 6.4
Mine Rock	Portage	479	1.2	0.010 - 10	0.030	0.0050 - 0.30	1.1	0.0040-10
	Camp	119	0.47	0.0050 - 5.5	0.030	0.0050 - 0.18	0.44	0.010 - 5.4
	East Extension	118	0.63	0.010 - 6.4	0.020	0.0050 - 0.040	0.62	0.010 - 6.4
Ore-Grade Materials	Portage	130	3.3	0.010 - 7.5	0.030	0.0050 - 0.25	3.3	0.0080 - 7.4
	Camp	18	2.2	0.095 - 6.0	0.030	0.010 - 0.050	2.1	0.055 - 6.0
	East Extension	12	2.1	0.23 - 5.1	0.020	0.0050 - 0.040	2.1	0.23 - 5.0
Lithology								
Mine Rock	Andesite, Tuff and Metasediments	312	0.58	0.0050 - 5.9	0.03	0.0050 - 0.30	0.56	0.010 - 5.9
	Trachyte	168	1.3	0.010 - 7.2	0.03	0.0050 - 0.10	1.2	0.0050 - 7.2
	Porphyry	110	0.90	0.020 - 6.7	0.02	0.0050 - 0.10	0.86	0.010 - 6.7
	Volcanic Breccia	109	1.5	0.020 - 6.6	0.03	0.0050 - 0.20	1.5	0.010 - 6.6
	Lamprophyre	7	0.43	0.040 - 1.6	0.03	0.025 - 0.050	0.41	0.010 - 1.5
	Other ⁽¹⁾	10	0.20	0.020 - 10	0.015	0.0050 - 0.040	0.17	0.0040 - 10.0
Ore-Grade Materials	Andesite, Tuff and Metasediments	48	3.0	0.23 - 6.2	0.03	0.0050 - 0.19	2.9	0.23 - 6.1
	Trachyte	53	3.7	0.36 - 7.5	0.04	0.0050 - 0.25	3.7	0.33 - 7.4
	Porphyry	37	2.0	0.038 - 6.1	0.03	0.010 - 0.060	2.0	0.0080 - 6.1
	Volcanic Breccia	17	3.0	0.010 - 6.5	0.03	0.0050 - 0.060	3.0	0.010 - 6.4
	Lamprophyre	1	3.3	--	0.03	--	3.3	--
	Other ⁽¹⁾	4	2.6	1.1 - 4.4	0.04	0.030 - 0.070	2.6	1.1 - 4.3

Notes:

Classification of waste and ore based on a cutoff grade of 0.4 g/t Au

Total sulphur determined by Leco analyzer; sulphate sulphur determined by HCl leach.

Sulphide sulphur calculated as the difference between total sulphur and sulphate sulphur.

1 "Other" lithologies include samples classified as altered, carbonatite, muscovite seam, felsic intrusive, and mafic intrusive, primarily collected during previous sampling programs.



Table 4-3: Summary of AP Values

Type	Description	Count	Median	Range
			AP (kg CaCO ₃ /t)	
Overall				
All Samples		876	36	0.13 - 312
Mine Rock		716	27	0.13 - 312
Ore-Grade Materials		160	97	0.25 - 232
Zone				
All Samples	Portage	609	45	0.13 - 312
	Camp	137	15	0.31 - 186
	East Extension	130	22	0.31 - 198
Mine Rock	Portage	479	36	0.13 - 312
	Camp	119	14	0.31 - 169
	East Extension	118	19	0.31 - 198
Ore-Grade Materials	Portage	130	102	0.25 - 232
	Camp	18	66	1.7 - 186
	East Extension	12	64	7.0 - 158
Lithology				
Mine Rock	Andesite, Tuff and Metasediments	312	18	0.31 - 183
	Trachyte	168	39	0.16 - 225
	Porphyry	110	27	0.31 - 210
	Volcanic Breccia	109	46	0.31 - 206
	Lamprophyre	7	13	0.31 - 48
	Other ⁽¹⁾	10	5.3	0.13 - 312
Ore-Grade Materials	Andesite, Tuff and Metasediments	48	91	7.0 - 191
	Trachyte	53	114	10 - 232
	Porphyry	37	63	0.25 - 191
	Volcanic Breccia	17	94	0.31 - 201
	Lamprophyre	1	103	--
	Other ⁽¹⁾	4	81	34 - 135

Notes:

Classification of ore-grade materials based on a cutoff grade of 0.4 g/t Au.

1 "Other" lithologies include samples classified as altered, carbonatite, muscovite seam, felsic intrusive, and mafic intrusive, primarily collected during previous sampling programs.



Table 4-4: Summary of NP Values

Type	Description	Count	Median	Range
			AP (kg CaCO ₃ /t)	
Overall				
All Samples		876	119	-1.1 - 546
Mine Rock		716	126	-1.1 - 546
Ore-Grade Materials		160	16	0.10 - 407
Zone				
All Samples	Portage	609	82	-1.1 - 396
	Camp	137	162	6.4 - 546
	East Extension	130	149	54 - 407
Mine Rock	Portage	479	99.8	-1.1 - 396
	Camp	119	158.7	6.4 - 546
	East Extension	118	144.8	54 - 398
Ore-Grade Materials	Portage	130	13.3	0.10 - 313
	Camp	18	195.1	109 - 380
	East Extension	12	180	116 - 407
Lithology				
Mine Rock	Andesite, Tuff and Metasediments	312	147	2.6 - 398
	Trachyte	168	107.5	2.5 - 273
	Porphyry	110	70	0.90 - 546
	Volcanic Breccia	109	123.4	3.1 - 317
	Lamprophyre	7	13.2	6.1 - 396
	Other ⁽¹⁾	10	133.2	-1.1 - 202
Ore-Grade Materials	Andesite, Tuff and Metasediments	48	121.55	4.4 - 407
	Trachyte	53	11.3	3.3 - 278
	Porphyry	37	12.2	3.9 - 229
	Volcanic Breccia	17	72.3	3.8 - 380
	Lamprophyre	1	8.5	--
	Other ⁽¹⁾	4	320.6	0.10 - 399

Notes:

Classification of ore-grade materials based on a cutoff grade of 0.4 g/t Au.

1 "Other" lithologies include samples classified as altered, carbonatite, muscovite seam, felsic intrusive, and mafic intrusive, primarily collected during previous sampling programs.



Table 4-5: Proportions of PAG and NPAG Samples

Type	Description	Count	NPR (NP/AP)				CarbNPR (CarbNP/AP)			
			PAG	NPAG	%NPAG	%PAG	PAG	NPAG	%PAG	%NPAG
Overall										
All Samples		876	370	506	58%	42%	389	487	44%	56%
Mine Rock		716	251	465	65%	35%	264	452	37%	63%
Ore-Grade Materials		160	119	41	26%	74%	125	35	78%	22%
Zone										
All Samples	Portage	609	330	279	46%	54%	347	262	57%	43%
	Camp	137	23	114	83%	17%	25	112	18%	82%
	East Extension	130	17	113	87%	13%	17	113	13%	87%
Mine Rock	Portage	479	219	260	54%	46%	231	248	48%	52%
	Camp	119	19	100	84%	16%	20	99	17%	83%
	East Extension	118	13	105	89%	11%	13	105	11%	89%
Ore-Grade Materials	Portage	130	111	19	15%	85%	116	14	89%	11%
	Camp	18	4	14	78%	22%	5	13	28%	72%
	East Extension	12	4	8	67%	33%	4	8	33%	67%
Lithology										
Mine Rock	Andesite, Tuff and Metasediments	312	66	246	79%	21%	71	241	23%	77%
	Trachyte	168	80	88	52%	48%	83	85	49%	51%
	Porphyry	110	49	61	55%	45%	55	55	50%	50%
	Volcanic Breccia	109	51	58	54%	46%	51	58	46%	54%
	Lamprophyre	7	3	4	57%	43%	3	4	43%	57%
	Other ⁽¹⁾	10	2	8	80%	20%	2	8	20%	80%
Ore-Grade Materials	Andesite, Tuff and Metasediments	48	28	20	42%	58%	30	18	63%	38%
	Trachyte	53	46	7	13%	87%	47	6	89%	11%
	Porphyry	37	30	7	18%	82%	30	7	82%	18%
	Volcanic Breccia	17	13	4	22%	78%	14	3	84%	16%
	Lamprophyre	1	1	0	0%	100%	1	0	100%	0%
	Other ⁽¹⁾	4	1	3	75%	25%	2	2	50%	50%

Notes:

Classification of ore-grade materials based on a cutoff grade of 0.4 g/t Au.

1 "Other" lithologies include samples classified as altered, carbonatite, muscovite seam, felsic intrusive, and mafic intrusive, primarily collected during previous sampling programs.



Table 4-6: Summary of Samples with Enriched Elemental Content Relative to Screening Values

Type	Description	Count	Percent Greater Than 10x Crustal Abundance														
			Ag	As	B	Cd	Cr	Cu	Hg	Mo	Pb	Sb	Se	Tl	U	W	Zn
10x Continental Crust Value (mg/kg)⁽¹⁾			0.75	18	100	1.5	1020	600	0.85	12	140	2	0.5	8.5	27	12.5	1650
Overall																	
All Samples		694	39%	71%	0.1%	9%	0.3%	0.4%	3%	39%	9%	33%	43%	1%	0.1%	3%	1%
Mine Rock		550	29%	69%	0%	7%	0.4%	0.4%	2%	30%	8%	33%	33%	1%	0.2%	3%	1%
Ore-Grade Materials		144	79%	79%	1%	15%	0%	1%	6%	75%	15%	35%	82%	0%	0%	4%	3%
Zone																	
All samples	Portage	488	51%	64%	0.2%	12%	0.4%	1%	4%	49%	12%	21%	56%	1%	0.2%	1%	1%
	Camp	104	15%	84%	0%	2%	0%	0%	1%	17%	2%	45%	16%	1%	0%	6%	0%
	East Extension	102	9%	94%	0%	2%	0%	0%	1%	13%	4%	78%	9%	0%	0%	8%	1%
Mine Rock	Portage	370	39%	61%	0%	10%	1%	1%	3%	39%	10%	19%	45%	1%	0.3%	1%	1%
	Camp	88	8%	81%	0%	2%	0%	0%	1%	14%	2%	42%	10%	1%	0%	1%	0%
	East Extension	92	5%	93%	0%	1%	0%	0%	0%	9%	2%	77%	4%	0%	0%	7%	0%
Ore-Grade Materials	Portage	118	86%	75%	1%	18%	0%	1%	7%	82%	17%	26%	89%	0%	0%	3%	3%
	Camp	16	56%	100%	0%	0%	0%	0%	0%	38%	0%	63%	50%	0%	0%	31%	0%
	East Extension	10	40%	100%	0%	10%	0%	0%	10%	50%	20%	90%	50%	0%	0%	20%	10%
Lithology																	
Mine Rock	Andesite, Tuff and Metasediments	237	18%	65%	0%	5%	0%	0%	2%	15%	3%	32%	19%	1%	0%	2%	0%
	Trachyte	141	35%	67%	0%	9%	1%	0%	1%	38%	12%	28%	38%	0%	0%	1%	0%
	Porphyry	63	51%	68%	0%	6%	0%	0%	3%	52%	14%	27%	60%	0%	0%	2%	2%
	Volcanic Breccia	94	33%	86%	0%	10%	0%	1%	4%	40%	9%	46%	43%	0%	1%	7%	1%
	Lamprophyre	7	14%	71%	0%	14%	14%	0%	0%	29%	0%	14%	43%	14%	0%	0%	0%
	Other ⁽²⁾	8	13%	38%	0%	13%	0%	0%	13%	0%	13%	13%	13%	0%	0%	0%	0%
Ore-Grade Materials	Andesite, Tuff and Metasediments	41	68%	85%	0%	17%	0%	0%	12%	59%	15%	34%	71%	0%	0%	5%	7%
	Trachyte	50	90%	74%	0%	20%	0%	0%	2%	84%	12%	24%	92%	0%	0%	2%	0%
	Porphyry	13	77%	77%	0%	15%	0%	0%	8%	77%	15%	54%	77%	0%	0%	8%	0%
	Volcanic Breccia	35	77%	77%	0%	6%	0%	3%	6%	80%	20%	40%	80%	0%	0%	6%	3%
	Lamprophyre	1	100%	100%	0%	0%	0%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%
Other ⁽²⁾	4	75%	100%	25%	25%	0%	0%	0%	75%	25%	50%	100%	0%	0%	0%	0%	

Notes:

Classification of ore-grade materials based on a cutoff grade of 0.4 g/t Au.

1 Based on continental crust values presented in Price (1997).

2 "Other" lithologies include samples classified as altered, carbonatite, muscovite seam, felsic intrusive, and mafic intrusive, primarily collected during previous sampling programs.



Table 4-7: Overview of SFE Leachate Screening Results

Parameter	pH	Al	Sb	As	Cd	Cr	Co	Cu	Fe	Pb	Hg	Mo	Ni	P	Ag	Tl	W	U	V	Zn	
Units	pH Units	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	
PWQO	6.5-8.5	-	-	0.1	0.0002	0.001	0.0009	0.005	0.3	0.005	0.0002	-	0.025	-	0.0001	-	-	-	-	0.03	
Interim PWQO	-	0.075	0.02	0.005	0.0001	-	-	0.005	-	0.001	-	0.04	-	0.02	-	0.0003	0.03	0.005	0.006	0.02	
Overall																					
All Samples	Count	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	
	% Greater than PWQO	1%	--	--	4%	7%	1%	17%	18%	1%	4%	10%	--	5%	--	4%	--	--	--	4%	
	% Greater than Interim PWQO	--	85%	13%	42%	9%	--	--	18%	--	8%	--	3%	--	11%	--	3%	2%	1%	0%	4%
Mine Rock	Count	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	
	% Greater than PWQO	0%	--	--	3%	4%	1%	11%	15%	0%	4%	5%	--	3%	--	3%	--	--	--	3%	
	% Greater than Interim PWQO	--	91%	15%	42%	5%	--	--	15%	--	8%	--	1%	--	8%	--	1%	2%	1%	0%	3%
Ore-Grade Materials	Count	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
	% Greater than PWQO	6%	0%	--	6%	22%	0%	50%	33%	6%	0%	33%	--	11%	--	6%	--	--	--	6%	
	% Greater than Interim PWQO	--	56%	0%	44%	28%	--	--	33%	--	11%	--	11%	--	28%	--	11%	0%	0%	0%	6%
Zone																					
All Samples	Portage	Count	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	
		% Greater than PWQO	0%	--	--	0%	12%	0%	29%	30%	2%	6%	12%	--	8%	--	6%	--	--	--	6%
		% Greater than Interim PWQO	--	76%	3%	27%	15%	--	--	30%	--	14%	--	5%	--	14%	--	5%	3%	2%	0%
	Camp	Count	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
		% Greater than PWQO	5%	--	--	5%	0%	5%	0%	0%	0%	0%	9%	--	0%	--	0%	--	--	--	0%
		% Greater than Interim PWQO	--	100%	23%	45%	0%	--	--	0%	--	0%	--	0%	--	9%	--	0%	0%	0%	0%
	East Extension	Count	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
		% Greater than PWQO	0%	--	--	14%	0%	0%	0%	0%	0%	5%	--	0%	--	0%	--	--	--	--	0%
		% Greater than Interim PWQO	--	100%	33%	86%	0%	--	--	0%	--	0%	--	0%	--	5%	--	0%	0%	0%	0%
Mine Rock	Portage	Count	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	
		% Greater than PWQO	0%	--	--	0%	8%	0%	20%	27%	0%	8%	6%	--	6%	--	6%	--	--	--	6%
		% Greater than Interim PWQO	--	84%	4%	25%	10%	--	--	27%	--	14%	--	2%	--	10%	--	2%	4%	2%	0%
	Camp	Count	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
		% Greater than PWQO	0%	--	--	0%	0%	5%	0%	0%	0%	5%	--	0%	--	0%	--	--	--	--	0%
		% Greater than Interim PWQO	--	100%	25%	40%	0%	--	--	0%	--	0%	--	0%	--	5%	--	0%	0%	0%	0%
	East Extension	Count	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
		% Greater than PWQO	0%	--	--	15%	0%	0%	0%	0%	0%	5%	--	0%	--	0%	--	--	--	--	0%
		% Greater than Interim PWQO	--	100%	35%	85%	0%	--	--	0%	--	0%	--	0%	--	5%	--	0%	0%	0%	0%
Ore-Grade Materials	Portage	Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
		% Greater than PWQO	0%	--	--	0%	27%	0%	60%	40%	7%	0%	33%	--	13%	--	7%	--	--	--	7%
		% Greater than Interim PWQO	--	47%	0%	33%	33%	--	--	40%	--	13%	--	13%	--	27%	--	13%	0%	0%	0%
	Camp	Count	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
		% Greater than PWQO	50%	--	--	50%	0%	0%	0%	0%	0%	50%	--	0%	--	0%	--	--	--	--	0%
		% Greater than Interim PWQO	--	100%	0%	100%	0%	--	--	0%	--	0%	--	0%	--	50%	--	0%	0%	0%	0%
	East Extension	Count	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		% Greater than PWQO	0%	--	--	0%	0%	0%	0%	0%	0%	0%	--	0%	--	0%	--	--	--	--	0%
		% Greater than Interim PWQO	--	100%	0%	100%	0%	--	--	0%	--	0%	--	0%	--	0%	--	0%	0%	0%	0%



Table 4-7: Overview of SFE Leachate Screening Results (continued)

Parameter			pH	Al	Sb	As	Cd	Cr	Co	Cu	Fe	Pb	Hg	Mo	Ni	P	Ag	Tl	W	U	V	Zn	
Units			pH Units	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	
PWQO			6.5-8.5	-	-	0.1	0.0002	0.001	0.0009	0.005	0.3	0.005	0.0002	-	0.025	-	0.0001	-	-	-	-	0.03	
Interim PWQO			-	0.075	0.02	0.005	0.0001	-	-	0.005	-	0.001	-	0.04	-	0.02	-	0.0003	0.03	0.005	0.006	0.02	
Lithology																							
Mine Rock	Andesite, Tuff, and Metasediments	Count	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	44	45	
		% Greater than PWQO	0%	--	--	7%	0%	0%	4%	16%	0%	0%	7%	--	0%	--	0%	0%	0%	0%	0%	0%	0%
		% Greater than Interim PWQO	--	96%	13%	36%	0%	--	--	16%	--	0%	0%	0%	--	7%	--	0%	0%	0%	0%	0%	0%
	Trachyte	Count	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
		% Greater than PWQO	0%	--	--	0%	7%	4%	19%	15%	0%	11%	4%	--	7%	--	7%	--	--	--	--	--	4%
		% Greater than Interim PWQO	--	85%	19%	44%	7%	--	--	15%	--	15%	--	4%	--	4%	--	4%	4%	4%	0%	0%	4%
	Porphyry	Count	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
		% Greater than PWQO	0%	--	--	0%	20%	0%	40%	40%	0%	0%	20%	--	20%	--	20%	--	--	--	--	--	20%
		% Greater than Interim PWQO	--	60%	20%	60%	40%	--	--	40%	--	20%	--	0%	--	40%	--	0%	20%	20%	0%	20%	
	Volcanic Breccia	Count	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
		% Greater than PWQO	0%	--	--	0%	7%	0%	7%	7%	0%	7%	--	0%	--	0%	--	0%	--	--	--	--	7%
		% Greater than Interim PWQO	--	100%	14%	57%	7%	--	--	7%	--	14%	--	0%	--	14%	--	0%	0%	0%	0%	7%	
	Lamprophyre	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		% Greater than PWQO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		% Greater than Interim PWQO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Other ¹⁾	Count	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		% Greater than PWQO	0%	--	--	0%	0%	0%	0%	0%	0%	0%	0%	--	0%	--	0%	--	--	--	--	--	0%
		% Greater than Interim PWQO	--	100%	0%	0%	0%	--	--	0%	--	0%	--	0%	--	0%	--	0%	0%	0%	0%	0%	0%
	Ore-Grade Materials	Andesite, Tuff, and Metasediments	Count	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
			% Greater than PWQO	14%	--	--	14%	29%	0%	43%	29%	0%	0%	43%	--	0%	--	0%	--	--	--	--	0%
			% Greater than Interim PWQO	--	71%	0%	29%	29%	--	--	29%	--	14%	--	14%	--	43%	--	0%	0%	0%	0%	0%
Trachyte		Count	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
		% Greater than PWQO	0%	--	--	0%	33%	0%	67%	50%	17%	0%	33%	--	33%	--	0%	--	--	--	--	--	17%
		% Greater than Interim PWQO	--	50%	0%	67%	50%	--	--	50%	--	17%	--	0%	--	17%	--	33%	0%	0%	0%	0%	
Porphyry		Count	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
		% Greater than PWQO	0%	--	--	0%	0%	0%	50%	0%	0%	0%	0%	--	0%	--	0%	--	--	--	--	--	0%
		% Greater than Interim PWQO	--	50%	0%	50%	0%	--	--	0%	--	0%	--	50%	--	0%	--	0%	0%	0%	0%	0%	
Volcanic Breccia		Count	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		% Greater than PWQO	0%	--	--	0%	0%	0%	33%	33%	0%	0%	33%	--	0%	--	33%	--	--	--	--	--	0%
		% Greater than Interim PWQO	--	33%	0%	33%	0%	--	--	33%	--	0%	--	0%	--	33%	--	0%	0%	0%	0%	0%	
Lamprophyre		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		% Greater than PWQO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		% Greater than Interim PWQO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Other ¹⁾		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		% Greater than PWQO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		% Greater than Interim PWQO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Notes:

Classification of ore-grade materials based on a cutoff grade of 0.4 g/t Au.

1 "Other" lithologies include samples classified as altered, carbonatite, muscovite seam, felsic intrusive, and mafic intrusive, primarily collected during previous sampling programs.

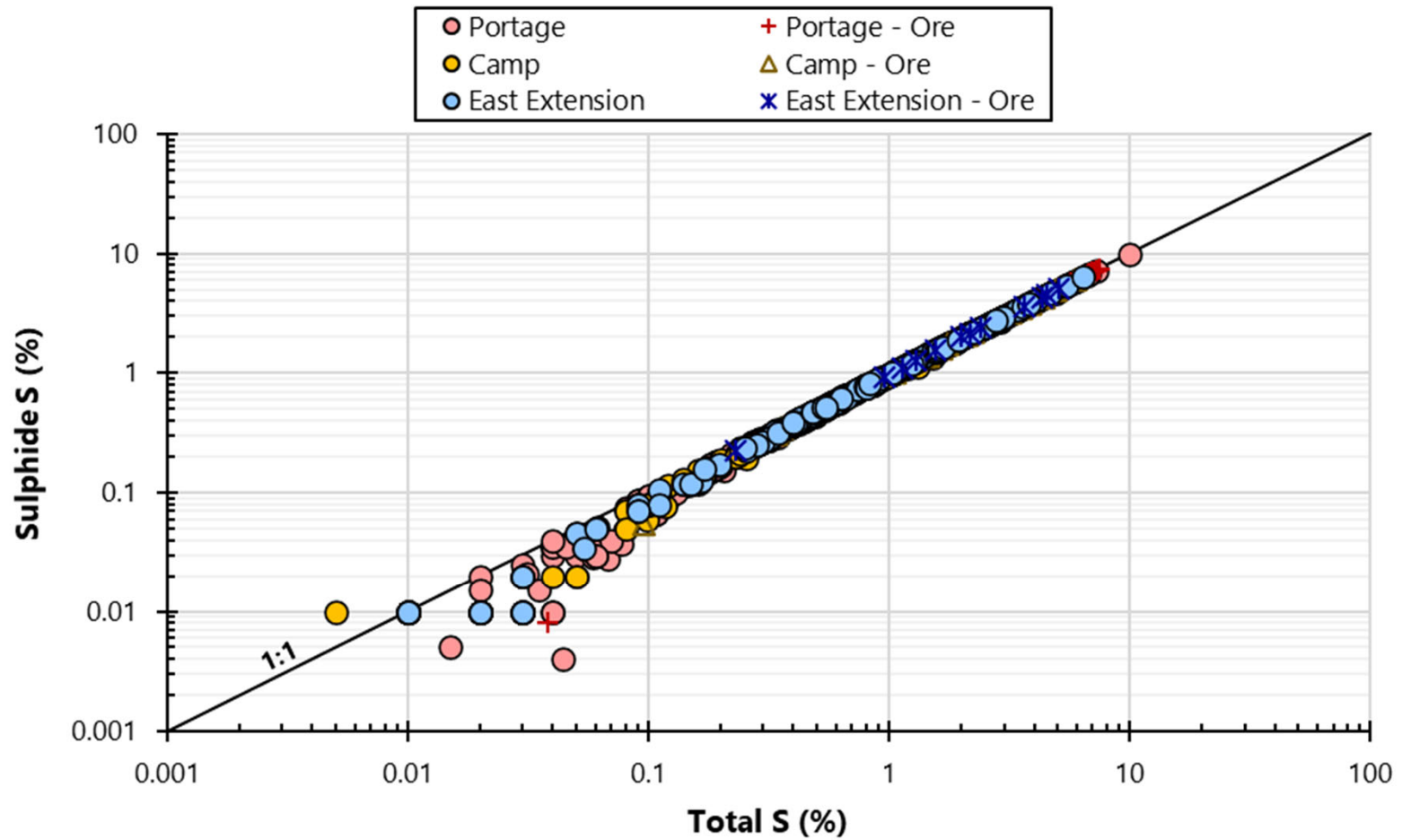


Table 4-8: Chemical Formulae of Minerals Identified in R-XRD

Mineral Group	Mineral Name	Chemical Formula
Sulphides	Pyrite	FeS ₂
Sulphates	Gypsum	CaSO ₄ 2H ₂ O
Carbonates	Ankerite-Dolomite	Ca(Fe ^(II) ,Mg,Mn)(CO ₃) ₂ -CaMg(CO ₃) ₂
	Dolomite	CaMg(CO ₃) ₂
	Calcite, magnesian	(Ca,Mg)CO ₃
	Calcite	CaCO ₃
	Siderite	Fe ^(II) CO ₃
	Siderite, calcian	(Fe,Ca,Mg)CO ₃
Feldspars	K-Feldspar (Microcline)	KAlSi ₃ O ₈
	Plagioclase (Albite)	NaAlSi ₃ O ₈ – CaAl ₂ Si ₂ O ₈
Phyllosilicates	Biotite	K(Mg,Fe ^(II)) ₃ AlSi ₃ O ₁₀ (OH) ₂
	Illite/Muscovite	K _{0.65} Al _{2.0} Al _{0.65} Si _{3.35} O ₁₀ (OH) ₂ -KAl ₂ AlSi ₃ O ₁₀ (OH) ₂
	Clinochlore	(Mg,Fe ^(II)) ₅ Al(Si ₃ Al)O ₁₀ (OH) ₈
	Kaolinite	Al ₂ Si ₂ O ₅ (OH) ₄
	Phlogopite	KMg ₃ AlSi ₃ O ₁₀ (OH) ₂
Oxides	Quartz	SiO ₂
	Magnetite	Fe ^(II) Fe ^(III) ₂ O ₄
	Ilmenite	Fe ^(II) TiO ₃
	Rutile	TiO ₂
Halides	Fluorite	CaF ₂
	Halite	NaCl



Sulphide S vs. Total S - Zone



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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Springpole Gold Project
Red Lake District, Ontario

wood.

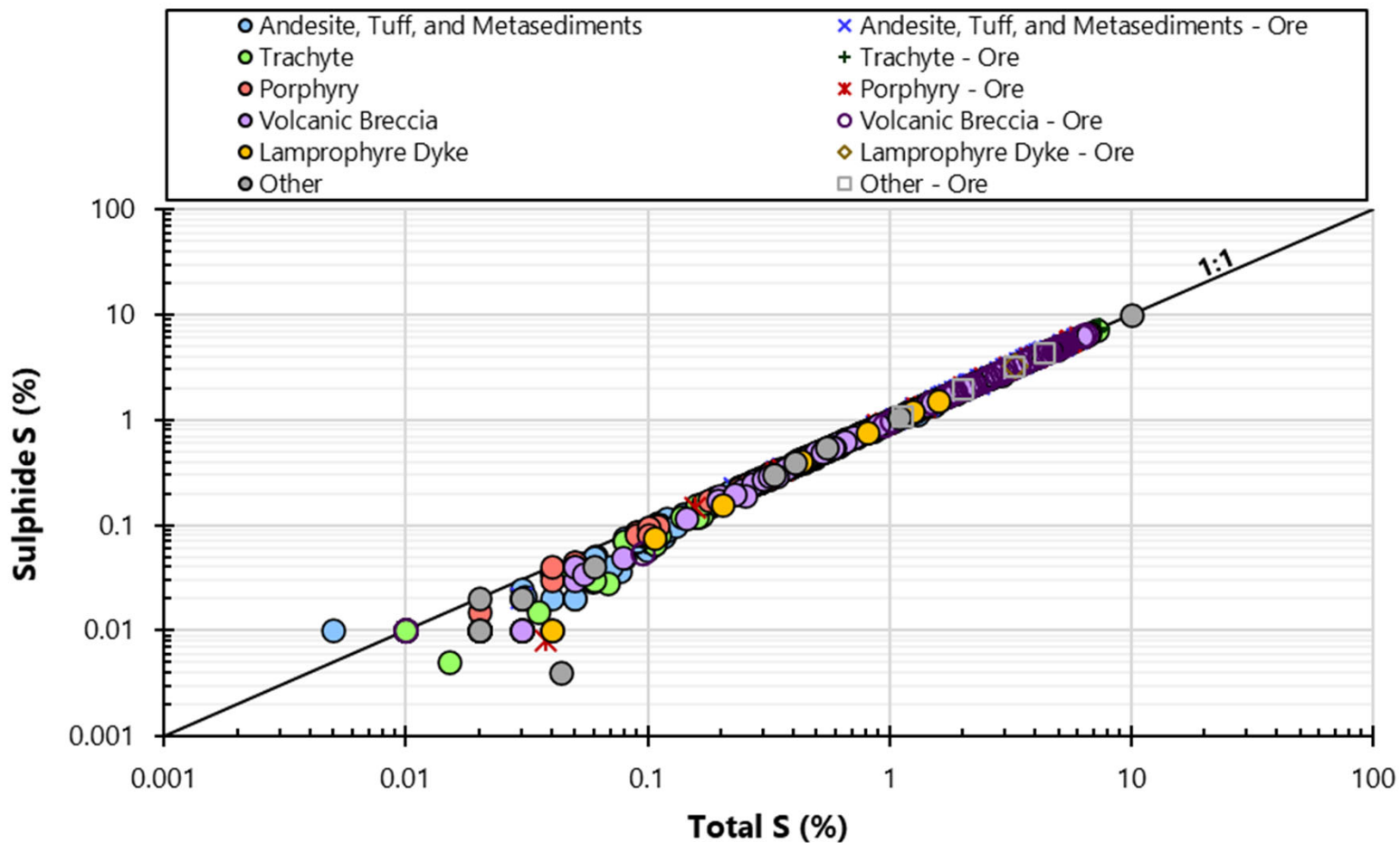
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-1

Sulphide S vs. Total S - Lithology



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

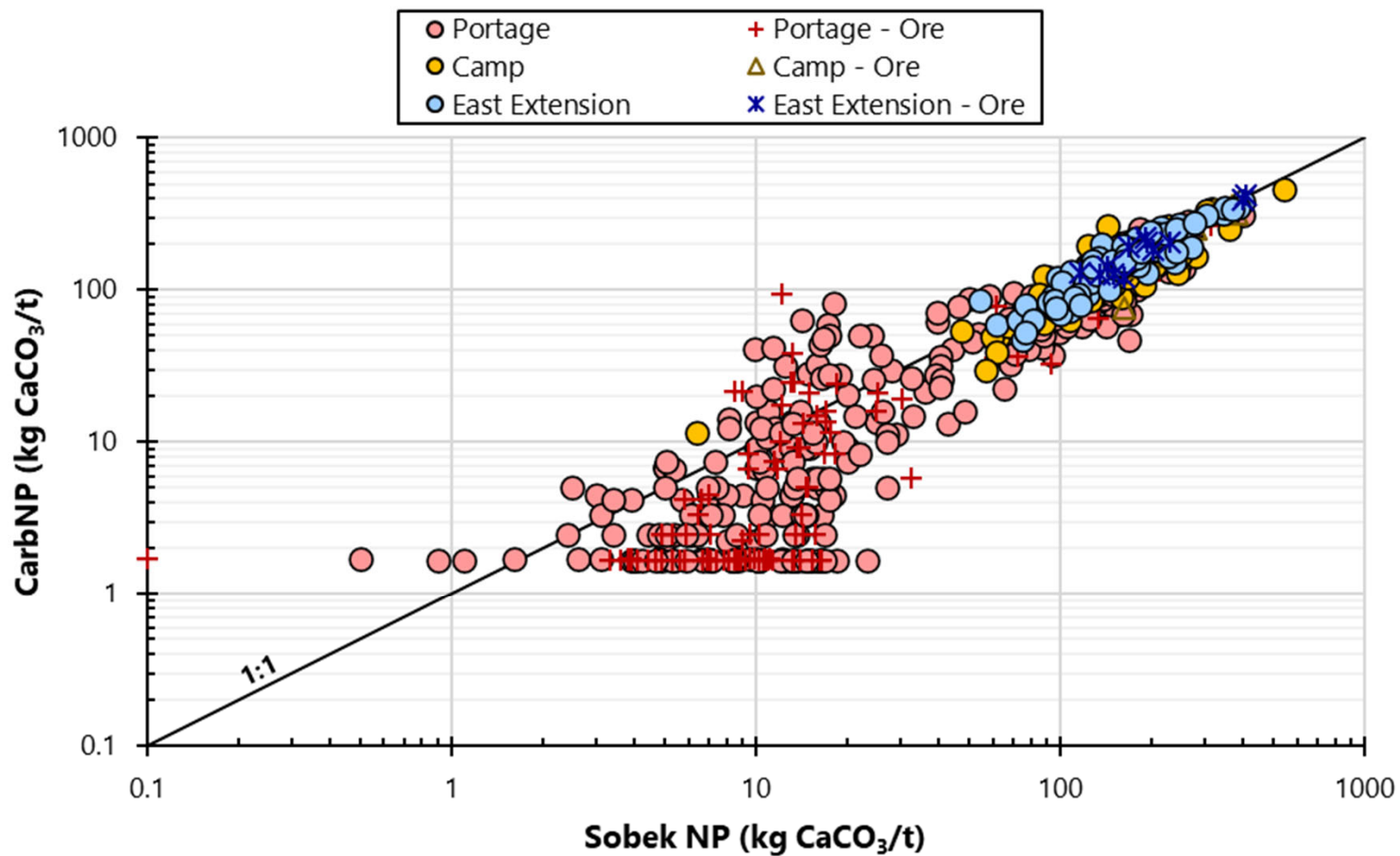
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-2

CarbNP vs. Sobek NP - Zone



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

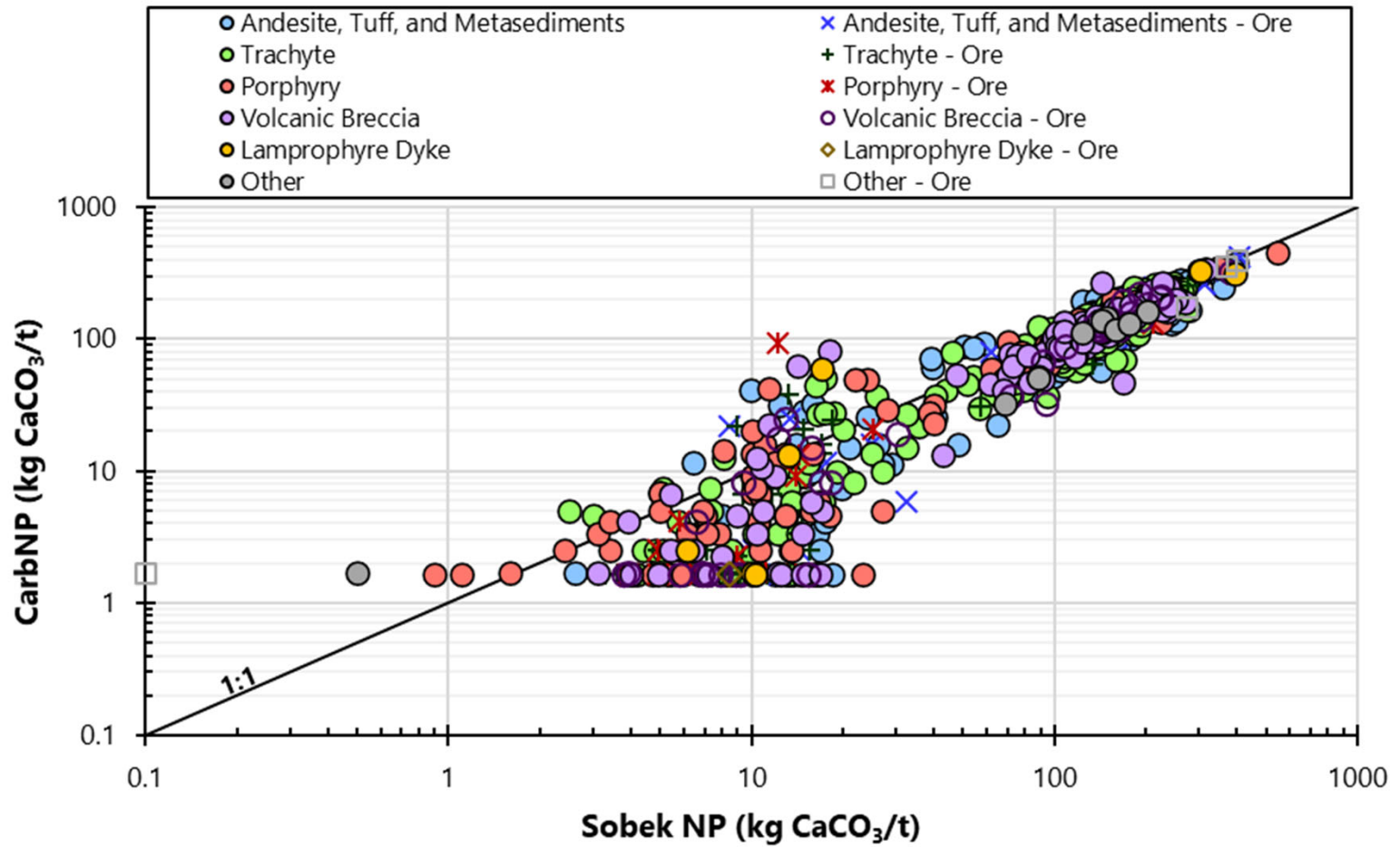
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-3

CarbNP vs. Sobek NP - Lithology



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

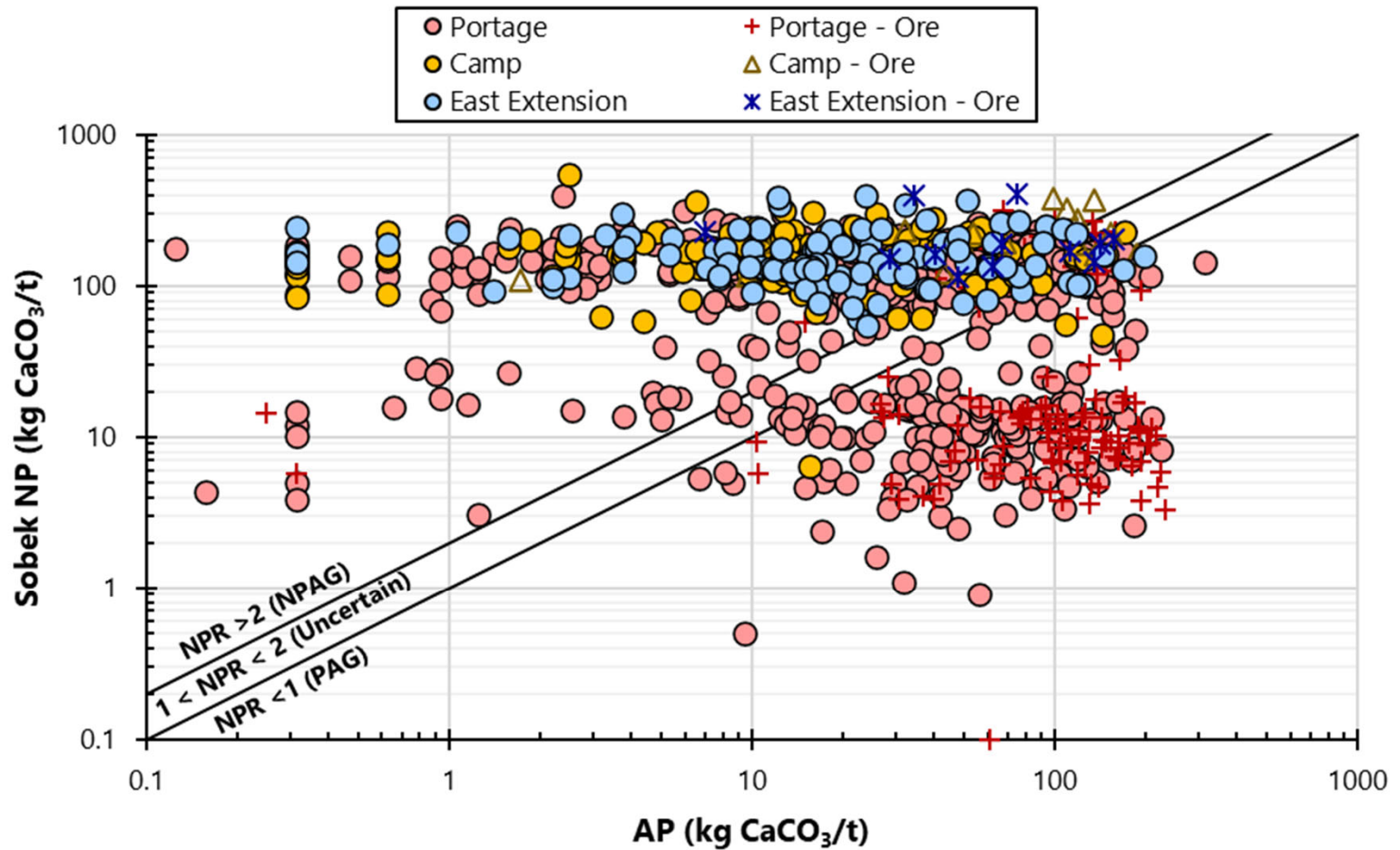
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-4

NP vs. AP - Zone



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

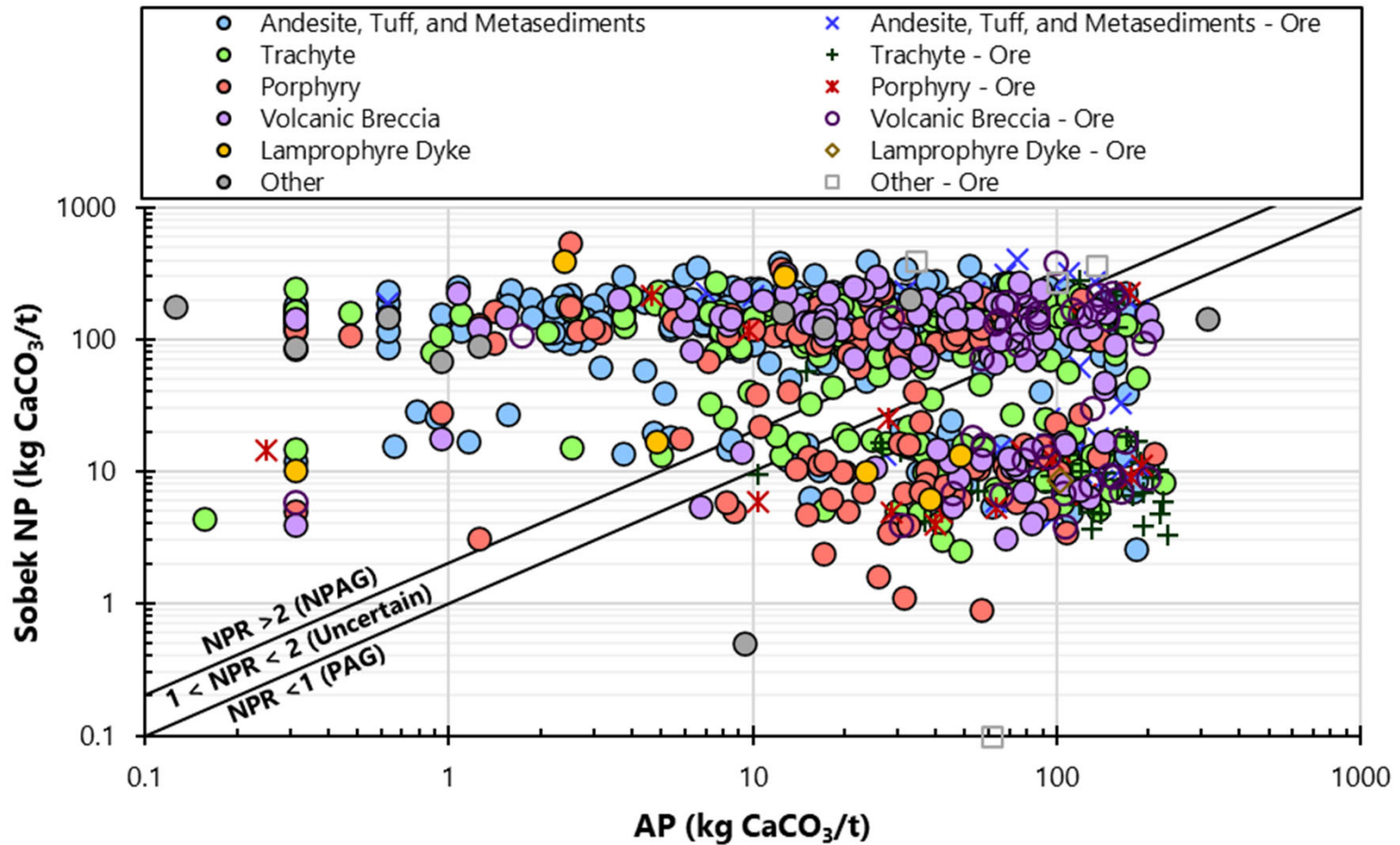
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-5

NP vs. AP - Lithology



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

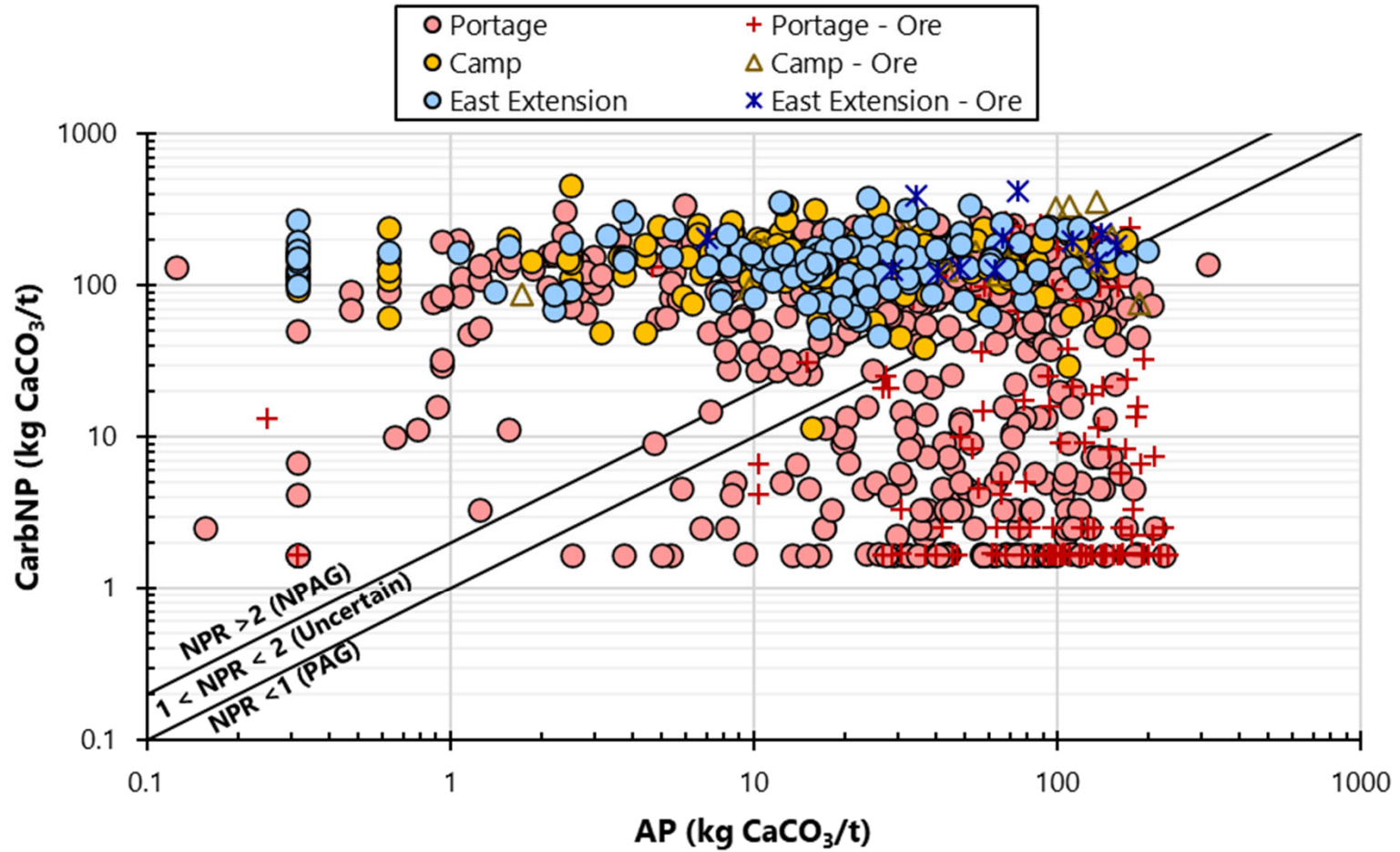
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-6

CarbNP vs. AP - Zone



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

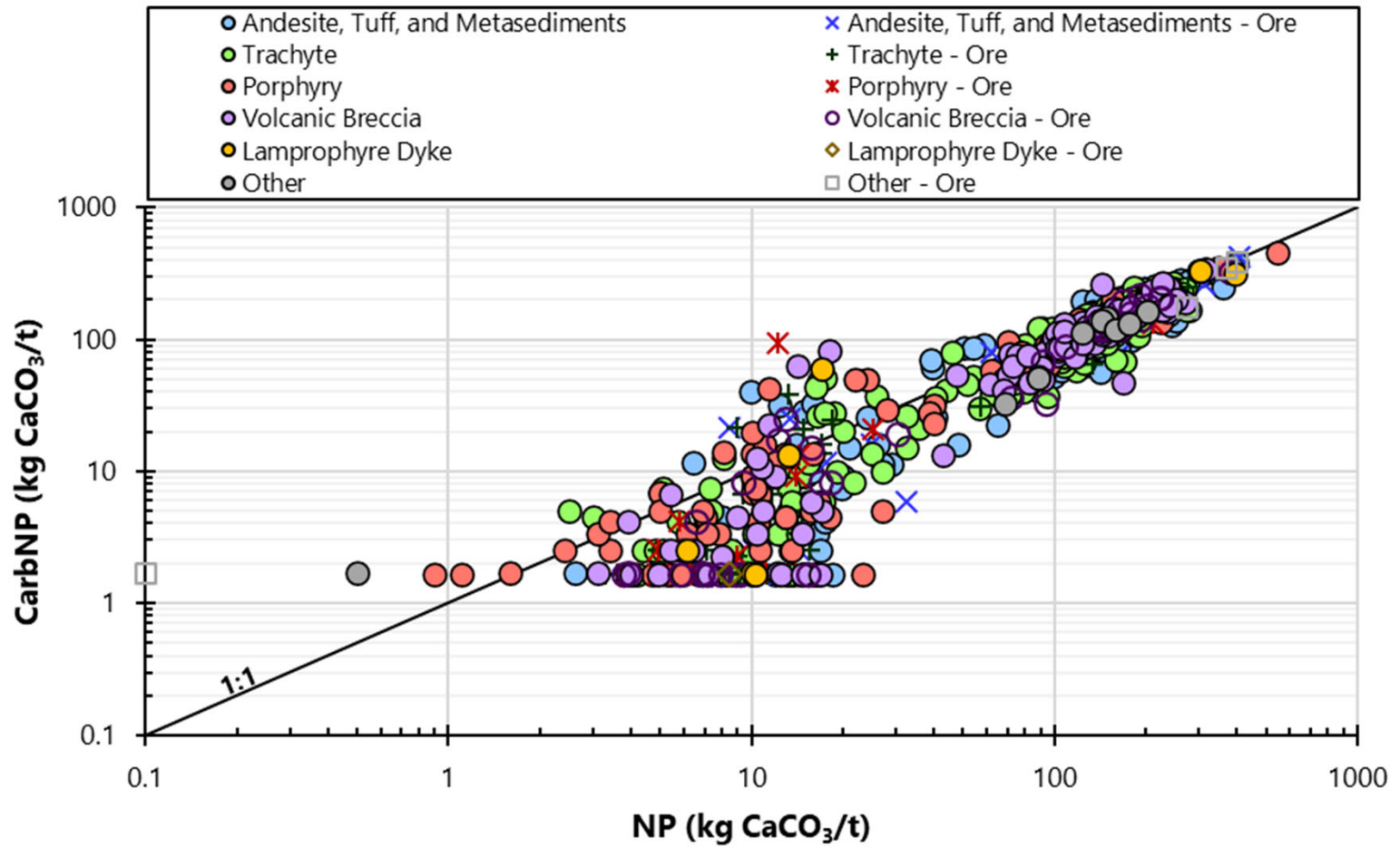
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-7

CarbNP vs. AP - Lithology



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

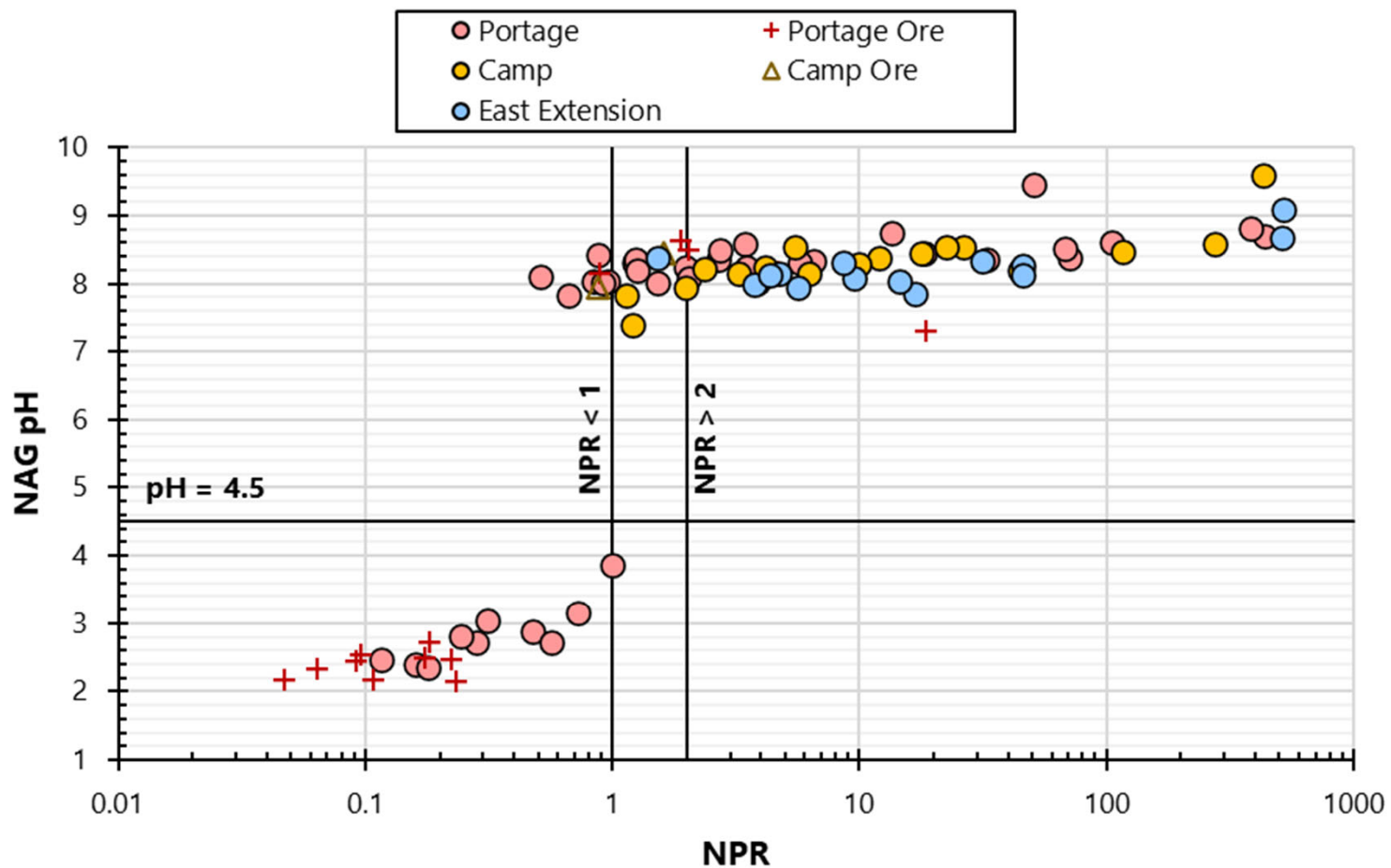
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-8

NAG pH vs. NPR - Zone



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

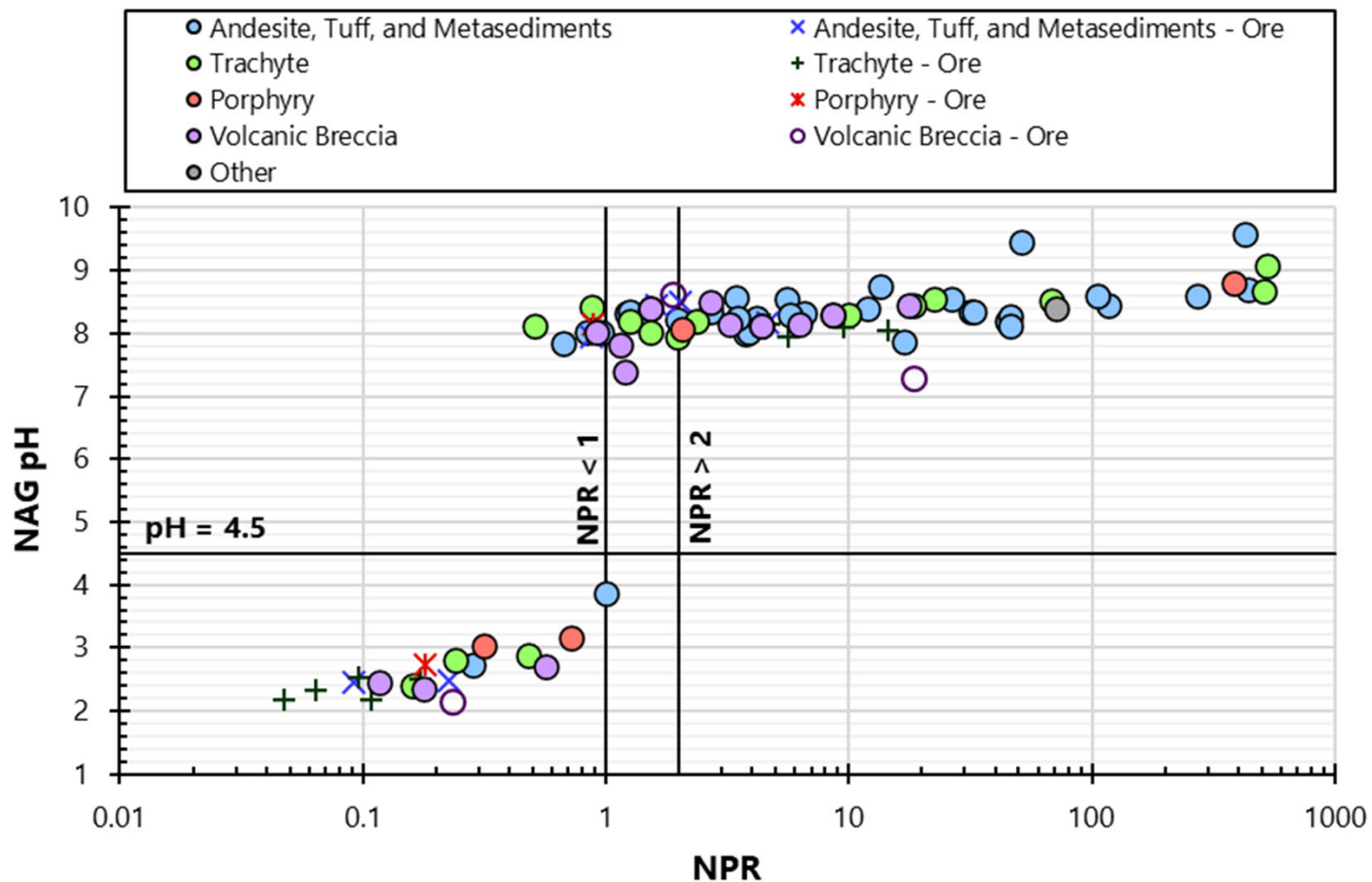
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-9

NAG pH vs. NPR - Lithology



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

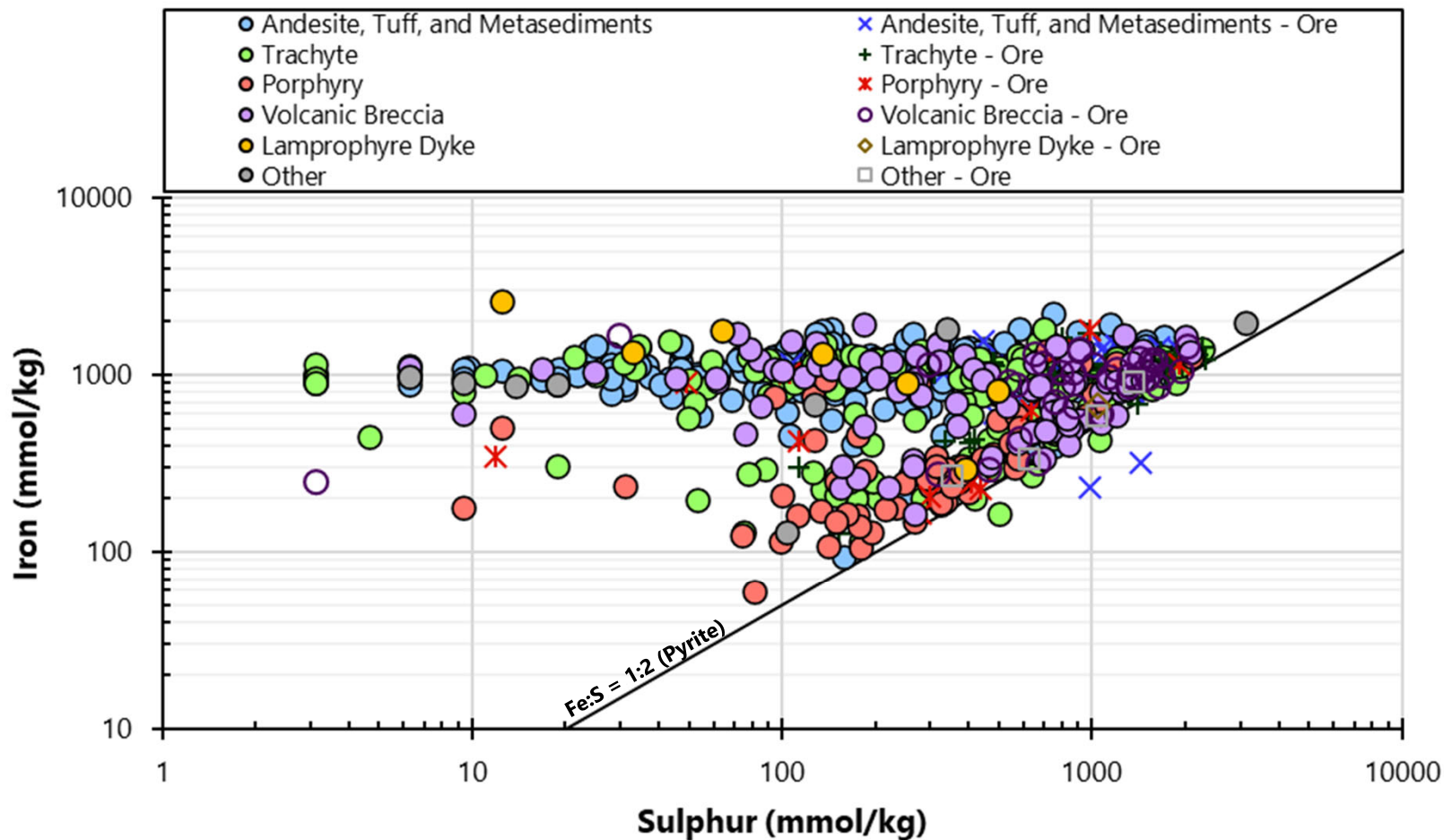
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-10

Iron vs. Sulphur Content - Lithology



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

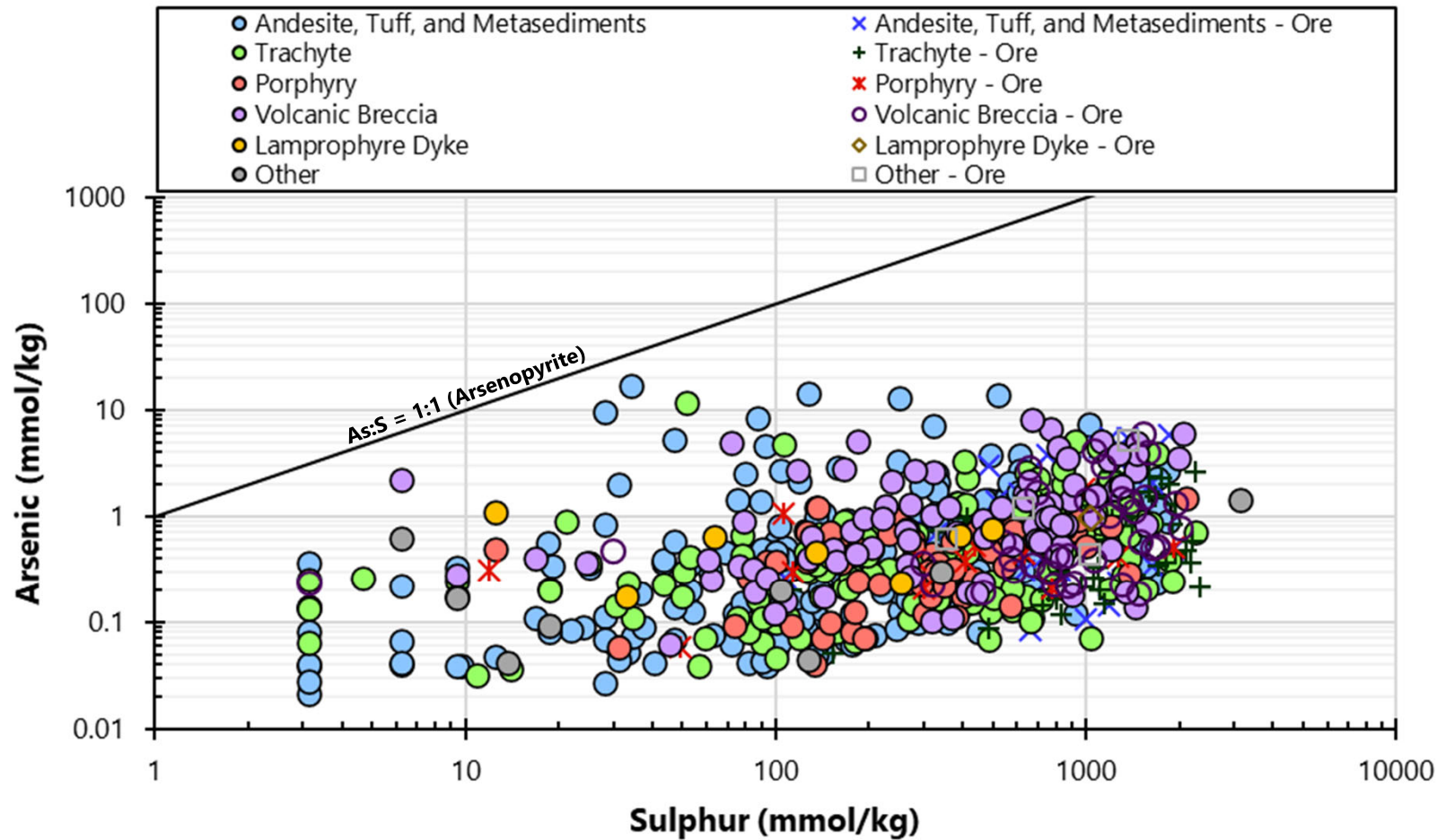
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-11

Arsenic vs. Sulphur Content - Lithology



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

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wood.

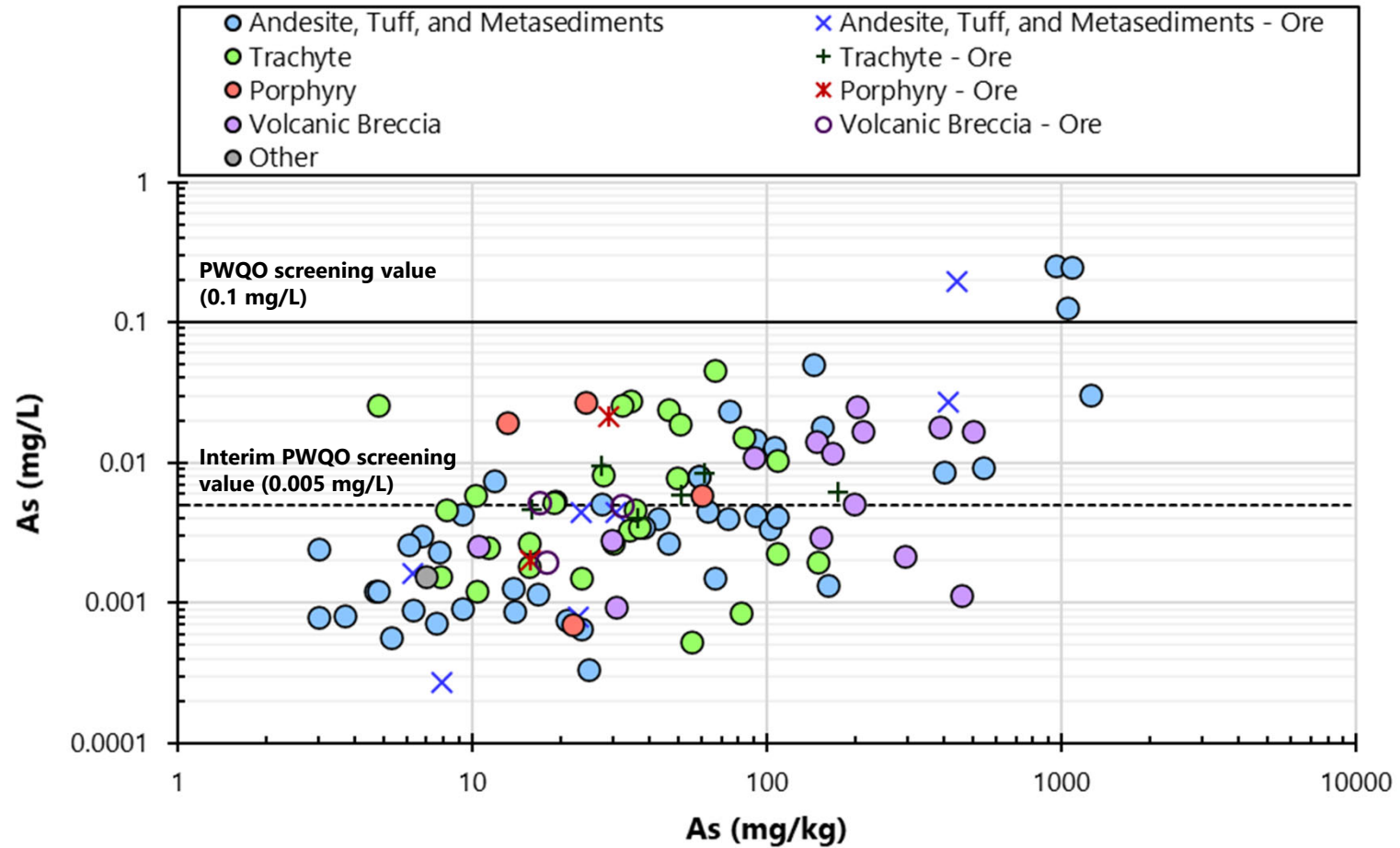
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-12

SFE Leachable vs. Solid Arsenic Content



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

Screening values are for comparison purposes only and hold no regulatory significance.

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wood.

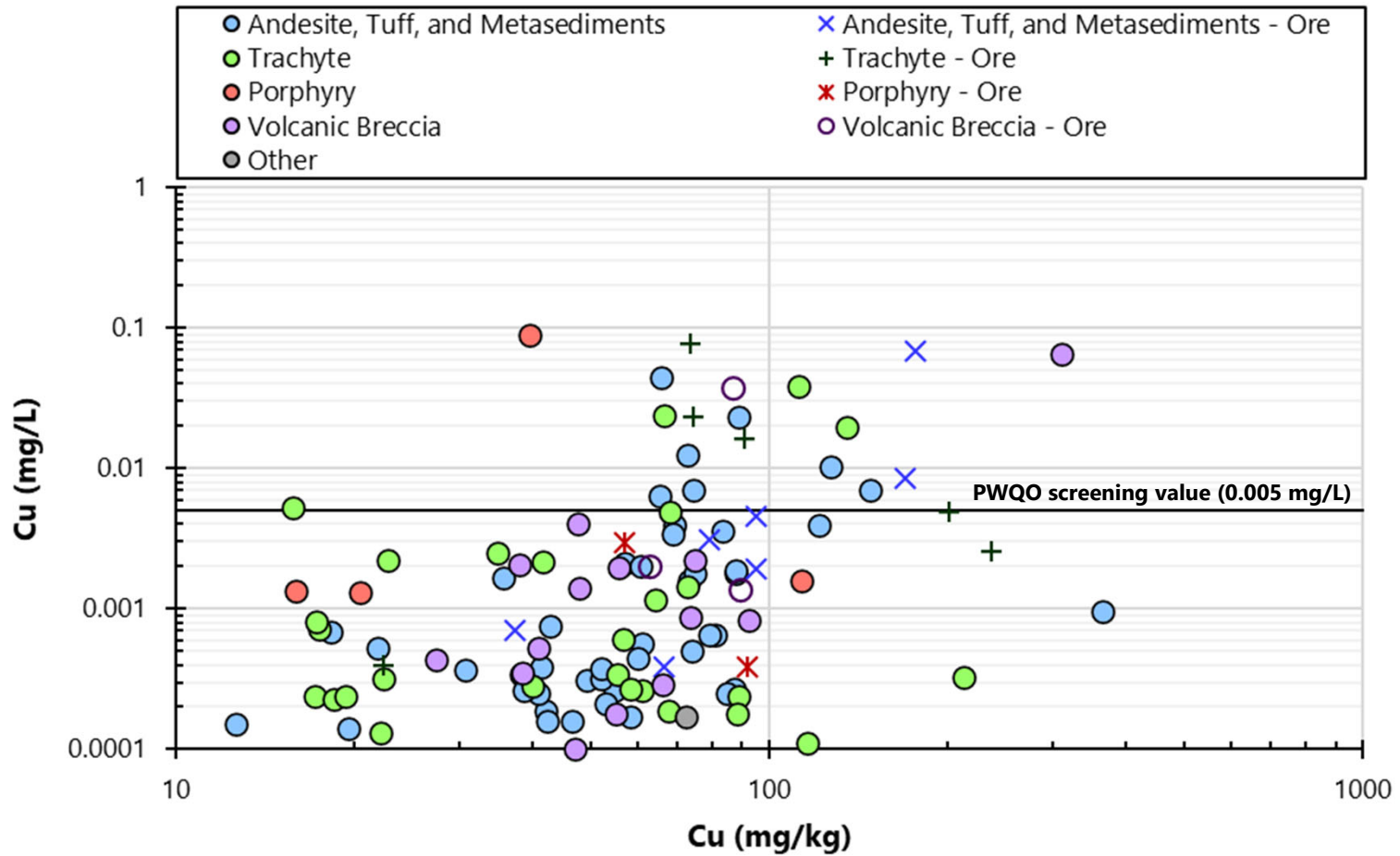
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-13

SFE Leachable vs. Solid Copper Content



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

Screening values are for comparison purposes only and hold no regulatory significance.

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wood.

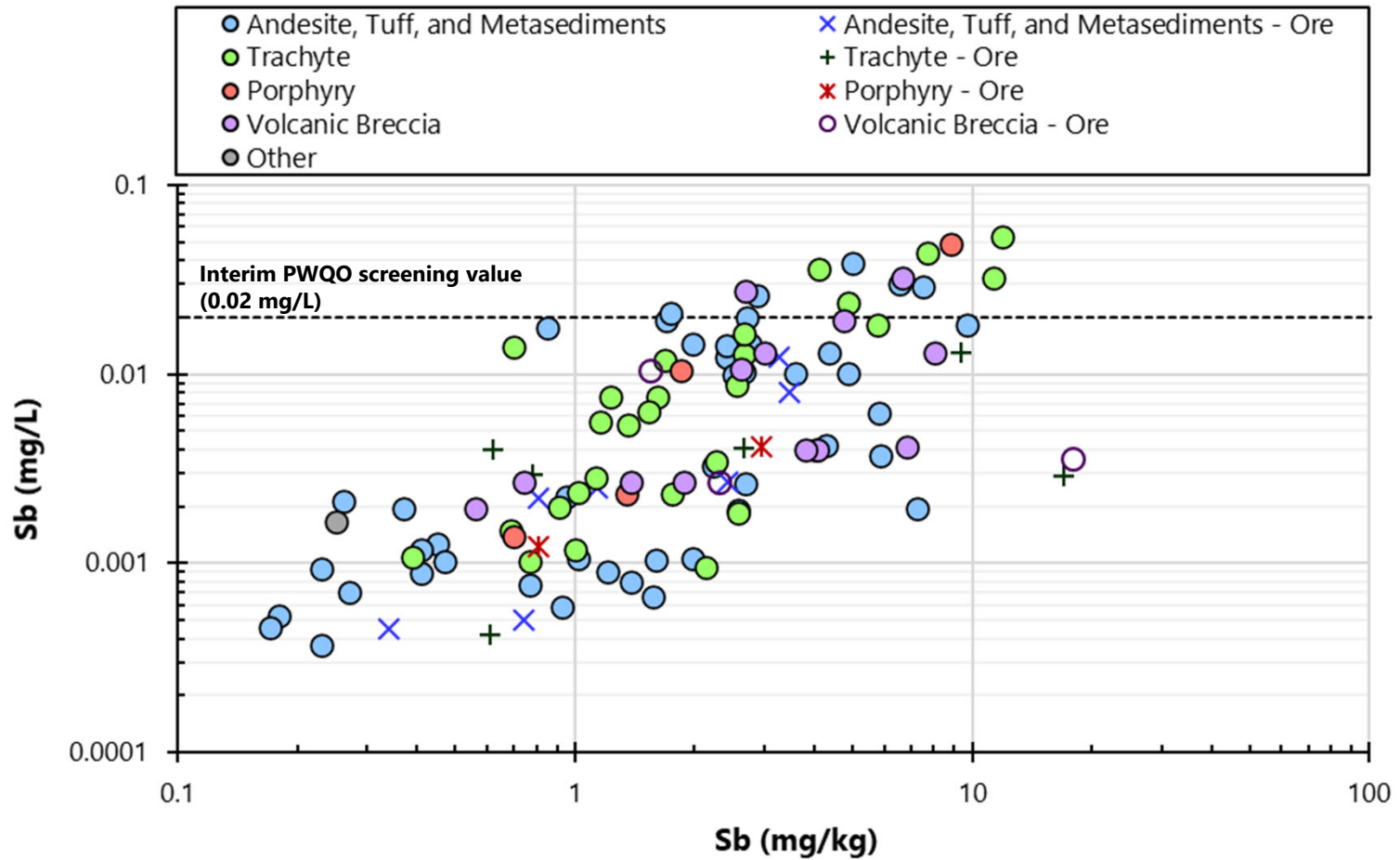
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-14

SFE Leachable vs. Solid Antimony Content



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

Screening values are for comparison purposes only and hold no regulatory significance.

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Red Lake District, Ontario

wood.

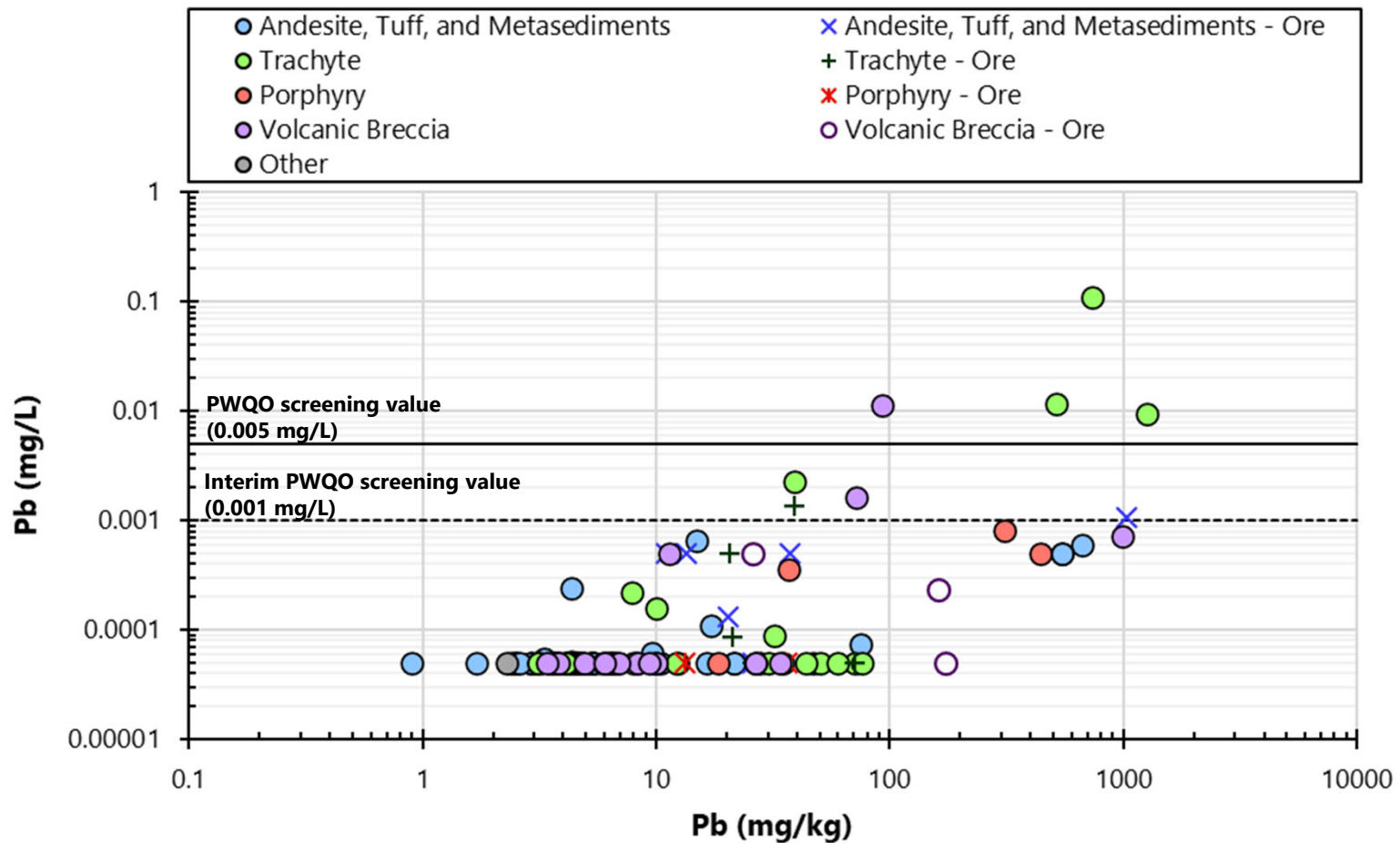
Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-15

SFE Leachable vs. Solid Lead Content



Classification of mine rock and ore-grade materials based on a cutoff grade of 0.4 g/t Au.

Screening values are for comparison purposes only and hold no regulatory significance.

Static Geochemical Testing Baseline Report

Springpole Gold Project
Red Lake District, Ontario



Date: Dec. 2021

Project: ONS2104

By: AK, KG

Figure 4-16

5.0 KEY FINDINGS

5.1 Acid Rock Drainage Potential

Sulphur concentrations in the samples ranged from below detection (i.e., 0.005%) to 10%. Mine rock samples generally had lower sulphur contents (median 0.9% sulphur) than samples classified as ore-grade materials (median 3% sulphur), however, numerous mine rock samples had high sulphur contents, similar to ore-grade materials. Samples from the Portage Zone generally had higher sulphur contents (median of 1.2% in the mine rock and 3.3% in ore-grade materials) than samples from the East Extension Zone (median 0.60% in the mine rock and 2.1% for ore-grade materials) and Camp Zone (median 0.5% and 2.2% in the mine rock and ore-grade materials, respectively).

Sulphide represented the predominant sulphur species in the samples. Pyrite was the only sulphide mineral present in the samples based on mineralogical testing and overall geologic observations for the Project.

The neutralization potential content of the samples was variable, ranging from -1 to 546 kg CaCO₃/t (median 126 kg CaCO₃/t) for mine rock samples and 0.10 to 407 kg CaCO₃/t (median 16 kg CaCO₃/t) for the ore-grade samples. The samples formed two distinct groups based on their NP content, whereby one group of samples had a low NP content (approximately 10 kg CaCO₃/t, ranging from -1 to 20 kg CaCO₃/t) and the other group of samples had a higher NP content (approximately 200 kg CaCO₃/t, ranging from approximately 50 kg CaCO₃/t to 500 kg CaCO₃/t).

- Carbonate neutralization potential was typically similar to or slightly lower than the neutralization potential content for samples with a higher NP content (e.g., NP >50 kg CaCO₃/t), indicating that most of the NP was present as carbonate minerals in these samples. Mineralogical testing confirmed the presence of calcite and dolomite.
- The samples with lower NP content (e.g., NP <20 kg CaCO₃/t) generally had low levels of CarbNP (<10 kg CaCO₃/t), suggesting that non-carbonate minerals comprised most of the NP in these samples. A few samples with a low NP content had notably elevated levels of carbonate NP, suggesting that these samples may contain non-net neutralizing carbonate minerals. Mineralogical testing identified the presence of low levels of siderite in some samples.
- Overall, the low NP content group of samples were almost exclusively from the Portage Zone, whereas the higher NP content group included samples from the Portage, East Extension, and Camp Zones. Samples of the andesite, tuff, and metasediments rock type were generally among the higher NP group, however, there were generally no consistent trends between NP content and rock type. Geospatial factors governing the NP content of the rock from the various Zones is not currently well understood. At present, it is hypothesized that the low NP rock from the Portage Zone is associated with the porphyry-style mineralization and related advanced argillic alteration unique to this Zone of the deposit, with the higher NP rock from the Portage, East Extension, and Camp Zones associated with the lode gold / epithermal gold vein style mineralization in these Zones.

Over half of the samples (54%) from the Portage Zone were classified as PAG (NPR <2). This included 46% of the mine rock samples and 85% of the ore-grade samples. Approximately 30% of these samples had low levels of NP (e.g., NP < 10 kg CaCO₃/t) and have the potential for rapid acid onset following exposure.

Most mine rock samples from the East Extension (89%) and Camp (84%) Zones were classified as NPAG (NPR >2). 67% and 78% of ore-grade samples from the East Extension and Camp Zones were classified as NPAG (NPR >2) respectively.

Net acid generation pH test results were consistent with ABA test results for most samples. However, some samples (22% of the tested samples) were classified as NPAG by the net acid generation pH test and PAG



by ABA. These samples typically had high levels of sulphur (i.e., >2% sulphur) and their classification as NPAG may be a result of incomplete oxidation of sulphur in the single addition net acid generation test.

5.2 Metal Leaching

The elemental content of samples was screened against ten times the average crustal abundance values (Price 1997). Samples with elemental concentrations greater than these screening values are considered to be enriched in those elements. The results of this analysis identified that the concentration of most metals were below ten times crustal abundance screening values, except for several metals including arsenic, selenium, molybdenum, silver, antimony, lead and cadmium.

Most mine rock samples (70%) and ore-grade samples (80%) had arsenic concentrations greater than the screening value for arsenic. In general arsenic concentrations were higher in samples from the East Extension Zone and Camp Zone compared to the Portage Zone. Overall arsenic concentrations were not notably elevated in the samples, with median concentrations on the order of 30 mg/kg and up to 1,200 mg/kg.

Approximately 30% of the mine rock samples had concentrations of selenium, molybdenum, silver and antimony that were greater than the respective screening values for these elements. On the order of 75 to 80% of the ore-grade samples were enriched in selenium, molybdenum, and silver, whereas 35% of the ore-grade samples were enriched in antimony. Less than 10% of the samples were enriched in lead and cadmium, and there were isolated occurrences (<5% of samples) of enrichment of mercury, tungsten, chromium, copper, thallium, uranium, and zinc in the samples.

SFE leachate results indicated that arsenic may be a parameter of potential interest under short term neutral leaching conditions, with approximately 40% of the samples being higher than the interim PWQO value for arsenic when compared for screening purposes. Few samples (4%) had arsenic concentrations greater than the PWQO value. Several other metals including antimony, cobalt, copper, cadmium, and lead have concentrations greater than their respective PWQO screening values in the SFE leachates for approximately 10 to 20% of the samples. Kinetic testing is underway to provide further information on the potential for the release of arsenic and other metals from the rock.

Net acid generation leachate results indicated that aluminum, cadmium, chromium, cobalt, copper, iron, lead, nickel, silver, thallium, uranium, vanadium, and zinc may be of potential interest under acidic leaching conditions.



6.0 CLOSING

This Geochemical Testing Baseline Report was prepared for First Mining Gold Corp. by Wood. The quality of information, conclusions and scheduling estimates contained herein is consistent with the level of effort involved in Wood's services and based on i) information available at the time of preparation; ii) data supplied by outside sources; and iii) the assumptions, conditions and qualifications set forth in this report.

Should you have any questions, please do not hesitate to contact either Mark Ruthven at (416) 524-5928 or Kristen Gault at (647) 402-3089.

Yours truly,

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7.0 REFERENCES

- AGP Mining Consultants Incorporated (AGP). (2021). NI 43-101 Technical Report and Pre-Feasibility Study on the Springpole Gold Project, Ontario, Canada. Prepared for First Mining Gold Corporation by AGP Mining Consultants Incorporated. January 20, 2021.
- AMIRA (2002). ARD Test Handbook. Prepared by Ian Wark Research Institute and Environmental Geochemistry International Pty Ltd. May 2002.
- British Columbia Ministry of Energy and Mines (MEM). (1998). Policy for Metal Leaching and Acid Rock Drainage at Minesites in British Columbia. Ministry of Energy and Mines and Ministry of Environment, Lands and Parks. August 1998.
- First Mining Gold Corp. (FMG). (2017). Assessment Report on the 2016-2017 Diamond Drilling Program and Metallurgical Study. First Mining Finance Corp. December 22, 2017.
- KCC Geoconsulting (KCC). (2020). Springpole Project: Geochemical Characterization Program Update. Prepared for Gold Canyon Resources Inc. January 11, 2021.
- Mine Environment Neutral Drainage (MEND). (2009). Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. MEND Report 1.20.1. December 2009.
- Minesite Drainage Assessment Group (MDAG). (2012). Draft #2 Springpole Lake Gold Project – First Round of Core Samples for the Prediction of Minesite-Drainage Chemistry and Metal Leaching and Acid Rock Drainage (ML-ARD). Minesite Drainage Assessment Group. September 13, 2012.
- Price (1997). Draft Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Mine Sites in British Columbia. April 1997.
- SRK (2012). Mineral Resource Update for the Springpole Gold Project, NW Ontario, Canada. Prepared for Gold Canyon Resources Inc by SRK Consulting (Canada) Incorporated. Reference number 2CG026.000. November 30, 2012.
- Wood Environment & Infrastructure Americas, a division of Wood Canada Limited (Wood). (2021). Appendix K-2 Kinetic Geochemical Testing Baseline Report. Springpole Gold Project. Project #ONS2104. Prepared for First Mining Gold Corp. February 2022. *IN: First Mining Gold Corp. (FMG). 2022. Environmental Impact Statement for the Springpole Gold Project. Appendix S-1. Submitted to the Impact Assessment Agency of Canada. Ontario. 2022.*





Appendix A

Analytical Methods



Appendix A – Description of Analytical Methods

A full summary of analytical methods used to generate data for this report are outlined below. Additional information including detailed method codes, sample hold times, and laboratory QA/QC can be found in laboratory certificates of analysis provided in Appendix D.

Acid Base Accounting

The most significant risk factor for metal leaching is ARD since metal loads and mobility for many elements increase dramatically at low (acidic) pH. The most common source of ARD is oxidation of sulphide-bearing rock. The accepted approach for assessing future ARD risk is acid base accounting (ABA). ABA assesses the potential for a sample to generate acidity by determining the balance between acid producing (e.g., iron sulphide) and neutralizing minerals in a sample.

ABA testing includes a number of complementary tests as described below. Ultimately, the ARD potential of a sample is determined by measuring the sample's neutralization potential (NP) and acid potential (AP) through standardized testing and assumptions (MEND 2009). The ratio of the NP to the AP is referred to as the neutralization potential ratio (NPR). NPR values are assessed on the criteria provided in Table A-1 as identified in MEND (2009). For initial screening for Springpole, the threshold separating potentially acid-generating (PAG) rock from non-potentially acid-generating (NPAG) rock was an NPR value of 2. This value is generally accepted as industry best practice.

Table A-1: ARD Classification based on ABA Testing

ARD Classification ^A	Screening Criteria	Implications
PAG	NPR < 1	Materials are likely acid generating
PAG	1 < NPR < 2	Acid generating potential of the material is uncertain.
NPAG	NPR > 2	Materials have a low probability of becoming acid generating

(A) MEND 2009

Paste pH

Paste pH is a method used to assess the current balance of acidity / alkalinity of a sample. The paste pH is measured from the supernatant following mixing of one part pulverized sample and one part deionized water. Analysis of pH is useful for estimating weathering and leaching conditions and detecting samples with no reactive neutralizing minerals or a surplus of acidic soluble constituents. pH is a principal factor in both primary mineral reaction rates and secondary mineral solubility and therefore can have a large effect on drainage chemistry. Solid sample pH values measured by most laboratories are reported as paste pH and are measurements made on the mixtures of water and pulverized sample.

Forms of Sulphur and Acid Potential

Sulphur in a geologic sample can be represented in several forms, including sulphide, acid-leachable sulphate, acid-insoluble sulphate, organic sulphur, and elemental sulphur. ABA testing for Springpole consisted of the analysis of total sulphur, acid-leachable sulphate sulphur, and sulphide sulphur. Total sulphur in the samples was determined by a Leco analyser. Sulphate sulphur was determined by dilute hydrochloric acid digestion and colorimetry. Sulphide sulphur was determined by difference (total sulphur minus sulphate sulphur).

Acid Potential (AP) is a measure of a samples' potential to generate acidity from sulphur-bearing minerals and is generally attributed to the oxidation of sulphide minerals. The Maximum Potential Acidity (MPA) is a more conservative term that assumes all sulphur in a sample is available to generate acidity. For this work, AP was determined using the calculated sulphide sulphur value (determined by difference between total sulphur and sulphate analyses).

Forms of Neutralization Potential

Neutralization Potential (NP) is a measure of the ability of a sample to neutralize acid. Two complimentary methods were used to assess the sample NP; namely, the Sobek method and measurement of carbonate carbon based on the analysis of total inorganic carbon. The Sobek NP method (hereafter NP) measures the ability of the sample to neutralize a known volume of acid for a short exposure period. Measurement of total inorganic carbon (by hydrochloric leach and Leco analyser) was used to determine carbonate neutralization potential of the samples (hereafter Carb NP).

For samples with only calcium carbonate minerals present (e.g., calcite and dolomite), Carb NP is a measure of the most readily available neutralization potential in a sample. However, Carb NP may overestimate available neutralization potential when iron carbonates such as siderite (FeCO_3) and ankerite ($\text{Ca}(\text{Fe},\text{Mg},\text{Mn})(\text{CO}_3)_2$) are present. The iron carbonate minerals can be slower to react and the iron fractions of these minerals (approximately 100% of siderite and 50% of ankerite) provide no net acid neutralization capacity under oxidizing conditions. Thus, careful interpretation of neutralization potential results is required. The type of carbonate minerals can be supported by mineralogical analysis where necessary (e.g., R-XRD).

Neutralization Potential Ratio

The ratio of NP/AP (NPR) is a widely accepted criterion to characterize the potential of geologic materials to produce ARD. Values less than one indicated that the AP exceeds NP, and values greater than one indicate that a sample has excess NP. As previously described, an initial screening value separating PAG rock from NPAG is an NPR value of 2. Values of NPR between 1 and 2 are considered to have uncertain acid generating potential, whereas rock with $\text{NPR} < 1$ is considered to be likely acid generating.

CarbNP/AP (or Carb NPR) is a similar measure to NPR but is based on the carbonate content of the sample. In the absence of iron carbonates, this generally provides more conservative screening guidance for PAG rock, by assuming the only available neutralization potential is from calcium and magnesium carbonates. If iron carbonates are present, then this ratio may overestimate the calcium and magnesium carbonates. If iron carbonates are present, then this ratio may overestimate the effective CarbNP and lead to incorrect categorization of PAG rock.

Net Acid Generation Test

Following completion of ABA and metals analysis, a subset of samples was tested by more detailed static testing methods including single-addition NAG testing.

The NAG test is a complimentary test to ABA which provides an assessment of the potential of a sample to generate acid (AMIRA 2002). NAG tests use hydrogen peroxide to rapidly oxidize sulphide minerals in a sample and determine if a sample has enough neutralization capacity to buffer the acidity generated during sulphide oxidation. Approximately 2.5 grams (g) of pulverized sample was reacted with 250 millilitres (mL) of 15% hydrogen peroxide at room temperature until effervescence ceased. The sample was then heated for a minimum of two hours and boiled rapidly for several minutes to decompose the remaining peroxide. Deionized water was added to the sample volume to maintain a volume of 250 mL. The resulting pH of the solution is called the NAG pH.

Values for NAG pH greater than 4.5 indicate that a sample has little potential to produce net acidity in the future, whereas values less than 4.5 suggest that the sample has the potential to produce net acidity and ARD at some point in the future (AMIRA 2002). The NAG test results are reviewed in conjunction with the ABA test results to confirm sample classification.

Metals / Elemental Content

An understanding of the minor and trace element characteristics of the rock mass being assessed is important since it is enhanced metal release and mobility that is the primary concern of ARD. In addition, certain elements may also exhibit leaching under neutral drainage conditions.

Aqua Regia Digestion with ICP-MS/OES

Elemental analysis was used to quantify the metals by aqua regia digestion followed by an ICP-MS/OES scan. Aqua regia digestion is considered a near total digestion for most minor and trace elements, since most minerals in the rocks are dissolved (including sulphides and carbonates), with the exception of some resistant minerals such as silicates that may only be partially digested. Dissolution of environmentally significant metal phases is generally achieved by this technique.

Data Screening

Chemical extraction and analysis is used to quantify the concentration of elements in samples but does not provide a direct assessment of metal leaching potential. There are no regulatory standards that apply directly to the elemental content of mine rock or ore-grade materials in relation to a risk of metal leaching. In the absence of defined threshold values, the elemental content of the collected mine rock and ore-grade samples was qualitatively evaluated against the average continental crust values presented by Price (1997). For screening purposes, samples with more than 10x the average crustal abundance for the given element were considered to be enriched. Elemental content testing and the above screening approach holds no regulatory significance and does not provide a direct assessment of mine drainage quality.

Leachable Metals

In addition to assessing possible future metal leaching by identifying the risk of ARD, the risk of short-term metal leaching has been further assessed by completion of empirical leach testing. For Springpole, shake flask extraction (SFE; MEND 2009) and NAG leachate testing (AMIRA 2002) was completed on a subset of

samples. The selected samples generally included major project lithologies. A range of elemental content values were also included in the sample set tested by short term leaching tests.

Shake Flask Extraction Test

Shake Flask Extraction (SFE) testing is used to assess the potential release of soluble metals during the initial stages of weathering. For Springpole, the SFE test was conducted using a 3:1 deionized water to solid ratio agitated for 24 hours, as described in MEND (2009). The leachates were analysed for pH, conductivity, hardness, sulphate, and dissolved metals.

NAG Leachate Test

Analysis of the leachate from the NAG pH test described above was also completed to identify potential parameters which may be of interest for mine rock under net-acidic conditions. These results provide only a total metal release under complete oxidation of the sulphide content of a sample and should not be interpreted as a direct indicator of water quality. The leachates were analysed for pH, conductivity, hardness, sulphate, and dissolved metals.

Data Screening

For screening purposes, leachable metals data were reviewed in relation to Provincial Water Quality Objective (PWQO) values for the protection of aquatic life in receiving waters. Screening of results in comparison of PWQO included the interim as well as prescribed (in-place) values. PWQO guidelines, which are related to the pH, hardness, and alkalinity of receiving water, were based on the most conservative values, as information about receiving environments was unavailable at the time of report preparation. Parameters that were greater than their respective PWQO values may be identified as parameters of potential interest. However, it is recognized that leachate concentrations produced by empirical laboratory tests like SFE, and NAG leachate testing imply neither compliance nor non-compliance with the specified standard or objective, and do not directly represent mine water quality.

Mineralogy

Mineralogy of mine rock and ore-grade materials is fundamental to the understanding of ML/ARD potential. As such supporting work was conducted to identify major and minor minerals, including those potentially involved in acid-generating and neutralizing reactions.

Mineralogical analysis was conducted by X-Ray Diffraction with Rietveld refinement (R-XRD). This technique provides a semi-quantitative to quantitative assessment of the mineral composition of a sample. A sample split is ground to less than 10 micrometers (microns, μm) and analyzed as a random powder mount using an X-Ray diffractometer equipped with a step-scanning goniometer. The results reported represent the relative amounts of crystalline mineral phases in the mounted specimens normalized to 100%. This method is effective at identifying crystalline phases present in abundance greater than a few weight percent. With favorable peak profiles and minimal overlapping peaks, phases may be detected at less than one weight percent.

R-XRD provides information on the major and minor mineral phases in a sample, which can be used to improve the understanding of the forms of potentially acid generating and acid neutralizing minerals.



Appendix B

Static Testing Results



Table B-1. Acid Base Accounting Results



Table with columns: Sample ID, Classification, Final Lithology Group, Zone, Drillhole, From, To, Data Source, Paste pH, Total Sulphur, Sulphate Sulphur, Sulphide Sulphur, MPA, AP, Sobek NP, Fizz Rating, Total Carbon, Total Inorganic Carbon, CarbNP, NPR, CarbNPR. It contains detailed acid base accounting data for various samples, including units, ore-grade materials, and mine rock.

- (A) Total sulphur measured by Leco analyzer
(B) Sulphate sulphur measured by HCl leach. A lower detection limit of 0.005% was used to analyze samples collected by MDAG (2012).
(C) Sulphide sulphur calculated as the difference between total sulphur and sulphate sulphur.
(D) MPA calculated as Total S *31.25
(E) AP calculated as Sulphide S * 31.25
(F) Neutralization potential measured by the standard Sobek method
(G) Total carbon measured by Leco analyzer
(H) Total inorganic carbon measured using HCl leach and CO2 coulometry
(I) Carbonate neutralization potential based on TIC
(J) Neutralization potential ratio, NP/AP
(K) Carbonate neutralization potential ratio, CarbNP/AP



Table B-1. Acid Base Accounting Results



Sample ID	Classification	Final Lithology Group	Zone	Drillhole	From	To	Data Source	Paste pH	Total Sulphur ^(A)	Sulphate Sulphur ^(B)	Sulphide Sulphur ^(C)	MPA ^(D)	AP ^(E)	Sobek NP ^(F)	Fizz Rating	Total Carbon ^(G)	Total Inorganic Carbon ^(H)	CarbNP ^(I)	NPR ^(J)	CarbNPR ^(K)
					m	m		pH Units	%	%	%	kg CaCO ₃ /t	kg CaCO ₃ /t	kg CaCO ₃ /t	Unity	%	%	kg CaCO ₃ /t	NP/AP	CarbNP/AP
R0017910	Mine Rock	VBX	East Extension	BL-0344	20.54	21.31	KCC (2020)	9.4	0.054	0.020	0.034	1.7	1.1	227	Strong	--	2.0	166	214	156
R0017918	Ore-Grade Materials	VBX	East Extension	BL-0326	24.44	24.87	KCC (2020)	8.2	5.1	0.040	5.0	159	158	202	Strong	--	2.2	183	1.3	1.2
R0017919	Mine Rock	VBX	East Extension	BL-0326	47.91	48.59	KCC (2020)	9.5	0.32	0.030	0.29	10.0	9.0	241	Moderate	--	2.2	181	27	20
R0017921	Mine Rock	VBX	East Extension	BL-0327	10.12	10.82	KCC (2020)	8.9	0.87	0.030	0.84	27	26	140	Strong	--	1.4	119	5.3	4.5
R0017922	Mine Rock	VBX	East Extension	BL-0327	75.71	76.2	KCC (2020)	8.9	0.71	0.020	0.69	22	22	73	Strong	--	0.76	63	3.4	2.9
R0017923	Mine Rock	VBX	East Extension	BL-0331	15.94	16.76	KCC (2020)	8.2	6.4	0.040	6.4	200	198	156	Strong	--	2.1	173	0.79	0.87
R0017925	Ore-Grade Materials	VBX	East Extension	BL-0328	24.69	25.24	KCC (2020)	8.8	0.95	0.040	0.91	30	28	150	Strong	--	1.5	128	5.3	4.5
R0017926	Mine Rock	VBX	East Extension	BL-0328	50.99	52.06	KCC (2020)	8.8	0.65	0.030	0.62	20	19	118	Strong	--	1.1	95	6.1	4.9
R0017928	Mine Rock	VBX	East Extension	BL-0330	37.34	38.1	KCC (2020)	8.2	4.7	0.040	4.6	146	145	162	Strong	--	2.0	170	1.1	1.2
R0017940	Mine Rock	VBX	East Extension	BL-0345	33.83	34.81	KCC (2020)	9.0	0.58	0.030	0.55	18	17	141	Strong	--	1.7	140	8.1	8.1
W-013	Ore-Grade Materials	VBX	Portage	PM-DH-02	200	201	Wood (2021)	6.6	5.0	0.040	4.9	155	154	9.2	None	0.52	<0.020	1.7	0.060	0.011
W-018	Mine Rock	VBX	Portage	SM20-001	150	151	Wood (2021)	7.5	2.7	0.030	2.7	84	83	4.0	None	0.020	<0.020	1.7	0.048	0.020
W-021	Ore-Grade Materials	VBX	Portage	PM-DH-03	97	98	Wood (2021)	7.8	3.4	<0.010	3.4	106	106	3.8	None	0.080	<0.020	1.7	0.036	0.016
W-024	Mine Rock	VBX	Portage	SM20-002	100	101	Wood (2021)	9.0	0.50	<0.010	0.49	16	15	136	Strong	1.6	1.5	122	8.8	7.9
W-028	Ore-Grade Materials	VBX	Portage	SM20-002	301	302	Wood (2021)	8.3	<0.010	<0.010	<0.010	0.31	0.31	5.8	None	0.030	<0.020	1.7	19	5.3
W-031	Mine Rock	VBX	Portage	SM20-001	50	51	Wood (2021)	8.4	2.0	0.030	2.0	64	63	68	Strong	0.68	0.50	42	1.1	0.66
W-032	Mine Rock	VBX	Portage	SP11-088	9	10	Wood (2021)	8.5	4.2	0.030	4.1	130	129	119	Strong	1.4	0.90	75	0.92	0.58
W-037	Mine Rock	VBX	Portage	SM20-002	50	51	Wood (2021)	8.9	0.86	0.030	0.83	27	26	103	Strong	1.2	1.0	83	4.0	3.2
W-038	Mine Rock	VBX	Portage	SP11-088	249	250	Wood (2021)	8.8	2.7	0.040	2.6	84	83	136	Strong	1.6	1.1	95	1.6	1.2
W-043	Mine Rock	VBX	Portage	SM20-002	199	200	Wood (2021)	7.9	3.4	0.030	3.4	107	106	16	Moderate	0.12	0.070	5.8	0.15	0.055
W-045	Ore-Grade Materials	VBX	Portage	SM20-002	355	356	Wood (2021)	8.6	1.5	0.040	1.5	47	45	6.9	None	0.32	<0.020	1.7	0.15	0.037
W-052	Mine Rock	VBX	Camp	SP12-135	42	43.5	Wood (2021)	8.6	4.1	0.030	4.0	127	126	150	Moderate	1.9	1.3	108	1.2	0.86
W-053	Mine Rock	VBX	Portage	SP11-088	300	301	Wood (2021)	8.5	2.7	0.030	2.6	83	83	15	None	0.14	0.040	3.3	0.18	0.040
W-058	Mine Rock	VBX	Camp	SP12-132	24	26	Wood (2021)	9.4	0.23	0.030	0.20	7.2	6.3	82	Moderate	1.1	0.91	76	13	12
W-060	Mine Rock	VBX	Camp	SP12-132	54	55.4	Wood (2021)	8.3	1.0	0.030	1.0	32	31	101	Moderate	1.3	1.1	88	3.2	2.8
W-065	Mine Rock	VBX	Camp	SP12-135	21	23	Wood (2021)	8.5	2.9	0.030	2.9	91	90	103	Moderate	1.5	1.0	86	1.1	0.95
W-067	Mine Rock	VBX	Camp	SP12-135	3	5	Wood (2021)	8.6	0.41	<0.010	0.40	13	13	226	Strong	3.5	3.2	268	18	21
W-079	Mine Rock	VBX	Camp	SP12-132	12	14	Wood (2021)	8.9	0.59	0.040	0.55	18	17	108	Moderate	1.6	1.4	116	6.3	6.7
W-107	Mine Rock	VBX	Portage	SP12-123	351	353	Wood (2021)	8.3	2.3	0.030	2.2	71	70	13	None	0.030	<0.020	1.7	0.18	0.024
W-109	Mine Rock	VBX	Portage	SP12-123	393	394	Wood (2021)	7.8	3.9	0.040	3.8	120	119	7.2	None	0.060	<0.020	1.7	0.060	0.014
W-123	Mine Rock	VBX	Portage	SP12-113	201	202	Wood (2021)	8.8	2.2	0.020	2.1	67	67	185	Moderate	2.5	2.0	164	2.8	2.5
W-132	Ore-Grade Materials	VBX	Portage	SG13-201	185	186	Wood (2021)	8.6	2.9	0.030	2.9	91	90	15	Slight	0.61	0.020	1.7	0.17	0.019
W-134	Mine Rock	VBX	Portage	SG13-200	182	184	Wood (2021)	8.6	1.3	0.030	1.3	41	40	15	None	0.030	<0.020	1.7	0.36	0.041
W-139	Mine Rock	VBX	Portage	SP12-113	150	151	Wood (2021)	8.5	6.6	0.030	6.6	207	206	116	Moderate	1.6	0.89	74	0.56	0.36
W-164	Ore-Grade Materials	VBX	Portage	PM-DH-04	249	250	Wood (2021)	8.9	6.2	0.030	6.2	194	194	94	Strong	0.80	0.39	33	0.48	0.17
W-173	Mine Rock	VBX	Portage	SG13-200	200	202	Wood (2021)	7.2	4.6	0.030	4.6	145	144	17	None	0.10	<0.020	1.7	0.12	0.012
W-196	Mine Rock	VBX	Portage	SG13-204	154	156	Wood (2021)	8.9	1.7	<0.010	1.7	53	53	144	Strong	1.8	1.3	111	2.7	2.1
W-206	Mine Rock	VBX	East Extension	SP11-067	20	21	Wood (2021)	9.4	0.53	0.030	0.50	17	16	133	Moderate	1.7	1.4	118	8.5	7.6
W-208	Mine Rock	VBX	East Extension	SP11-067	33	34	Wood (2021)	9.3	0.90	<0.010	0.89	28	28	123	Strong	1.5	1.1	95	4.4	3.4
W-209	Ore-Grade Materials	VBX	Portage	PM-DH-04	311	311.8	Wood (2021)	7.2	6.5	0.030	6.4	202	201	8.9	None	0.23	<0.020	1.7	0.044	0.0083
W-215	Ore-Grade Materials	VBX	Portage	SG13-205	254	255.5	Wood (2021)	9.2	2.8	0.030	2.8	87	86	162	Strong	2.2	1.4	118	1.9	1.4
W-218	Mine Rock	VBX	Portage	SP11-055	50	51	Wood (2021)	8.2	4.3	0.030	4.3	134	133	168	Strong	0.99	0.57	48	1.3	0.36
W-225	Ore-Grade Materials	VBX	Portage	SG13-205	28	30	Wood (2021)	8.4	1.8	0.020	1.8	57	56	72	Strong	0.86	0.44	37	1.3	0.65
W-265	Mine Rock	VBX	Portage	SP12-185	147	149	Wood (2021)	9.0	1.4	0.030	1.4	44	43	178	Strong	2.6	2.1	178	4.1	4.1
W-311	Mine Rock	VBX	Portage	SM20-003	38	39	Wood (2021)	8.1	1.5	0.030	1.5	47	46	144	Strong	1.6	1.4	116	3.1	2.5
M112016	Mine Rock	VBX	East Extension	SM21-001	14	15	Wood (2021)	9.5	0.020	0.020	<0.010	0.63	0.31	145	Moderate	1.9	1.6	130	463	416
M112049	Mine Rock	VBX	East Extension	SM21-001	41	42	Wood (2021)	9.0	2.8	0.020	2.8	87	86	138	Strong	1.6	1.5	127	1.6	1.5

- (A) Total sulphur measured by Leco analyzer
- (B) Sulphate sulphur measured by HCl leach. A lower detection limit of 0.005% was used to analyze samples collected by MDAG (2012).
- (C) Sulphide sulphur calculated as the difference between total sulphur and sulphate sulphur.
- (D) MPA calculated as Total S *31.25
- (E) AP calculated as Sulphide S * 31.25
- (F) Neutralization potential measured by the standard Sobek method
- (G) Total carbon measured by Leco analyzer
- (H) Total inorganic carbon measured using HCl leach and CO₂ coulometry
- (I) Carbonate neutralization potential based on TIC
- (J) Neutralization potential ratio, NP/AP
- (K) Carbonate neutralization potential ratio, CarbNP/AP



Table B-2. Acid Base Accounting Results Statistical Summary

Statistical Parameter	Paste pH	Total Sulphur ^(A)	Sulphate Sulphur ^(B)	Sulphide Sulphur ^(C)	MPA ^(D)	AP ^(E)	Sobek NP ^(F)	Total Carbon ^(G)	Total Inorganic Carbon ^(H)	CarbNP ^(I)	NPR ^(J)	CarbNPR ^(K)	Classification (NPR) ^(L)	Classification (CarbNPR) ^(L)	
	pH Units	%	%	%	kg CaCO ₃ /t	kg CaCO ₃ /t	kg CaCO ₃ /t	%	%	kg CaCO ₃ /t	NP/AP	CarbNP/AP			
All Samples	Count	877	877	877	877	877	877	435	877	877	877	877	% NPAG		
	Minimum	4.0	0.0050	0.0050	0.0040	0.16	0.13	-1.1	0.020	0.020	1.7	0.0016	0.0072	58%	56%
	10 th Percentile	7.6	0.10	0.010	0.080	3.1	2.5	8.1	0.080	0.020	1.7	0.11	0.036		
	Median	8.9	1.2	0.030	1.2	37	36	119	1.4	1.2	98	3.3	2.7	% Uncertain	
	Average	8.6	1.7	0.028	1.7	53	53	113	1.4	1.2	101	2.1	1.9	11%	11%
	Standard Deviation	0.84	1.7	0.022	1.6	52	52	85	0.95	0.98	82	94	85	% PAG	
	90 th Percentile	9.5	4.3	0.040	4.2	133	131	219	2.5	2.4	203	46	39	31%	34%
	Maximum	10	10	0.30	10.0	313	312	546	4.8	5.5	459	1410	1060		
	Count	717	717	717	717	717	717	717	380	717	717	717	717	% NPAG	
	Minimum	4.0	0.0050	0.0050	0.0040	0.16	0.13	0.50	0.020	0.020	1.7	0.014	0.0074	65%	63%
10 th Percentile	7.8	0.090	0.010	0.070	2.8	2.2	10	0.12	0.040	3.3	0.18	0.077			
Median	8.9	0.90	0.030	0.87	28	27	126	1.5	1.3	109	4.6	4.0	% Uncertain		
Average	8.8	1.4	0.026	1.3	43	42	119	1.5	1.3	107	2.8	2.5	11%	10%	
Standard Deviation	0.75	1.4	0.021	1.4	44	44	80	0.98	0.93	78	103	93	% PAG		
90 th Percentile	9.5	3.5	0.040	3.4	108	107	216	2.6	2.4	203	59	52	24%	27%	
Maximum	10	10	0.30	10.0	313	312	546	4.8	5.5	459	1410	1060			
Count	160	160	160	160	160	160	160	55	160	160	160	160	% NPAG		
Minimum	4.3	0.010	0.0050	0.0080	0.31	0.25	0.10	0.020	0.020	1.7	0.0016	0.0072	26%	22%	
10 th Percentile	6.8	0.96	0.010	0.92	30	29	5.6	0.020	0.020	1.7	0.047	0.012			
Median	8.3	3.2	0.030	3.1	99	97	16	0.23	0.19	16	0.16	0.16	% Uncertain		
Average	8.1	3.2	0.033	3.2	101	100	84	0.72	0.87	73	0.84	0.73	14%	16%	
Standard Deviation	0.97	1.8	0.026	1.8	56	56	101	0.88	1.1	94	117	90	% PAG		
90 th Percentile	9.1	5.8	0.050	5.8	182	180	222	2.1	2.5	205	3.8	3.1	60%	63%	
Maximum	9.8	7.5	0.25	7.4	233	232	407	3.8	5.1	423	63	53			

(A) Total sulphur measured by Leco analyzer
 (B) Sulphate sulphur measured by HCl leach.
 (C) Sulphide sulphur calculated as the difference between total sulphur and sulphate sulphur.
 (D) MPA calculated as Total S * 31.25
 (E) AP calculated as Sulphide S * 31.25
 (F) Neutralization potential measured by the standard Sobek method
 (G) Total carbon measured by Leco analyzer
 (H) Total inorganic carbon measured using HCl leach and CO₂ coulometry
 (I) Carbonate neutralization potential based on TIC
 (J) Neutralization potential ratio, NP/AP
 (K) Carbonate neutralization potential ratio, CarbNP/AP
 (L) Classification based on guidance in MEND (2009). NPAG = NPR>2, PAG=NPR<1, Uncertain = 1<NPR<2.



Table B-3. Acid Base Accounting Results Statistical Summary (Lithology)

Statistical Parameter	Paste pH	Total Sulphur ^(A)	Sulphate Sulphur ^(B)	Sulphide Sulphur ^(C)	MPA ^(D)	AP ^(E)	Sobek NP ^(F)	Total Carbon ^(G)	Total Inorganic Carbon ^(H)	CarbNP ^(I)	NPR ^(J)	CarbNPR ^(K)	Classification (NPR) ^(L)	Classification (CarbNPR) ^(L)	
	pH Units	%	%	%	kg CaCO ₃ /t	kg CaCO ₃ /t	kg CaCO ₃ /t	%	%	kg CaCO ₃ /t	NP/AP	CarbNP/AP			
All Andesite, Tuff, and Metasediment Samples	Count	360	360	360	360	360	360	200	360	360	360	360	% NPAG		
	Minimum	5.0	0.0050	0.0050	0.010	0.16	0.31	2.6	0.020	0.020	1.7	0.014	0.0087	74%	72%
	10 th Percentile	8.2	0.080	0.010	0.060	2.5	1.9	16	0.32	0.12	9.2	0.45	0.26	% Uncertain	
	Median	9.0	0.87	0.030	0.86	27	27	146	1.7	1.6	132	5.5	4.9	% Uncertain	
	Average	8.9	1.4	0.026	1.4	44	43	142	1.7	1.5	128	3.3	3.0	11%	10%
	Standard Deviation	0.63	1.5	0.024	1.5	46	46	77	1.1	0.91	76	98	89	% PAG	
	90 th Percentile	9.5	3.8	0.040	3.7	118	117	232	2.9	2.6	216	75	70	15%	18%
	Maximum	10	6.2	0.30	6.1	192	191	407	4.8	5.1	423	591	573	% NPAG	
	Count	312	312	312	312	312	312	183	312	312	312	312	312	% NPAG	
Minimum	5.0	0.0050	0.0050	0.010	0.16	0.31	2.6	0.020	0.020	1.7	0.014	0.0092	79%	77%	
10 th Percentile	8.3	0.060	0.010	0.050	1.9	1.6	20	0.66	0.20	17	0.96	0.56	% Uncertain		
Median	9.0	0.58	0.030	0.56	18	18	147	1.7	1.6	134	8.4	7.7	% Uncertain		
Average	8.9	1.2	0.025	1.1	36	36	144	1.8	1.6	130	4.1	3.7	10%	9%	
Standard Deviation	0.61	1.3	0.023	1.3	42	41	73	1.1	0.86	72	104	95	% PAG		
90 th Percentile	9.5	3.0	0.040	2.9	93	92	232	2.9	2.6	213	87	78	11%	14%	
Maximum	10	5.9	0.30	5.9	184	183	398	4.8	4.6	382	591	573	% NPAG		
Count	48	48	48	48	48	48	48	17	48	48	48	48	% NPAG		
Minimum	6.7	0.23	0.0050	0.23	7.2	7.0	4.4	0.020	0.020	1.7	0.045	0.0087	42%	38%	
10 th Percentile	7.9	1.2	0.010	1.2	38	38	9.3	0.092	0.020	1.7	0.076	0.018	% Uncertain		
Median	8.6	3.0	0.030	2.9	92	91	122	1.1	1.2	103	1.3	1.1	% Uncertain		
Average	8.6	2.9	0.030	2.9	92	91	124	1.2	1.3	112	1.4	1.2	17%	19%	
Standard Deviation	0.63	1.5	0.028	1.4	45	45	102	0.90	1.2	100	5.9	5.3	% PAG		
90 th Percentile	9.3	4.5	0.050	4.5	141	139	230	2.4	2.8	236	4.9	4.5	42%	44%	
Maximum	9.8	6.2	0.19	6.1	192	191	407	3.8	5.1	423	32	29	% NPAG		
Count	109	109	109	109	109	109	109	62	109	109	109	109	% NPAG		
Minimum	5.2	0.020	0.0050	0.010	0.63	0.31	0.90	0.020	0.020	1.7	0.016	0.012	50%	46%	
10 th Percentile	7.5	0.10	0.0050	0.093	3.1	2.9	5.0	0.081	0.028	2.3	0.13	0.051	% Uncertain		
Median	8.9	0.89	0.020	0.86	28	27	70	1.1	0.72	59	2.6	2.2	% Uncertain		
Average	8.6	1.2	0.023	1.2	37	36	77	0.94	0.84	70	2.1	1.9	5%	8%	
Standard Deviation	0.91	1.1	0.017	1.1	36	35	82	0.70	0.92	77	50	45	% PAG		
90 th Percentile	9.5	2.8	0.040	2.7	86	85	166	1.8	1.8	151	31	29	45%	46%	
Maximum	9.8	6.7	0.10	6.7	211	210	546	2.7	5.5	459	384	360	% NPAG		
Count	109	109	109	109	109	109	109	62	109	109	109	109	% NPAG		
Minimum	5.2	0.020	0.0050	0.010	0.63	0.31	0.90	0.020	0.020	1.7	0.016	0.012	55%	50%	
10 th Percentile	7.5	0.10	0.0050	0.093	3.1	2.9	5.0	0.081	0.028	2.3	0.13	0.051	% Uncertain		
Median	8.9	0.89	0.020	0.86	28	27	70	1.1	0.72	59	2.6	2.2	% Uncertain		
Average	8.6	1.2	0.023	1.2	37	36	77	0.94	0.84	70	2.1	1.9	4%	7%	
Standard Deviation	0.91	1.1	0.017	1.1	36	35	82	0.70	0.92	77	50	45	% PAG		
90 th Percentile	9.5	2.8	0.040	2.7	86	85	166	1.8	1.8	151	31	29	41%	42%	
Maximum	9.8	6.7	0.10	6.7	211	210	546	2.7	5.5	459	384	360	% NPAG		
Count	17	17	17	17	17	17	17	9	17	17	17	17	% NPAG		
Minimum	6.5	0.038	0.010	0.0080	1.2	0.25	3.9	0.020	0.020	1.7	0.051	0.0089	18%	18%	
10 th Percentile	7.0	0.27	0.010	0.25	8.4	7.7	4.9	0.028	0.020	1.7	0.056	0.013	% Uncertain		
Median	8.1	2.0	0.030	2.0	63	63	12	0.24	0.050	4.2	0.19	0.066	% Uncertain		
Average	8.1	2.5	0.029	2.4	77	76	49	0.67	0.54	45	0.65	0.59	12%	12%	
Standard Deviation	0.83	2.0	0.014	2.0	64	64	76	0.78	0.84	70	17	14	% PAG		
90 th Percentile	9.0	5.6	0.044	5.6	176	175	173	1.9	1.6	134	26	17	71%	71%	
Maximum	9.5	6.1	0.060	6.1	192	191	229	2.9	2.9	239	57	53	% NPAG		

- (A) Total sulphur measured by Leco analyzer
- (B) Sulphate sulphur measured by HCl leach.
- (C) Sulphide sulphur calculated as the difference between total sulphur and sulphate sulphur.
- (D) MPA calculated as Total S * 31.25
- (E) AP calculated as Sulphide S * 31.25
- (F) Neutralization potential measured by the standard Sobek method
- (G) Total carbon measured by Leco analyzer
- (H) Total inorganic carbon measured using HCl leach and CO₂ coulometry
- (I) Carbonate neutralization potential based on TIC
- (J) Neutralization potential ratio, NP/AP
- (K) Carbonate neutralization potential ratio, CarbNP/AP
- (L) Classification based on guidance in MEND (2009). NPAG = NPR > 2, PAG = NPR < 1, Uncertain = 1 < NPR < 2.



Table B-3. Acid Base Accounting Results Statistical Summary (Lithology)

Statistical Parameter	Paste pH	Total Sulphur ^(A)	Sulphate Sulphur ^(B)	Sulphide Sulphur ^(C)	MPA ^(D)	AP ^(E)	Sobek NP ^(F)	Total Carbon ^(G)	Total Inorganic Carbon ^(H)	CarbNP ^(I)	NPR ^(J)	CarbNPR ^(K)	Classification (NPR) ^(L)	Classification (CarbNPR) ^(L)	
	pH Units	%	%	%	kg CaCO ₃ /t	kg CaCO ₃ /t	kg CaCO ₃ /t	%	%	kg CaCO ₃ /t	NP/AP	CarbNP/AP			
All Volcanic Breccia Samples	Count	147	147	147	147	147	147	55	147	147	147	147	% NPAG		
	Minimum	4.0	0.010	0.0050	0.010	0.31	0.31	3.1	0.020	0.020	1.7	0.036	0.0083	46%	44%
	10 th Percentile	7.3	0.27	0.010	0.26	8.5	8.1	7.2	0.068	0.020	1.7	0.10	0.025	% Uncertain	
	Median	8.7	2.0	0.030	2.0	64	63	116	1.3	1.1	95	1.9	1.5	% Uncertain	
	Average	8.5	2.2	0.031	2.1	68	67	110	1.2	1.2	99	1.7	1.5	18%	16%
	Standard Deviation	0.93	1.6	0.020	1.6	50	50	83	0.78	0.97	81	44	39	% PAG	
	90 th Percentile	9.4	4.6	0.050	4.6	144	143	223	2.3	2.4	202	18	16	36%	40%
	Maximum	9.7	6.6	0.20	6.6	207	206	380	3.5	4.1	340	463	416	% NPAG	
	Count	110	110	110	110	110	110	110	44	110	110	110	110	% NPAG	
	Minimum	4.0	0.020	0.0050	0.010	0.63	0.31	3.1	0.020	0.020	1.7	0.046	0.012	54%	54%
Volcanic Breccia Mine Rock	10 th Percentile	7.7	0.25	0.010	0.21	7.9	6.6	10	0.066	0.030	2.5	0.15	0.041	% Uncertain	
	Median	8.9	1.5	0.030	1.5	46	46	123	1.5	1.3	105	2.7	2.3	% Uncertain	
	Average	8.6	1.8	0.031	1.8	57	56	117	1.3	1.3	106	2.1	1.9	15%	12%
	Standard Deviation	0.91	1.5	0.021	1.4	45	45	78	0.85	0.94	78	50	45	% PAG	
	90 th Percentile	9.5	4.0	0.050	3.9	124	123	226	2.5	2.4	202	19	20	31%	35%
	Maximum	9.7	6.6	0.20	6.6	207	206	317	3.5	4.1	340	463	416	% NPAG	
	Count	37	37	37	37	37	37	37	11	37	37	37	37	% NPAG	
	Minimum	5.4	0.010	0.0050	0.010	0.31	0.31	3.8	0.030	0.020	1.7	0.036	0.0083	22%	16%
	10 th Percentile	6.9	1.3	0.010	1.3	41	39	6.8	0.080	0.020	1.7	0.061	0.015	% Uncertain	
	Median	8.5	3.0	0.030	3.0	94	94	72	0.52	0.39	33	0.77	0.35	% Uncertain	
Volcanic Breccia Ore-Grade Materials	Average	8.2	3.2	0.031	3.2	101	100	91	0.69	0.93	78	0.91	0.78	27%	27%
	Standard Deviation	0.91	1.6	0.013	1.6	51	50	92	0.47	1.0	85	11	8.4	% PAG	
	90 th Percentile	9.0	5.1	0.044	5.1	161	159	197	1.6	2.4	200	3.2	2.6	51%	57%
	Maximum	9.6	6.5	0.060	6.4	202	201	380	2.2	3.9	322	63	51	% NPAG	
	Count	221	221	221	221	221	221	221	103	221	221	221	221	% NPAG	
	Minimum	4.3	0.010	0.0050	0.0050	0.31	0.16	2.5	0.020	0.020	1.7	0.014	0.0072	43%	41%
	10 th Percentile	7.2	0.18	0.010	0.16	5.7	5.0	6.9	0.032	0.020	1.7	0.066	0.019	% Uncertain	
	Median	8.7	1.6	0.030	1.5	49	48	77	1.0	0.67	56	1.6	1.2	% Uncertain	
	Average	8.4	2.1	0.030	2.1	67	66	86	1.1	0.90	75	1.3	1.1	12%	10%
	Standard Deviation	0.94	1.9	0.024	1.9	59	59	77	0.83	0.89	74	86	91	% PAG	
All Trachyte Samples	90 th Percentile	9.3	5.1	0.050	5.1	159	158	189	2.3	2.2	179	28	20	45%	48%
	Maximum	9.8	7.5	0.25	7.4	233	232	278	3.5	3.3	271	784	867	% NPAG	
	Count	168	168	168	168	168	168	168	85	168	168	168	168	% NPAG	
	Minimum	4.3	0.36	0.0050	0.33	11	10	3.3	0.020	0.020	1.7	0.014	0.0072	52%	51%
	10 th Percentile	6.3	1.1	0.010	1.1	34	34	4.7	0.020	0.020	1.7	0.034	0.010	% Uncertain	
	Median	7.9	3.7	0.040	3.7	115	114	11	0.070	0.030	2.5	0.099	0.022	% Uncertain	
	Average	7.6	3.8	0.038	3.8	119	118	42	0.27	0.39	33	0.35	0.28	14%	12%
	Standard Deviation	1.1	2.0	0.035	2.0	63	63	70	0.32	0.75	63	1.0	0.88	% PAG	
	90 th Percentile	8.9	6.6	0.050	6.5	205	205	153	0.64	1.4	119	2.3	2.0	34%	38%
	Maximum	9.3	7.5	0.25	7.4	233	232	278	2.0	3.0	252	4.0	3.5	% NPAG	
Trachyte Mine Rock	Count	53	53	53	53	53	53	18	53	53	53	53	% NPAG		
	Minimum	4.3	0.36	0.0050	0.33	11	10	3.3	0.020	0.020	1.7	0.014	0.0072	13%	11%
	10 th Percentile	6.3	1.1	0.010	1.1	34	34	4.7	0.020	0.020	1.7	0.034	0.010	% Uncertain	
	Median	7.9	3.7	0.040	3.7	115	114	11	0.070	0.030	2.5	0.099	0.022	% Uncertain	
	Average	7.6	3.8	0.038	3.8	119	118	42	0.27	0.39	33	0.35	0.28	6%	6%
	Standard Deviation	1.1	2.0	0.035	2.0	63	63	70	0.32	0.75	63	1.0	0.88	% PAG	
	90 th Percentile	8.9	6.6	0.050	6.5	205	205	153	0.64	1.4	119	2.3	2.0	81%	83%
	Maximum	9.3	7.5	0.25	7.4	233	232	278	2.0	3.0	252	4.0	3.5	% NPAG	
	Count	53	53	53	53	53	53	53	18	53	53	53	53	% NPAG	
	Minimum	4.3	0.36	0.0050	0.33	11	10	3.3	0.020	0.020	1.7	0.014	0.0072	13%	11%
Trachyte Ore-Grade Materials	10 th Percentile	6.3	1.1	0.010	1.1	34	34	4.7	0.020	0.020	1.7	0.034	0.010	% Uncertain	
	Median	7.9	3.7	0.040	3.7	115	114	11	0.070	0.030	2.5	0.099	0.022	% Uncertain	
	Average	7.6	3.8	0.038	3.8	119	118	42	0.27	0.39	33	0.35	0.28	6%	6%
	Standard Deviation	1.1	2.0	0.035	2.0	63	63	70	0.32	0.75	63	1.0	0.88	% PAG	
	90 th Percentile	8.9	6.6	0.050	6.5	205	205	153	0.64	1.4	119	2.3	2.0	81%	83%
	Maximum	9.3	7.5	0.25	7.4	233	232	278	2.0	3.0	252	4.0	3.5	% NPAG	

(A) Total sulphur measured by Leco analyzer
 (B) Sulphate sulphur measured by HCl leach.
 (C) Sulphide sulphur calculated as the difference between total sulphur and sulphate sulphur.
 (D) MPA calculated as Total S *31.25
 (E) AP calculated as Sulphide S * 31.25
 (F) Neutralization potential measured by the standard Sobek method
 (G) Total carbon measured by Leco analyzer
 (H) Total inorganic carbon measured using HCl leach and CO₂ coulometry
 (I) Carbonate neutralization potential based on TIC
 (J) Neutralization potential ratio, NP/AP
 (K) Carbonate neutralization potential ratio, CarbNP/AP
 (L) Classification based on guidance in MEND (2009), NPAG = NPR>2, PAG=NPR<1, Uncertain = 1<NPR<2.



Table B-3. Acid Base Accounting Results Statistical Summary (Lithology)

Statistical Parameter		Paste pH	Total Sulphur ^(A)	Sulphate Sulphur ^(B)	Sulphide Sulphur ^(C)	MPA ^(D)	AP ^(E)	Sobek NP ^(F)	Total Carbon ^(G)	Total Inorganic Carbon ^(H)	CarbNP ^(I)	NPR ^(J)	CarbNPR ^(K)	Classification (NPR) ^(L)	Classification (CarbNPR) ^(L)
		pH Units	%	%	%	kg CaCO ₃ /t	kg CaCO ₃ /t	kg CaCO ₃ /t	%	%	kg CaCO ₃ /t	NP/AP	CarbNP/AP		
All Lamprophyre Samples	Count	8	8	8	8	8	8	8	1	8	8	8	8	% NPAG	
	Minimum	7.4	0.040	0.025	0.010	1.3	0.31	6.1	0.050	0.020	1.7	0.082	0.016	50%	50%
	10 th Percentile	7.4	0.086	0.029	0.056	2.7	1.8	7.8	0.050	0.020	1.7	0.14	0.051	% Uncertain	
	Median	8.1	0.62	0.030	0.58	19	18	12	0.050	0.095	7.9	0.65	0.44	% Uncertain	
	Average	8.4	0.97	0.037	0.93	30	29	96	0.050	1.1	91	3.3	3.1	0%	0%
	Standard Deviation	0.97	1.1	0.011	1.1	35	35	159	0.018	1.7	144	57	45	% PAG	
	90 th Percentile	9.6	2.1	0.050	2.1	66	65	331	0.050	3.8	319	73	58	50%	50%
	Maximum	9.6	3.3	0.050	3.3	104	103	396	0.050	4.0	329	167	132	% NPAG	
	Count	7	7	7	7	7	7	7	1	7	7	7	7	% NPAG	
	Minimum	7.4	0.040	0.025	0.010	1.3	0.31	6.1	0.050	0.020	1.7	0.16	0.066	57%	57%
Lamprophyre Mine Rock	10 th Percentile	7.4	0.080	0.028	0.050	2.5	1.6	8.4	0.050	0.020	1.7	0.23	0.069	% Uncertain	
	Median	8.3	0.43	0.030	0.41	13	13	13	0.050	0.16	13	1.0	1.1	% Uncertain	
	Average	8.5	0.63	0.038	0.59	20	19	108	0.050	1.2	103	5.8	5.6	0%	0%
	Standard Deviation	1.0	0.60	0.011	0.60	19	19	167	0.019	1.8	151	61	48	% PAG	
	90 th Percentile	9.6	1.4	0.050	1.3	43	42	340	0.050	3.8	320	86	69	43%	43%
	Maximum	9.6	1.6	0.050	1.5	50	48	396	0.050	4.0	329	167	132	% NPAG	
	Count	1	1	1	1	1	1	1	0	1	1	1	1	%NPAG	%PAG
	Maximum	7.9	3.3	0.030	3.3	104	103	8.5	--	0.020	1.7	0.082	0.016	0%	100%
	Count	14	14	14	14	14	14	14	5	14	14	14	14	% NPAG	
	Minimum	6.8	0.020	0.0050	0.0040	0.63	0.13	-1.1	0.43	0.020	1.7	0.0016	0.028	79%	71%
All Other Samples	10 th Percentile	7.3	0.023	0.010	0.013	0.72	0.41	21	0.52	0.13	11	0.18	0.26	% Uncertain	
	Median	8.8	0.48	0.030	0.47	15	15	146	0.67	1.5	125	9.9	8.5	% Uncertain	
	Average	8.6	1.7	0.028	1.6	52	51	160	1.00	1.6	134	3.1	2.6	0%	7%
	Standard Deviation	0.78	2.7	0.018	2.7	86	86	120	0.59	1.4	117	374	282	% PAG	
	90 th Percentile	9.2	4.0	0.040	4.0	126	125	340	1.7	3.6	301	269	214	21%	21%
	Maximum	9.3	10	0.070	10.0	313	312	399	1.8	4.7	393	1410	1060	% NPAG	
	Count	10	10	10	10	10	10	10	5	10	10	10	10	% NPAG	
	Minimum	6.8	0.020	0.0050	0.0040	0.63	0.13	-1.1	0.43	0.020	1.7	0.053	0.18	80%	80%
	10 th Percentile	8.2	0.020	0.0095	0.0094	0.63	0.29	62	0.52	0.35	29	0.42	0.42	% Uncertain	
	Median	8.8	0.20	0.015	0.17	6.1	5.3	133	0.67	1.4	116	25	22	% Uncertain	
Other Mine Rock	Average	8.6	1.3	0.021	1.2	39	39	120	1.00	1.1	95	3.1	2.5	0%	0%
	Standard Deviation	0.71	3.1	0.013	3.1	97	97	60	0.66	0.67	56	434	328	% PAG	
	90 th Percentile	9.2	2.0	0.040	1.9	62	61	179	1.7	1.8	149	395	319	20%	20%
	Maximum	9.2	10	0.040	10.0	313	312	202	1.8	2.0	163	1410	1060	% NPAG	
	Count	4	4	4	4	4	4	4	0	4	4	4	4	% NPAG	
	Minimum	6.9	1.1	0.030	1.1	35	34	0.10	--	0.020	1.7	0.0016	0.028	75%	50%
	10 th Percentile	7.3	1.4	0.033	1.4	43	42	82	--	0.65	54	0.82	0.55	% Uncertain	
	Median	8.6	2.6	0.040	2.6	83	81	321	--	3.2	265	4.0	3.3	% Uncertain	
	Average	8.3	2.7	0.045	2.7	84	83	260	--	2.8	231	3.1	2.8	0%	25%
	Standard Deviation	1.0	1.4	0.017	1.4	44	44	181	--	2.2	180	5.1	5.1	% PAG	
Other Ore-Grade Materials	90 th Percentile	9.1	4.0	0.061	4.0	126	125	390	--	4.6	382	8.9	8.8	25%	25%
	Maximum	9.3	4.4	0.070	4.3	136	135	399	--	4.7	393	12	11	% NPAG	

(A) Total sulphur measured by Leco analyzer
 (B) Sulphate sulphur measured by HCl leach.
 (C) Sulphide sulphur calculated as the difference between total sulphur and sulphate sulphur.
 (D) MPA calculated as Total S * 31.25
 (E) AP calculated as Sulphide S * 31.25
 (F) Neutralization potential measured by the standard Sobek method
 (G) Total carbon measured by Leco analyzer
 (H) Total inorganic carbon measured using HCl leach and CO₂ coulometry
 (I) Carbonate neutralization potential based on TIC
 (J) Neutralization potential ratio, NP/AP
 (K) Carbonate neutralization potential ratio, CarbNP/AP
 (L) Classification based on guidance in MEND (2009). NPAG = NPR > 2, PAG = NPR < 1, Uncertain = 1 < NPR < 2.



Table B-4. Acid Base Accounting Results Statistical Summary (Zone)

Statistical Parameter	Paste pH	Total Sulphur ^(A)	Sulphate Sulphur ^(B)	Sulphide Sulphur ^(C)	MPA ^(D)	AP ^(E)	Sobek NP ^(F)	Total Carbon ^(G)	Total Inorganic Carbon ^(H)	CarbNP ^(I)	NPR ^(J)	CarbNPR ^(K)	Classification (NPR) ^(L)	Classification (CarbNPR) ^(L)	
	pH Units	%	%	%	kg CaCO ₃ /t	kg CaCO ₃ /t	kg CaCO ₃ /t	%	%	kg CaCO ₃ /t	NP/AP	CarbNP/AP			
All Portage Samples	Count	609	609	609	609	609	609	311	609	609	609	609	% NPAG		
	Minimum	4.0	0.010	0.0050	0.0040	0.31	0.13	-1.1	0.020	0.020	1.7	0.0016	0.0072	46%	43%
	10 th Percentile	7.2	0.11	0.010	0.089	3.3	2.8	6.6	0.050	0.020	1.7	0.080	0.023	% Uncertain	
	Median	8.7	1.5	0.030	1.5	47	45	82	1.1	0.75	63	1.8	1.4	% Uncertain	
	Average	8.5	1.9	0.029	1.9	61	60	87	1.1	0.90	75	1.5	1.3	11%	11%
	Standard Deviation	0.91	1.7	0.024	1.7	54	54	78	0.86	0.88	73	86	72	% PAG	
	90 th Percentile	9.4	4.5	0.050	4.5	141	140	191	2.4	2.1	179	35	28	43%	46%
	Maximum	10	10	0.30	10.0	313	312	396	4.4	4.1	339	1410	1060	% NPAG	
	Count	479	479	479	479	479	479	479	263	479	479	479	479	% NPAG	
	Minimum	4.0	0.010	0.0050	0.0040	0.31	0.13	-1.1	0.020	0.020	1.7	0.014	0.0074	54%	52%
10 th Percentile	7.6	0.088	0.010	0.069	2.8	2.2	7.3	0.080	0.020	1.7	0.13	0.047	% Uncertain		
Median	8.8	1.2	0.030	1.1	37	36	100	1.2	0.95	79	2.8	2.2	% Uncertain		
Average	8.6	1.6	0.027	1.5	49	48	96	1.2	1.00	83	2.0	1.7	11%	10%	
Standard Deviation	0.83	1.5	0.023	1.5	47	47	76	0.90	0.86	72	96	80	% PAG		
90 th Percentile	9.5	3.6	0.050	3.5	111	110	201	2.4	2.2	185	57	52	35%	38%	
Maximum	10	10	0.30	10.0	313	312	396	4.4	4.1	339	1410	1060	% NPAG		
Count	130	130	130	130	130	130	130	48	130	130	130	130	% NPAG		
Minimum	4.3	0.010	0.0050	0.0080	0.31	0.25	0.10	0.020	0.020	1.7	0.0016	0.0072	15%	11%	
10 th Percentile	6.7	1.1	0.010	1.1	33	33	4.9	0.020	0.020	1.7	0.044	0.011	% Uncertain		
Median	8.1	3.3	0.030	3.3	103	102	13	0.18	0.065	5.4	0.13	0.053	% Uncertain		
Average	7.9	3.4	0.035	3.4	107	106	55	0.53	0.54	45	0.52	0.43	12%	13%	
Standard Deviation	0.98	1.8	0.029	1.8	55	55	77	0.57	0.83	69	6.6	5.3	% PAG		
90 th Percentile	9.0	6.1	0.050	6.0	189	188	208	1.1	2.1	176	2.8	2.4	73%	76%	
Maximum	9.5	7.5	0.25	7.4	233	232	313	3.8	3.2	263	57	53	% NPAG		
Count	137	137	137	137	137	137	137	63	137	137	137	137	% NPAG		
Minimum	7.9	0.0050	0.0050	0.010	0.16	0.31	6.4	0.65	0.14	12	0.33	0.28	83%	82%	
10 th Percentile	8.5	0.100	0.010	0.079	3.1	2.5	97	1.0	0.97	81	1.5	1.3	% Uncertain		
Median	9.0	0.52	0.030	0.50	16	15	162	1.9	1.7	145	10	9.4	% Uncertain		
Average	9.0	1.2	0.027	1.1	37	36	172	1.9	1.8	154	4.8	4.3	13%	12%	
Standard Deviation	0.36	1.4	0.018	1.4	42	42	72	1.0	0.83	69	83	76	% PAG		
90 th Percentile	9.5	3.6	0.040	3.5	111	110	244	2.7	2.8	236	64	53	4%	6%	
Maximum	9.9	6.0	0.18	6.0	187	186	546	3.7	5.5	459	541	509	% NPAG		
Count	119	119	119	119	119	119	119	60	119	119	119	119	% NPAG		
Minimum	7.9	0.0050	0.0050	0.010	0.16	0.31	6.4	0.65	0.14	12	0.33	0.28	84%	83%	
10 th Percentile	8.6	0.099	0.010	0.078	3.1	2.4	88	1.0	0.89	75	1.5	1.5	% Uncertain		
Median	9.0	0.47	0.030	0.44	15	14	159	1.9	1.7	144	12	10	% Uncertain		
Average	9.0	0.97	0.027	0.94	30	29	165	1.9	1.8	150	5.6	5.1	13%	11%	
Standard Deviation	0.37	1.2	0.019	1.2	36	36	69	1.1	0.79	65	88	81	% PAG		
90 th Percentile	9.5	3.6	0.040	3.6	112	111	233	2.9	2.8	231	56	42	3%	6%	
Maximum	9.9	5.5	0.18	5.4	170	169	546	3.7	5.5	459	541	509	% NPAG		

- (A) Total sulphur measured by Leco analyzer
- (B) Sulphate sulphur measured by HCl leach.
- (C) Sulphide sulphur calculated as the difference between total sulphur and sulphate sulphur.
- (D) MPA calculated as Total S *31.25
- (E) AP calculated as Sulphide S * 31.25
- (F) Neutralization potential measured by the standard Sobek method
- (G) Total carbon measured by Leco analyzer
- (H) Total inorganic carbon measured using HCl leach and CO₂ coulometry
- (I) Carbonate neutralization potential based on TIC
- (J) Neutralization potential ratio, NP/AP
- (K) Carbonate neutralization potential ratio, CarbNP/AP
- (L) Classification based on guidelines in MEND (2009). See text for additional details.
- (K) Carbonate neutralization potential ratio, CarbNP/AP
- (L) Classification based on guidance in MEND (2009). NPAG = NPR>2, PAG=NPR<1, Uncertain = 1<NPR<2.



Table B-4. Acid Base Accounting Results Statistical Summary (Zone)

Statistical Parameter		Paste pH	Total Sulphur ^(A)	Sulphate Sulphur ^(B)	Sulphide Sulphur ^(C)	MPA ^(D)	AP ^(E)	Sobek NP ^(F)	Total Carbon ^(G)	Total Inorganic Carbon ^(H)	CarbNP ^(I)	NPR ^(J)	CarbNPR ^(K)	Classification (NPR) ^(L)	Classification (CarbNPR) ^(L)
		pH Units	%	%	%	kg CaCO ₃ /t	kg CaCO ₃ /t	kg CaCO ₃ /t	%	%	kg CaCO ₃ /t	NP/AP	CarbNP/AP		
Camp Ore-Grade Materials	Count	18	18	18	18	18	18	18	3	18	18	18	18	% NPAG	
	Minimum	8.3	0.095	0.010	0.055	3.0	1.7	109	1.7	0.92	77	0.88	0.41	78%	72%
	10 th Percentile	8.4	0.34	0.017	0.32	11	10.0	121	1.8	1.1	93	1.4	1.2	% Uncertain	
	Median	8.9	2.2	0.030	2.1	68	66	195	2.0	1.9	158	2.9	2.4	% Uncertain	
	Average	8.8	2.5	0.031	2.5	79	78	212	2.0	2.2	184	2.7	2.4	17%	22%
	Standard Deviation	0.32	1.8	0.011	1.8	56	56	80	0.75	1.0	84	15	12	% PAG	
	90 th Percentile	9.5	5.0	0.040	5.0	156	155	226	2.6	2.9	240	6.9	6.0	6%	6%
	Maximum	9.5	6.0	0.050	6.0	187	186	380	2.2	4.3	354	63	51	% NPAG	
	Count	130	130	130	130	130	130	130	61	130	130	130	130	% NPAG	
	Minimum	8.1	0.010	0.0050	0.010	0.31	0.31	54	0.76	0.56	47	0.76	0.78	87%	87%
10 th Percentile	8.6	0.090	0.010	0.070	2.8	2.2	96	1.1	0.97	82	1.6	1.6	% Uncertain		
Median	9.2	0.71	0.020	0.69	22	22	149	1.8	1.8	152	6.9	7.0	% Uncertain		
Average	9.2	1.2	0.021	1.1	36	36	167	2.0	2.0	163	4.7	4.5	9%	10%	
Standard Deviation	0.41	1.3	0.011	1.3	40	40	71	1.2	0.87	72	132	133	% PAG		
90 th Percentile	9.7	3.0	0.040	2.9	93	92	242	2.9	3.0	248	68	67	4%	3%	
Maximum	9.9	6.4	0.040	6.4	200	198	407	4.8	5.1	423	784	867	% NPAG		
East Extension Mine Rock	Count	118	118	118	118	118	118	57	118	118	118	118	% NPAG		
	Minimum	8.1	0.010	0.0050	0.010	0.31	0.31	54	0.76	0.56	47	0.76	0.78	89%	89%
	10 th Percentile	8.7	0.081	0.010	0.064	2.5	2.0	95	1.1	0.96	80	1.9	1.9	% Uncertain	
	Median	9.3	0.63	0.020	0.62	20	19	145	1.8	1.8	151	7.5	7.8	% Uncertain	
	Average	9.2	1.0	0.021	1.0	32	32	163	2.0	1.9	158	5.1	5.0	7%	8%
	Standard Deviation	0.39	1.2	0.011	1.2	36	36	67	1.2	0.81	68	138	139	% PAG	
	90 th Percentile	9.6	2.5	0.040	2.5	80	79	241	3.0	2.9	239	70	68	4%	3%
	Maximum	9.9	6.4	0.040	6.4	200	198	398	4.8	4.6	382	784	867	% NPAG	
	Count	12	12	12	12	12	12	12	4	12	12	12	12	% NPAG	
	Minimum	8.2	0.23	0.0050	0.23	7.2	7.0	116	1.6	1.4	120	1.1	1.1	67%	67%
10 th Percentile	8.4	0.97	0.0055	0.93	30	29	136	1.7	1.5	127	1.3	1.2	% Uncertain		
Median	8.8	2.1	0.020	2.1	65	64	180	1.9	2.3	189	2.8	2.9	% Uncertain		
Average	8.9	2.4	0.022	2.4	76	76	208	2.0	2.5	206	2.7	2.7	33%	33%	
Standard Deviation	0.52	1.6	0.015	1.6	49	49	96	1.00	1.2	101	8.8	7.9	% PAG		
90 th Percentile	9.5	4.7	0.050	4.7	147	146	212	2.4	2.5	205	12	10	0%	0%	
Maximum	9.8	5.1	0.040	5.0	159	158	407	2.5	5.1	423	32	29	% NPAG		

- (A) Total sulphur measured by Leco analyzer
- (B) Sulphate sulphur measured by HCl leach.
- (C) Sulphide sulphur calculated as the difference between total sulphur and sulphate sulphur.
- (D) MPA calculated as Total S * 31.25
- (E) AP calculated as Sulphide S * 31.25
- (F) Neutralization potential measured by the standard Sobek method
- (G) Total carbon measured by Leco analyzer
- (H) Total inorganic carbon measured using HCl leach and CO₂ coulometry
- (I) Carbonate neutralization potential based on TIC
- (J) Neutralization potential ratio, NP/AP
- (K) Carbonate neutralization potential ratio, CarbNP/AP
- (L) Classification based on guidelines in MEND (2009). See text for additional details.
- (K) Carbonate neutralization potential ratio, CarbNP/AP
- (L) Classification based on guidance in MEND (2009). NPAG = NPR > 2, PAG = NPR < 1, Uncertain = 1 < NPR < 2.



Table B-5. NAG pH Results

Sample ID	Classification	Final Lithology Group	Zone	Data Source	Pulp Sample Weight	Vol. of 15% H ₂ O ₂	NAG pH	NaOH to pH 4.5	NaOH to pH 7.0	NaOH Concentration	NAG Acidity to pH 4.5	NAG Acidity to pH 7.0
					g	mL	pH Units	mL	mL	N	kg H ₂ SO ₄ /tonne	kg H ₂ SO ₄ /tonne
009555	Mine Rock	And_tuf_metaseds	PORT	KCC (2020)	2.5	250	8.32	0	0	0.10	0	0
009573	Ore-Grade Materials	TRA	PORT	KCC (2020)	2.5	250	2.18	31	39	0.10	60	77
009587	Ore-Grade Materials	And_tuf_metaseds	PORT	KCC (2020)	2.5	250	2.47	13	17	0.10	25	34
009594	Ore-Grade Materials	VBX	PORT	KCC (2020)	2.5	250	2.15	31	38	0.10	60	75
009608	Mine Rock	POR	PORT	KCC (2020)	2.5	250	3.15	3.2	7.5	0.10	6.3	15
009626	Ore-Grade Materials	And_tuf_metaseds	PORT	KCC (2020)	2.5	250	8.50	0	0	0.10	0	0
009668	Mine Rock	TRA	PORT	KCC (2020)	2.5	250	8.20	0	0	0.10	0	0
009688	Ore-Grade Materials	And_tuf_metaseds	Camp	KCC (2020)	2.5	250	8.44	0	0	0.10	0	0
A00356169	Mine Rock	VBX	EAST-EXT	KCC (2020)	2.5	250	8.39	0	0	0.10	0	0
009702	Mine Rock	And_tuf_metaseds	Camp	KCC (2020)	2.5	250	8.54	0	0	0.10	0	0
W-003	Ore-Grade Materials	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.18	0	0	0.10	0	0
W-006	Ore-Grade Materials	POR	PORT	Wood (2021)	2.5	250	8.15	0	0	0.10	0	0
W-009	Ore-Grade Materials	POR	PORT	Wood (2021)	2.5	250	2.72	7.2	18	0.10	14	35
W-014	Ore-Grade Materials	TRA	PORT	Wood (2021)	2.5	250	2.17	33	39	0.10	65	76
W-022	Ore-Grade Materials	TRA	PORT	Wood (2021)	2.5	250	2.50	12	16	0.10	24	30
W-028	Ore-Grade Materials	VBX	PORT	Wood (2021)	2.5	250	7.30	0	0	0.10	0	0
W-030	Ore-Grade Materials	TRA	PORT	Wood (2021)	2.5	250	2.34	23	26	0.10	45	52
W-032	Mine Rock	VBX	PORT	Wood (2021)	2.5	250	8.01	0	0	0.10	0	0
W-033	Mine Rock	Int-M	PORT	Wood (2021)	2.5	250	8.39	0	0	0.10	0	0
W-041	Mine Rock	TRA	PORT	Wood (2021)	2.5	250	8.52	0	0	0.10	0	0
W-042	Mine Rock	And_tuf_metaseds	Camp	Wood (2021)	2.5	250	8.46	0	0	0.10	0	0
W-046	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	3.87	0.50	1.8	0.10	1.0	3.5
W-050	Mine Rock	TRA	Camp	Wood (2021)	2.5	250	8.54	0	0	0.10	0	0
W-052	Mine Rock	VBX	Camp	Wood (2021)	2.5	250	7.39	0	0	0.10	0	0
W-053	Mine Rock	VBX	PORT	Wood (2021)	2.5	250	2.36	21	25	0.10	41	49
W-054	Mine Rock	TRA	Camp	Wood (2021)	2.5	250	7.95	0	0	0.10	0	0
W-055	Ore-Grade Materials	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	2.45	16	18	0.10	30	36
W-059	Mine Rock	And_tuf_metaseds	Camp	Wood (2021)	2.5	250	8.39	0	0	0.10	0	0
W-060	Mine Rock	VBX	Camp	Wood (2021)	2.5	250	8.15	0	0	0.10	0	0
W-063	Mine Rock	And_tuf_metaseds	Camp	Wood (2021)	2.5	250	8.19	0	0	0.10	0	0
W-065	Mine Rock	VBX	Camp	Wood (2021)	2.5	250	7.82	0	0	0.10	0	0
W-067	Mine Rock	VBX	Camp	Wood (2021)	2.5	250	8.44	0	0	0.10	0	0
W-070	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.23	0	0	0.10	0	0
W-072	Mine Rock	TRA	PORT	Wood (2021)	2.5	250	2.87	7.2	11	0.10	14	21
W-073	Mine Rock	TRA	Camp	Wood (2021)	2.5	250	8.21	0	0	0.10	0	0
W-077	Mine Rock	And_tuf_metaseds	Camp	Wood (2021)	2.5	250	8.55	0	0	0.10	0	0
W-079	Mine Rock	VBX	Camp	Wood (2021)	2.5	250	8.14	0	0	0.10	0	0
W-081	Mine Rock	And_tuf_metaseds	Camp	Wood (2021)	2.5	250	8.24	0	0	0.10	0	0
W-082	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.33	0	0	0.10	0	0
W-086	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.03	0	0	0.10	0	0
W-088	Mine Rock	TRA	PORT	Wood (2021)	2.5	250	2.40	20	25	0.10	38	48
W-091	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.31	0	0	0.10	0	0
W-102	Mine Rock	POR	PORT	Wood (2021)	2.5	250	8.81	0	0	0.10	0	0
W-105	Mine Rock	TRA	PORT	Wood (2021)	2.5	250	2.81	9.7	14	0.10	19	27
W-126	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.61	0	0	0.10	0	0
W-137	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	7.84	0	0	0.10	0	0
W-139	Mine Rock	VBX	PORT	Wood (2021)	2.5	250	2.71	12	18	0.10	24	35
W-150	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	2.73	10	15	0.10	20	29
W-151	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.02	0	0	0.10	0	0
W-173	Mine Rock	VBX	PORT	Wood (2021)	2.5	250	2.46	17	23	0.10	34	46
W-180	Mine Rock	POR	PORT	Wood (2021)	2.5	250	3.03	2.8	3.9	0.10	5.5	7.6
W-196	Mine Rock	VBX	PORT	Wood (2021)	2.5	250	8.50	0	0	0.10	0	0
W-200	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.75	0	0	0.10	0	0
W-202	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	9.45	0	0	0.10	0	0
W-206	Mine Rock	VBX	EAST-EXT	Wood (2021)	2.5	250	8.30	0	0	0.10	0	0
W-207	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.58	0	0	0.10	0	0
W-208	Mine Rock	VBX	EAST-EXT	Wood (2021)	2.5	250	8.13	0	0	0.10	0	0
W-211	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.36	0	0	0.10	0	0
W-215	Ore-Grade Materials	VBX	PORT	Wood (2021)	2.5	250	8.62	0	0	0.10	0	0
W-217	Mine Rock	TRA	PORT	Wood (2021)	2.5	250	8.42	0	0	0.10	0	0
W-221	Mine Rock	POR	PORT	Wood (2021)	2.5	250	8.07	0	0	0.10	0	0
W-222	Mine Rock	And_tuf_metaseds	Camp	Wood (2021)	2.5	250	9.59	0	0	0.10	0	0
W-234	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.36	0	0	0.10	0	0
W-241	Mine Rock	TRA	EAST-EXT	Wood (2021)	2.5	250	8.68	0	0	0.10	0	0
W-245	Mine Rock	TRA	EAST-EXT	Wood (2021)	2.5	250	9.09	0	0	0.10	0	0
W-253	Ore-Grade Materials	And_tuf_metaseds	Camp	Wood (2021)	2.5	250	7.95	0	0	0.10	0	0
W-261	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.71	0	0	0.10	0	0
W-263	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.24	0	0	0.10	0	0
W-266	Ore-Grade Materials	TRA	PORT	Wood (2021)	2.5	250	2.53	16	21	0.10	31	41
W-267	Mine Rock	TRA	PORT	Wood (2021)	2.5	250	8.44	0	0	0.10	0	0
W-272	Mine Rock	TRA	PORT	Wood (2021)	2.5	250	8.11	0	0	0.10	0	0
W-278	Mine Rock	TRA	PORT	Wood (2021)	2.5	250	8.02	0	0	0.10	0	0
W-299	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.03	0	0	0.10	0	0
W-301	Mine Rock	And_tuf_metaseds	PORT	Wood (2021)	2.5	250	8.36	0	0	0.10	0	0
W-306	Mine Rock	And_tuf_metaseds	Camp	Wood (2021)	2.5	250	8.59	0	0	0.10	0	0
W-312	Mine Rock	And_tuf_metaseds	Camp	Wood (2021)	2.5	250	8.29	0	0	0.10	0	0
M112010	Mine Rock	And_tuf_metaseds	EAST-EXT	Wood (2021)	2.5	250	7.99	0	0	0.10	0	0
M112065	Mine Rock	And_tuf_metaseds	EAST-EXT	Wood (2021)	2.5	250	7.86	0	0	0.10	0	0
M112068	Mine Rock	And_tuf_metaseds	EAST-EXT	Wood (2021)	2.5	250	8.34	0	0	0.10	0	0
M112086	Mine Rock	TRA	EAST-EXT	Wood (2021)	2.5	250	7.95	0	0	0.10	0	0
M112089	Mine Rock	And_tuf_metaseds	EAST-EXT	Wood (2021)	2.5	250	8.27	0	0	0.10	0	0
M112105	Mine Rock	And_tuf_metaseds	EAST-EXT	Wood (2021)	2.5	250	8.12	0	0	0.10	0	0
M112119	Mine Rock	TRA	EAST-EXT	Wood (2021)	2.5	250	8.04	0	0	0.10	0	0
M112133	Mine Rock	TRA	EAST-EXT	Wood (2021)	2.5	250	8.09	0	0	0.10	0	0
M112163	Mine Rock	TRA	EAST-EXT	Wood (2021)	2.5	250	8.14	0	0	0.10	0	0



Table B-6. Elemental Content Results



Sample ID	Classification	Digest Method (A)	Final Lithology Group	Zone	Drillhole	From	To	Data Source	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Ce	Cu	Fe	Ga	Ge																																																
									mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg																																									
									0.75	--	18	0.000004	10	4250	30	0.085	--	7.5	--	250	1020	mg/kg	600	mg/kg	190	15																																																
009573	009574	009575	009576	009577	009578	009579	009580	009581	009582	009583	009584	009585	009586	009587	009588	009589	009590	009591	009592	009593	009594	009595	009596	009597	009598	009599	009600	009601	009602	009603	009604	009605	009606	009607	009608	009609	009610	009611	009612	009613	009614	009615	009616	009617	009618	009619	009620	009621	009622	009623	009624	009625	009626	009627	009628	009629	009630	009631	009632	009633	009634	009635	009636	009637	009638	009639	009640	009641	009642	009643	009644	009645	009646	009647

Red highlight indicates metal concentrations that are greater than the ten times the crustal abundance value
 (A) 4-acid digest metals data shown for information purposes only.



Table B-6. Elemental Content Results



Table with columns for Sample ID, Classification, Digest Method, Final Lithology Group, Zone, Drillhole, and elements From, To, Hf, Hg, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, S, Sb. Data includes various sample IDs like A00356184 and concentrations in mg/kg.

Red highlight indicates metal concentrations that are greater than the ten times the crustal abundance value (A) 4-acid digest metals data shown for information purposes only.



Table B-6. Elemental Content Results

Sample ID	Classification	Digest Method ^(A)	Final Lithology Group	Zone	Drillhole	From	To	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr																				
						m	m	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg																
70x Crustal Abundance (Price 1997)																						220	0.5	23	3700	--	--	96	--	8.5	27	1200	mg/kg	mg/kg	mg/kg	mg/kg	12.5	330	700	1650		
ABA-139	Mine Rock	4-Acid	POR	Portage	SP11-064	243	244	18	1.0	<1.0	291	<0.44	0.12	2.3	6460	1.3	0.80	158	3.2	16	136	110																				
ABA-138	Mine Rock	4-Acid	POR	Portage	SP11-064	303	304	19	1.0	<2.7	330	<0.46	0.080	2.5	6680	0.94	0.80	174	2.8	16	94	114																				
ABA-118	Mine Rock	4-Acid	POR	Portage	SP11-068	1	2	21	0.50	<1.1	243	<0.34	0.025	2.2	7150	0.32	0.40	191	0.70	17	98	134																				
ABA-116	Mine Rock	4-Acid	POR	Portage	SP11-068	61	62	18	0.50	<1.0	224	<0.49	0.025	2.2	6140	0.79	0.50	164	1.0	16	98	114																				
ABA-117	Mine Rock	4-Acid	VBX	Portage	SP11-068	121	122	19	0.50	<1.0	192	<0.46	0.97	2.2	5870	2.1	0.80	165	7.5	13	45	119																				
ABA-146	Mine Rock	4-Acid	TRA	Portage	SP11-068	181	182	21	3.0	<1.9	253	<0.89	0.060	5.3	10250	0.73	1.5	204	2.7	28	110	212																				
ABA-147	Mine Rock	4-Acid	TRA	Portage	SP11-068	241	242	19	2.0	<1.1	272	<0.43	1.9	2.2	5680	1.2	0.90	168	14	14	440	111																				
ABA-130	Mine Rock	4-Acid	VBX	Portage	SP11-068	300	301	21	0.50	<1.1	237	<0.52	1.1	2.3	6520	1.7	0.50	178	21	17	163	126																				
ABA-129	Mine Rock	4-Acid	VBX	Portage	SP11-068	360	361	21	1.0	<1.0	238	<0.53	1.6	2.3	6600	1.1	0.50	170	8.5	17	90	127																				
ABA-143	Mine Rock	4-Acid	POR	Portage	SP11-068	420	421	20	2.0	<1.1	315	<0.52	0.080	2.3	7010	1.1	0.60	187	2.4	18	106	121																				
ABA-141	Mine Rock	4-Acid	And_tuf_metaseds	Portage	SP11-072	4	5	15	0.50	<0.40	140	<0.25	0.050	0.80	4740	3.0	0.30	135	4.3	8.5	111	62																				
ABA-142	Mine Rock	4-Acid	And_tuf_metaseds	Portage	SP11-072	64	65	16	1.0	<0.60	198	<0.19	0.11	2.2	4030	2.5	2.2	153	74	9.8	109	77																				
ABA-166	Ore-Grade Materials	4-Acid	And_tuf_metaseds	Portage	SP11-072	124	125	14	1.0	<1.7	190	<0.33	0.47	3.3	3360	1.9	1.8	123	18	14	50	140																				
ABA-144	Mine Rock	4-Acid	And_tuf_metaseds	Portage	SP11-072	183	184	32	1.0	<0.40	407	<0.070	0.080	0.50	3330	3.5	0.30	225	13	8.1	90	51																				
ABA-165	Mine Rock	4-Acid	POR	Portage	SP11-072	243	244	14	1.0	<2.0	400	<0.42	0.59	7.0	2630	3.9	2.8	58	9.1	33	98	331																				
ABA-159	Mine Rock	4-Acid	TRA	Portage	SP11-072	307	310	21	6.0	<0.90	157	<0.15	12	1.8	3790	3.6	2.4	151	18	14	181	88																				
ABA-145	Mine Rock	4-Acid	POR	Portage	SP11-075	62	63	1.6	1.0	<0.80	423	<0.15	2.1	8.4	800	5.6	7.1	40	7.8	12	157	251																				
ABA-163	Ore-Grade Materials	4-Acid	POR	Portage	SP11-075	182	183	18	3.0	<1.1	653	<0.13	5.4	6.1	2160	5.5	11	137	15	20	154	153																				
ABA-164	Mine Rock	4-Acid	POR	Portage	SP11-075	241	242	8.9	2.0	<0.90	513	<0.15	1.5	7.3	1880	4.7	5.7	93	7.3	17	137	193																				
ABA-148	Mine Rock	4-Acid	TRA	Portage	SP11-076	2	3	17	2.0	<1.7	185	<0.68	0.070	4.2	6420	5.2	2.0	164	20	16	112	146																				
ABA-167	Mine Rock	4-Acid	And_tuf_metaseds	Portage	SP11-076	63	64	18	2.0	<1.2	250	<0.33	0.84	1.8	5050	3.4	1.0	155	11	12	98	80																				
ABA-172	Mine Rock	4-Acid	TRA	Portage	SP11-076	122	123	8.2	0.50	<0.80	443	<0.16	0.27	5.2	1570	6.1	11	68	17	14	105	172																				
ABA-173	Mine Rock	4-Acid	TRA	Portage	SP11-076	182	183	7.0	0.50	<0.60	951	<0.15	1.4	5.3	1470	5.0	6.0	54	10	14	134	158																				
ABA-170	Mine Rock	4-Acid	TRA	Portage	SP11-076	242.5	244	3.7	1.0	<1.0	550	<0.16	0.64	5.9	970	6.8	11	67	6.4	15	154	254																				
ABA-176	Mine Rock	4-Acid	TRA	Portage	SP11-076	303	304	3.5	3.0	<0.70	1035	<0.15	2.1	7.5	810	6.0	8.8	41	6.2	17	636	266																				
ABA-157	Mine Rock	4-Acid	TRA	Portage	SP11-076	365.5	367	25	2.0	<1.3	74	<0.24	1.1	2.7	4380	4.4	3.6	269	31	18	136	161																				
ABA-171	Mine Rock	4-Acid	TRA	Portage	SP11-082	5	6.5	35	0.50	<0.90	649	<0.29	0.27	13	1300	1.3	6.5	35	3.7	6.4	461	339																				
ABA-160	Ore-Grade Materials	4-Acid	TRA	Portage	SP11-082	306	307	16	1.0	<2.0	127	<0.43	0.29	8.0	1920	3.5	3.4	83	24	35	53	359																				
ABA-161	Mine Rock	4-Acid	TRA	Portage	SP11-082	365.5	367	20	3.0	<1.0	220	<0.12	3.8	2.3	3730	3.0	1.9	172	5.1	16	115	110																				
ABA-158	Mine Rock	4-Acid	TRA	Portage	SP11-082	426	427	5.0	2.0	<0.30	3060	<0.070	1.5	4.5	830	3.1	5.5	25	2.8	12	214	112																				
ABA-162	Mine Rock	4-Acid	POR	Portage	SP11-087	62	63	22	6.0	<0.80	288	<0.18	8.2	2.0	3120	5.1	5.4	180	8.7	15	132	116																				
ABA-174	Mine Rock	4-Acid	POR	Portage	SP11-087	122	123	36	0.50	<1.1	181	<0.44	0.52	1.8	8930	2.3	1.1	232	15	19	120	108																				
ABA-150	Mine Rock	4-Acid	POR	Portage	SP11-087	242	243	2.5	2.0	<1.0	502	<0.34	2.8	1.8	1050	3.6	7.1	43	8.4	20	166	314																				
ABA-156	Mine Rock	4-Acid	POR	Portage	SP11-087	301.5	303	9.5	2.0	<0.60	821	<0.16	1.1	7.0	1560	4.8	8.6	81	5.9	18	151	172																				
ABA-154	Mine Rock	4-Acid	TRA	Portage	SP11-087	362	363	21	2.0	<1.0	241	<0.24	1.9	2.2	4510	3.5	2.7	192	12	14	112	119																				
ABA-169	Mine Rock	4-Acid	POR	Portage	SP11-088	7	8	17	2.0	<1.0	186	<0.30	1.0	4.7	4530	3.3	1.0	156	17	12	157	122																				
ABA-168	Mine Rock	4-Acid	POR	Portage	SP11-088	66	67	22	2.0	<1.1	238	<0.50	0.57	2.7	6880	4.4	1.0	204	45	11	114	123																				
ABA-175	Mine Rock	4-Acid	POR	Portage	SP11-088	126	127	12	2.0	<1.0	293	<0.16	1.1	8.0	2040	2.7	3.2	100	16	17	116	190																				
ABA-152	Mine Rock	4-Acid	POR	Portage	SP11-088	246	247	7.1	1.0	<0.80	769	<0.13	0.54	4.7	1850	3.2	6.9	82	8.3	12	125	165																				
ABA-153	Mine Rock	4-Acid	POR	Portage	SP11-088	305.5	307	7.6	1.0	<0.90	373	<0.16	2.8	7.0	1860	5.1	9.2	90	13	17	364	184																				
ABA-151	Ore-Grade Materials	4-Acid	POR	Portage	SP11-088	365.5	367	26	9.0	<1.5	161	<0.13	18	2.8	3320	4.4	4.2	139	4.7	21	177	114																				
ABA-155	Mine Rock	4-Acid	POR	Portage	SP11-088	427	428.5	9.8	1.0	<1.0	873	<0.15	2.4	5.3	1920	6.0	5.1	103	7.2	15	96	178																				
ABA-104	Mine Rock	4-Acid	TRA	Portage	SP11-097	62	63	25	0.50	<1.1	161	<0.27	0.83	2.7	4090	2.0	1.9	193	8.5	17	102	138																				
ABA-090	Mine Rock	4-Acid	TRA	Portage	SP11-097	241	242	25	3.0	<0.60	205	<0.080	2.9	1.0	3000	2.9	1.5	216	3.9	12	189	78																				
ABA-111	Mine Rock	4-Acid	POR	Portage	SP11-099	64	65	1.4	0.50	<0.80	595	<0.19	0.32	9.3	990	3.8	5.0	32	3.9	9.7	90	275																				
ABA-087	Mine Rock	4-Acid	TRA	Portage	SP11-099	304	305	8.7	2.0	<1.5	1160	<0.16	0.28	8.1	1900	6.8	6.9	90	12	19	74	221																				
ABA-096	Mine Rock	4-Acid	And_tuf_metaseds	Portage	SP11-106	4	5	7.4	1.0	<0.90	760	<0.15	0.090	8.1	1820	6.7	6.5	73	10	12	102	196																				
ABA-091	Mine Rock	4-Acid	And_tuf_metaseds	Portage	SP11-106	64	65	6.9	1.0	<0.90	293	<0.16	0.11	6.4	1680	5.9	11	65	7.1	14	94	180																				
ABA-093	Mine Rock	4-Acid	And_tuf_metaseds	Portage	SP11-106	124	125	21	3.0	<1.6	481	<0.74	0.10	4.7	7500	3.5	1.8	125	13	23	95	230																				
ABA-094	Mine Rock	4-Acid	And_tuf_metaseds	Portage	SP11-106	182	185	8.9	1.0	<0.70	542	<0.12	0.28	5.0	1420	7.0	6.9	77	4.8	11	74	170																				
ABA-102	Mine Rock	4-Acid	POR	Portage	SP11-106	244	245	4.0	0.50	<1.6	1095	<0.44	0.69	30	1370	6.4	12	59	6.6	26	142	398																				
ABA-088	Mine Rock	4-Acid	POR	Portage	SP11-106	304	305	2.3	1.0	<1.1	1515	<0.37	0.50	22	1100	4.6	11	42	4.9	17	87	349																				
ABA-101	Mine Rock	4-Acid	And_tuf_metaseds	Portage	SP11-106	365.5	367	9.4	0.50	<2.7	632	<0.18	1.7	8.0	2040	7.8	8.4	92	10	22	149	205																				
ABA-099	Ore-Grade Materials	4-Acid	TRA	Portage	SP11-106	427	428.5	23	10	<1.2	103	<0.29	33	2.6	4290	6.4	3.2	209	15	19	165	135																				

Red highlight indicates metal concentrations that are greater than the ten times the crustal abundance value
(A) 4-acid digest metals data shown for information purposes only.



Table B-7. Elemental Content Statistical Summary



Parameter	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
10x Crustal Abundance (Price 1997)	0.75	18	0.00004	100	4250	30	0.085	1.5	250	1020	600	190	15	0.85	390	200									
All Samples	Count	694	694	694	694	694	694	694	694	694	690	694	694	694	694	694	694	694	694	694	694	694	694	694	
	No. Samples > 10x Crustal	272	0	495	694	1	0	0	340	0	61	4	0	2	0	3	0	0	0	22	0	0	10	35	
	% Samples > 10x Crustal	39%	0%	71%	100%	0%	0%	0%	49%	0%	9%	1%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	5%	
	Minimum	0.010	2000	1.6	0.00050	10	10	0.050	0.010	300	0.010	3.1	0.80	1.0	0.13	4.2	3300	0.77	0.050	0.030	0.0050	0.0050	400	1.8	1.0
	10th Percentile	0.080	4200	7.1	0.0060	10	20	0.23	0.020	1730	0.050	21	6.8	24	1.1	18	16430	1.7	0.050	0.32	0.0093	0.0050	1500	9.3	6.0
	Median	0.46	12650	36	0.098	10	59	0.52	0.080	29750	0.16	43	28	50	7.5	60	53900	4.8	0.10	0.87	0.048	0.013	6900	20	25
	Average	1.9	15090	74	0.42	13	88	0.65	0.30	28536	0.72	64	27	71	14	77	51081	5.4	0.12	1.0	0.17	0.015	8818	48	52
	Standard Deviation	4.8	10039	124	1.3	7.2	91	0.58	0.72	24009	2.7	76	13	102	21	111	22298	3.3	0.098	0.68	0.68	0.011	7356	186	110
	90th Percentile	4.5	30670	170	0.97	18	188	1.1	0.67	54370	1.1	113	41	120	30	131	76400	10	0.21	2.0	0.30	0.025	19070	62	94
	Maximum	60	60400	1254	25	163	969	7.6	15	195500	51	500	95	1303	270	2028	147100	27	1.5	4.6	13	0.13	56600	4269	1936
All Mine Rock	Count	550	550	550	550	550	550	550	550	550	547	550	550	550	550	550	550	550	550	550	550	550	550	550	
	No. Samples > 10x Crustal	158	0	381	550	0	0	0	244	0	39	0	0	2	0	2	0	0	0	13	0	0	6	9	
	% Samples > 10x Crustal	29%	0%	69%	100%	0%	0%	0%	44%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	2%	
	Minimum	0.010	2000	1.6	0.00050	10	10	0.050	0.010	300	0.010	3.1	1.5	2.0	0.13	4.2	3300	0.77	0.050	0.030	0.0050	0.0050	400	1.8	1.0
	10th Percentile	0.070	4090	6.1	0.0053	10	20	0.22	0.010	2400	0.050	20	6.2	23	0.95	17	15590	1.6	0.050	0.29	0.0080	0.0050	1300	9.2	5.7
	Median	0.31	12200	34	0.051	10	62	0.49	0.070	31800	0.13	42	28	48	6.8	55	53450	4.7	0.090	0.83	0.036	0.012	6150	20	22
	Average	1.1	15203	72	0.16	12	93	0.59	0.28	29867	0.57	60	27	75	14	68	50476	5.4	0.11	1.0	0.12	0.015	7986	44	34
	Standard Deviation	3.4	10468	130	0.53	4.2	95	0.50	0.76	21179	2.5	69	14	113	22	108	22850	3.4	0.089	0.70	0.48	0.0097	7210	197	49
	90th Percentile	2.3	31710	158	0.34	18	200	0.95	0.60	54000	0.85	99	42	134	33	113	76700	10	0.18	2.0	0.21	0.025	17630	57	65
	Maximum	60	60400	1254	10	33	969	7.1	15	195500	51	500	95	1303	270	2028	147100	27	1.5	4.6	9.8	0.089	56600	4269	570
All Ore-Grade Materials	Count	144	144	144	144	144	144	144	144	144	143	144	144	144	144	144	144	144	144	144	144	144	144	144	
	No. Samples > 10x Crustal	114	0	114	144	1	0	0	96	0	22	0	0	0	0	1	0	0	0	9	0	0	4	26	
	% Samples > 10x Crustal	79%	0%	79%	100%	1%	0%	0%	67%	0%	15%	0%	0%	0%	1%	0%	0%	0%	0%	6%	0%	0%	3%	18%	
	Minimum	0.040	2200	3.8	0.0016	10	12	0.19	0.010	300	0.020	10	0.80	1.0	0.20	9.6	7100	0.96	0.050	0.14	0.0050	0.0050	1000	5.6	2.2
	10th Percentile	0.43	5130	14	0.27	10	21	0.32	0.040	900	0.060	22	10	29	2.8	26	19050	2.2	0.063	0.57	0.029	0.0073	3560	9.6	10.0
	Median	2.5	13600	44	0.83	11	47	0.68	0.16	4900	0.25	48	30	53	11	80	56900	4.8	0.13	1.1	0.13	0.013	10950	26	51
	Average	4.8	14659	83	1.4	14	72	0.85	0.37	23449	1.3	80	28	57	14	109	53392	5.5	0.16	1.1	0.35	0.017	11995	61	120
	Standard Deviation	7.5	8210	97	2.4	13	71	0.77	0.57	32226	3.4	96	11	29	13	115	19955	2.9	0.12	0.56	1.1	0.014	7055	136	208
	90th Percentile	11	25570	214	2.8	19	143	1.5	0.88	55170	2.6	157	40	87	29	201	75850	9.8	0.26	1.8	0.57	0.028	21530	102	339
	Maximum	57	37700	451	25	163	387	7.6	4.3	161700	20	500	67	205	78	988	100500	15	1.1	4.3	13	0.13	33900	906	1936

Includes samples analyzed by 3:1 aqua regia digestion and ICP-MS finish (see text).
10x Crustal Abundance values based on Price (1997)



Table B-7. Elemental Content Statistical Summary



Parameter	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr	
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
10x Crustal Abundance (Price 1997)	9500	9500	12	840	10500	140	3500	2	220	0.5	23	3700	96	8.5	27	1200	12.5	330	1650	700	694	694	694	694	694	694	694	
All Samples	Count	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694	
	No. Samples > 10x Crustal	0	0	271	0	0	0	64	0	0	546	228	0	299	0	2	0	0	0	0	4	1	0	20	0	7	0	
	% Samples > 10x Crustal	0%	0%	39%	0%	0%	0%	9%	0%	0%	79%	33%	0%	43%	0%	0%	0%	0%	0%	0%	1%	0%	3%	0%	1%	0%		
	Minimum	200	13	0.070	100	0.050	1.9	33	0.60	2.2	0.0010	100	0.10	0.20	0.20	8.6	0.010	0.010	0.20	50	0.040	0.050	2.0	0.050	3.0	5.0	1.3	
	10th Percentile	5200	91	0.86	100	0.050	9.8	341	3.3	8.5	0.0010	1230	0.40	0.90	0.20	38	0.010	0.010	0.90	113	0.18	0.22	9.0	0.20	6.1	46	15	
	Median	15200	994	6.7	200	0.070	36	807	13	74	0.0020	12150	1.4	3.9	0.40	0.20	144	0.010	0.38	2.2	615	1.5	1.1	48	0.73	9.1	100	44
	Average	16977	1064	36	268	0.13	47	835	66	98	0.018	17847	2.4	4.8	1.3	0.25	215	0.012	2.1	3.4	886	1.8	2.6	54	2.1	9.6	172	52
	Standard Deviation	11274	882	100	125	0.12	49	416	215	94	0.079	17141	5.5	4.2	2.2	0.15	394	0.011	4.6	3.9	806	1.7	3.6	40	6.1	3.4	381	35
	90th Percentile	30400	1856	82	400	0.26	92	1326	122	221	0.025	43440	4.7	9.2	3.5	0.30	438	0.010	6.4	6.2	2030	3.9	6.4	105	4.3	13	255	99
	Maximum	84400	9407	1228	1000	1.1	527	4551	3324	754	1.2	100000	108	39	26	3.0	8226	0.15	48	35	4590	15	38	294	122	28	6830	225
All Mine Rock	Count	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	
	No. Samples > 10x Crustal	0	0	163	0	0	0	42	0	0	408	178	0	181	0	1	0	0	0	0	4	1	0	14	0	3	0	
	% Samples > 10x Crustal	0%	0%	30%	0%	0%	0%	8%	0%	0%	74%	32%	0%	33%	0%	0%	0%	0%	0%	0%	1%	0%	0%	3%	0%	1%	0%	
	Minimum	200	13	0.070	100	0.050	1.9	48	0.60	2.2	0.0010	100	0.10	0.20	0.20	8.6	0.010	0.010	0.20	50	0.040	0.050	2.0	0.050	3.0	6.0	1.3	
	10th Percentile	4600	108	0.74	200	0.050	9.6	358	3.0	7.8	0.0010	1000	0.36	0.90	0.20	0.20	41	0.010	0.010	0.80	109	0.16	0.20	8.0	0.18	6.0	45	14
	Median	15000	1026	4.9	200	0.070	36	809	9.9	62	0.0010	9550	1.3	3.8	0.30	0.20	148	0.010	0.17	2.3	600	1.3	0.87	47	0.63	8.7	97	44
	Average	17089	1101	24	273	0.13	49	852	55	86	0.0068	14041	2.1	4.7	0.79	0.24	210	0.012	1.1	3.5	880	1.7	2.4	54	1.9	9.3	156	51
	Standard Deviation	11869	837	70	125	0.12	53	426	187	90	0.024	14696	3.3	4.5	1.5	0.11	263	0.010	3.2	3.9	834	1.7	3.6	41	4.2	3.2	354	36
	90th Percentile	30520	1809	52	400	0.27	96	1339	103	198	0.011	33530	4.7	8.9	1.7	0.30	438	0.010	3.0	6.2	2054	3.7	6.2	104	4.2	13	243	101
	Maximum	84400	9407	977	1000	1.0	527	4551	3324	754	0.37	100000	55	39	16	1.2	4181	0.11	48	35	4590	15	38	294	44	28	6830	225
All Ore-Grade Materials	Count	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	
	No. Samples > 10x Crustal	0	0	108	0	0	0	22	0	0	138	50	0	118	0	1	0	0	0	0	0	0	0	6	0	4	0	
	% Samples > 10x Crustal	0%	0%	75%	0%	0%	0%	15%	0%	0%	96%	35%	0%	82%	0%	1%	0%	0%	0%	0%	0%	0%	0%	4%	0%	3%	0%	
	Minimum	300	18	0.30	100	0.050	4.3	33	1.5	5.1	0.0010	200	0.18	0.30	0.20	0.20	8.6	0.010	0.010	0.20	50	0.12	0.050	2.0	0.050	4.2	5.0	8.1
	10th Percentile	5640	65	5.0	100	0.050	12	255	6.9	32	0.0010	9520	0.53	1.6	0.33	0.20	34	0.010	0.16	1.0	195	0.81	0.43	16	0.38	6.7	51	27
	Median	16050	710	28	200	0.070	37	794	26	131	0.0070	31850	1.4	4.2	2.2	0.20	101	0.010	4.3	1.9	680	2.2	1.9	49	0.97	10	120	46
	Average	16545	923	82	251	0.12	40	771	108	146	0.060	32384	3.6	5.0	3.2	0.26	236	0.013	5.9	3.1	908	2.3	3.1	56	3.0	11	236	53
	Standard Deviation	8654	1028	164	125	0.13	24	368	297	95	0.16	18059	10	3.2	3.3	0.25	698	0.015	6.6	3.8	690	1.4	3.4	36	11	3.8	468	29
	90th Percentile	28780	1918	189	400	0.23	74	1233	186	283	0.14	57600	5.1	9.4	7.1	0.37	428	0.020	13	6.0	1810	4.1	7.0	105	4.3	15	377	85
	Maximum	38400	5845	1228	800	1.1	123	1741	2755	397	1.2	74700	108	15	26	3.0	8226	0.15	48	26	3330	7.2	21	215	122	26	3182	221

Includes samples analyzed by 3:1 aqua regia digestion and ICP-MS finish (see text).
10x Crustal Abundance values based on Price (1997)



Table B-11. NAG Extract Results

Parameter	Unit	Sample ID									
		009555	009573	009587	009594	009608	009626	009668	009688	A00356169	009702
Sample ID	Data Source	KCC (2020)									
Weight of pulp sample used	g	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Volume of 15% H ₂ O ₂ used	mL	250	250	250	250	250	250	250	250	250	250
pH	pH units	7.6	2.2	2.8	2.4	3.1	7.6	7.6	7.6	7.6	7.9
EC	mV	189	5440	1713	3400	1610	175	262	407	259	104
Acidity (to pH 8.3)	mg CaCO ₃ /L	8.0	1315	403	758	206	7.5	5.0	5.0	5.0	5.8
Total Alkalinity (to pH 4.5)	mg CaCO ₃ /L	38	<0.50	<0.50	<0.50	<0.50	41	38	35	36	37
Sulphate	mg/L	49	1009	364	675	685	34	69	145	80	32
Chloride	mg/L	0.62	0.35	0.11	0.050	0.050	0.16	0.15	0.30	0.24	0.28
Fluoride	mg/L	0.030	0.95	0.43	2.2	0.76	0.050	2.1	0.070	0.060	0.040
Total Dissolved Solids (TDS)	mg/L	110	1300	575	788	910	110	185	285	172	108
Phosphorous (IC)	mg/L	--	--	--	--	--	--	--	--	--	--
Hardness (CaCO ₃)	mg/L	67	225	118	197	493	60	100	159	99	60
Aluminum	mg/L	0.14	13	7.6	12	2.1	0.013	0.11	0.087	0.11	0.067
Antimony	mg/L	0.015	0.0024	<0.00010	<0.00010	<0.00010	0.0035	0.0022	0.0062	0.0085	0.010
Arsenic	mg/L	0.0033	0.0092	0.0011	0.0028	0.0011	0.00070	0.0020	0.015	0.0079	0.0023
Barium	mg/L	0.049	0.10	0.095	0.082	0.097	0.0056	0.060	0.0026	0.015	0.016
Beryllium	mg/L	<0.00010	0.0022	0.0074	0.0033	0.0019	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	mg/L	0.020	0.10	0.14	0.070	0.080	0.040	0.020	0.090	0.010	0.020
Cadmium	mg/L	0.000060	0.0060	0.14	0.0023	0.0033	0.000010	0.000090	0.000010	0.000030	0.000070
Calcium	mg/L	23	81	35	54	113	16	38	61	31	16
Chromium	mg/L	0.0082	0.19	0.036	0.077	0.0046	0.012	0.0038	0.011	0.0076	0.010
Cobalt	mg/L	0.00050	0.22	0.13	0.19	0.18	<0.00010	<0.00010	<0.00010	0.00020	<0.00010
Copper	mg/L	0.00090	0.58	1.4	0.55	0.34	<0.00050	0.0033	<0.00050	0.0012	<0.00050
Iron	mg/L	<0.020	93	16	44	17	0.24	0.24	0.12	0.060	0.050
Lead	mg/L	0.0008	0.027	0.15	0.067	0.92	<0.00050	0.0012	<0.00050	<0.00050	0.00060
Lithium	mg/L	0.0027	0.048	0.012	0.14	0.032	0.0017	0.015	0.010	0.0024	0.0070
Magnesium	mg/L	2.3	5.4	7.7	15	51	5.1	1.0	1.6	4.9	5.1
Manganese	mg/L	0.052	4.6	0.40	3.8	12	0.0097	0.060	0.011	0.042	0.021
Mercury	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum	mg/L	0.14	0.0056	0.0018	0.0090	0.0030	0.079	0.12	0.053	0.32	0.21
Nickel	mg/L	0.00060	0.20	0.14	0.16	0.15	<0.00050	0.0006	0.00060	<0.00050	<0.00050
Phosphorous	mg/L	0.090	0.080	0.15	0.61	0.060	0.060	0.10	0.090	0.060	<0.05000
Potassium	mg/L	7.4	16	3.2	18	11	2.5	5.0	12	5.1	9.3
Selenium	mg/L	0.0018	0.021	0.0051	0.030	0.028	0.0023	0.017	0.0020	0.0011	0.0011
Silicon	mg/L	2.0	15	13	17	6.1	3.0	1.9	2.5	1.5	2.6
Silver	mg/L	<0.000080	0.034	0.0058	0.0085	0.0023	<0.000080	<0.000080	<0.000080	<0.000080	<0.000080
Sodium	mg/L	4.4	4.5	6.1	5.4	4.0	4.7	4.4	5.0	3.6	4.1
Strontium	mg/L	0.23	0.13	0.40	0.34	0.60	0.11	0.88	0.14	0.22	0.28
Sulphur	mg/L	14	306	107	209	181	10	20	42	23	8.1
Tellurium	mg/L	<0.00020	0.023	0.0036	0.0097	0.00080	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.00012	0.0016	0.00019	0.0011	0.00041	<0.00005	0.000050	0.00012	0.000070	0.00016
Thorium	mg/L	<0.00010	0.0029	0.00050	0.00060	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium	mg/L	0.0010	0.0073	0.0025	0.0069	0.0016	0.00080	0.00070	0.00090	0.00060	0.00090
Tungsten	mg/L	0.0012	0.00010	<0.00010	<0.00010	<0.00010	0.0010	0.015	0.0020	0.0024	0.0040
Uranium	mg/L	0.00010	0.020	0.0015	0.0080	0.0064	<0.00050	0.00086	<0.00050	0.00060	0.00010
Vanadium	mg/L	<0.0010	0.0090	<0.0010	0.0030	<0.0010	<0.0010	<0.0010	0.0040	<0.0010	0.0020
Zinc	mg/L	0.0040	0.55	9.5	0.15	0.25	<0.00100	0.0040	<0.00100	0.0010	0.0020
Zirconium	mg/L	<0.00010	<0.00010	<0.00010	0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010

Table B-11. NAG Extract Results

Parameter	Unit	Sample ID							
		W-009	W-014	W-022	W-030	W-046	W-053	W-055	W-072
		Wood (2021)							
Sample ID	Data Source								
Weight of pulp sample used	g	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Volume of 15% H ₂ O ₂ used	mL	250	250	250	250	250	250	250	250
pH	pH units	2.8	2.2	2.5	2.3	3.8	2.4	2.5	2.9
EC	mV	1069	3450	1600	2270	289	2220	1692	866
Acidity (to pH 8.3)	mg CaCO ₃ /L	369	760	340	517	69	501	375	225
Total Alkalinity (to pH 4.5)	mg CaCO ₃ /L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Sulphate	mg/L	326	618	262	412	86	498	298	231
Chloride	mg/L	--	--	--	--	--	--	--	--
Fluoride	mg/L	--	--	--	--	--	--	--	--
Total Dissolved Solids (TDS)	mg/L	--	--	--	--	--	--	--	--
Phosphorous (IC)	mg/L	<0.0050	0.015	0.12	0.0066	0.035	0.0082	<0.0050	0.0085
Hardness (CaCO ₃)	mg/L	62	58	31	19	54	105	30	111
Aluminum	mg/L	3.6	5.1	8.4	9.0	1.5	9.0	7.7	10
Antimony	mg/L	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00090
Arsenic	mg/L	0.0013	0.0017	0.0011	0.0046	<0.00020	0.00060	0.00090	0.0022
Barium	mg/L	0.18	0.071	0.17	0.17	0.020	0.11	0.20	0.072
Beryllium	mg/L	0.0042	0.0043	0.0030	0.00090	0.0015	0.0016	0.0016	0.0019
Bismuth	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	mg/L	0.030	0.060	0.020	<0.010	<0.010	0.010	0.050	0.030
Cadmium	mg/L	0.0023	0.0021	0.00020	0.0029	0.00094	0.0014	0.00017	0.012
Calcium	mg/L	17	16	8.4	4.5	15	24	7.4	40
Chromium	mg/L	0.0092	0.040	0.0050	0.016	0.0049	0.0096	0.0067	0.011
Cobalt	mg/L	0.31	0.17	0.37	0.11	0.079	0.16	0.23	0.068
Copper	mg/L	0.55	1.6	0.60	0.57	0.26	0.33	1.4	0.26
Iron	mg/L	84	69	4.4	25	0.060	23	12	4.0
Lead	mg/L	0.024	0.20	0.0073	0.010	0.0010	0.23	0.016	1.9
Lithium	mg/L	0.056	0.075	0.043	0.0075	0.0067	0.015	0.023	0.016
Magnesium	mg/L	5.0	4.1	2.5	1.8	4.3	11	2.9	2.9
Manganese	mg/L	41	0.21	0.041	0.087	9.4	4.0	0.12	4.2
Mercury	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.00002	0.00004	0.00001	<0.000010
Molybdenum	mg/L	0.00010	0.00080	0.00020	0.0017	0.035	0.00050	0.00030	0.010
Nickel	mg/L	0.12	0.13	0.085	0.088	0.044	0.11	0.087	0.066
Phosphorous	mg/L	<0.050	<0.050	0.15	<0.050	0.10	<0.050	<0.050	<0.050
Potassium	mg/L	11	8.1	14	12	2.9	15	11	10
Selenium	mg/L	0.024	0.030	0.0052	0.013	0.0019	0.0065	0.011	0.013
Silicon	mg/L	7.4	8.4	8.8	6.5	5.9	7.7	6.8	12
Silver	mg/L	0.0084	0.022	0.0044	0.0056	0.0016	0.0050	0.011	0.00097
Sodium	mg/L	3.5	6.3	2.8	2.9	3.6	3.6	3.0	3.3
Strontium	mg/L	0.39	0.44	0.11	0.75	0.17	1.4	0.076	2.9
Sulphur	mg/L	122	219	90	133	29	156	96	69
Tellurium	mg/L	0.0048	0.038	0.0038	0.022	<0.00020	0.0054	0.010	0.0011
Thallium	mg/L	0.0011	0.00067	0.0029	0.0013	0.00014	0.0014	0.0014	0.0016
Thorium	mg/L	0.00030	0.0031	0.0010	0.012	<0.00010	0.0034	0.00090	0.0096
Tin	mg/L	<0.00050	<0.00050	<0.00050	0.0011	<0.00050	<0.00050	<0.00050	<0.00050
Titanium	mg/L	0.0030	0.0054	0.0035	0.0043	0.0024	0.0057	0.0037	0.044
Tungsten	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00030	<0.00010	<0.00010	<0.00010
Uranium	mg/L	0.0042	0.0075	0.0026	0.025	0.00016	0.0091	0.0025	0.043
Vanadium	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0070	<0.0010	<0.0010	0.0060
Zinc	mg/L	0.78	0.066	0.083	0.040	0.24	0.13	0.11	0.94
Zirconium	mg/L	0.00010	0.00040	0.00020	0.00070	0.00020	0.00040	0.00020	0.30

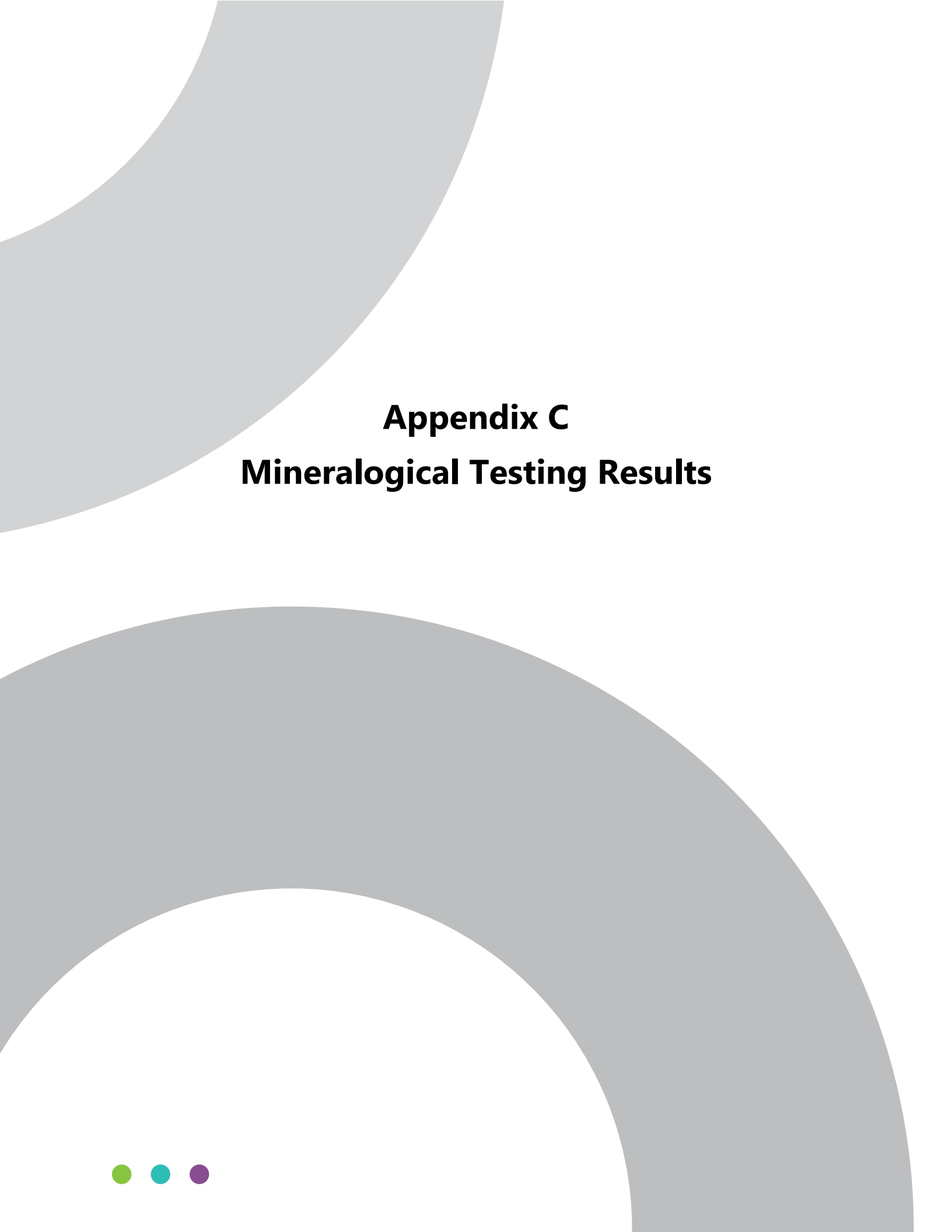


Table B-11. NAG Extract Results



Parameter	Unit	Sample ID						
		W-088	W-105	W-139	W-150	W-173	W-180	W-266
Sample ID	Data Source	Wood (2021)						
Weight of pulp sample used	g	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Volume of 15% H ₂ O ₂ used	mL	250	250	250	250	250	250	250
pH	pH units	2.4	2.6	2.6	2.8	2.4	3.3	2.5
EC	mV	2210	1283	2570	1115	2000	313	1890
Acidity (to pH 8.3)	mg CaCO ₃ /L	479	294	403	226	462	94	397
Total Alkalinity (to pH 4.5)	mg CaCO ₃ /L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Sulphate	mg/L	447	284	1084	260	402	81	373
Chloride	mg/L	--	--	--	--	--	--	--
Fluoride	mg/L	--	--	--	--	--	--	--
Total Dissolved Solids (TDS)	mg/L	--	--	--	--	--	--	--
Phosphorous (IC)	mg/L	0.026	0.026	<0.0050	0.026	0.28	<0.0050	0.017
Hardness (CaCO ₃)	mg/L	68	39	828	71	78	28	102
Aluminum	mg/L	7.2	7.1	4.4	6.5	8.4	3.5	5.9
Antimony	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.0027	0.0011	0.0043	0.0018	<0.00020	0.0014	0.0012
Barium	mg/L	0.13	0.12	0.071	0.26	0.14	0.38	0.14
Beryllium	mg/L	0.0043	0.0026	0.0010	0.0028	0.0030	0.0018	0.0074
Bismuth	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron	mg/L	<0.0100	0.020	0.010	0.010	<0.010	<0.010	0.16
Cadmium	mg/L	0.0018	0.0012	0.048	0.0020	0.0053	0.0035	0.0017
Calcium	mg/L	18	8.7	224	12	25	8.9	29
Chromium	mg/L	0.016	0.011	0.011	0.0031	0.026	0.010	0.015
Cobalt	mg/L	0.24	0.29	0.21	0.27	0.13	0.034	0.28
Copper	mg/L	0.76	0.45	0.23	0.95	2.3	0.080	1.7
Iron	mg/L	30	15	27	5.5	35	0.27	19
Lead	mg/L	0.17	0.020	3.1	0.028	0.28	0.060	0.053
Lithium	mg/L	0.054	0.052	0.0067	0.091	0.037	0.0047	0.19
Magnesium	mg/L	5.9	4.3	65	9.8	4.0	1.5	7.3
Manganese	mg/L	0.26	12	14	8.1	0.39	0.86	13
Mercury	mg/L	<0.000010	<0.000010	<0.000060	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum	mg/L	0.0036	0.00010	0.00010	<0.00010	0.024	0.020	0.00030
Nickel	mg/L	0.13	0.15	0.13	0.040	0.078	0.028	0.076
Phosphorous	mg/L	<0.050	<0.050	<0.050	<0.050	0.26	0.060	<0.050
Potassium	mg/L	17	18	8.8	38	17	5.5	16
Selenium	mg/L	0.010	0.0035	0.037	0.012	0.013	0.0094	0.020
Silicon	mg/L	9.2	7.7	5.4	9.1	6.7	5.3	11
Silver	mg/L	0.010	0.0021	0.0039	0.0054	0.0075	0.0035	0.024
Sodium	mg/L	4.3	4.1	3.8	4.1	3.6	2.9	3.3
Strontium	mg/L	0.54	0.11	2.4	0.071	0.21	1.2	0.42
Sulphur	mg/L	142	89	370	90	139	27	133
Tellurium	mg/L	0.011	0.00070	0.0027	0.0052	0.0096	0.0010	0.012
Thallium	mg/L	0.0028	0.0023	0.0011	0.0030	0.0018	0.00043	0.00092
Thorium	mg/L	0.0028	0.00080	0.0019	0.00020	0.00090	<0.00010	0.00080
Tin	mg/L	<0.00050	<0.00050	0.00090	<0.00050	<0.00050	<0.00050	<0.00050
Titanium	mg/L	0.0067	0.0032	0.0031	0.0043	0.0058	0.0026	0.0057
Tungsten	mg/L	<0.00010	<0.0001	0.00010	<0.00010	<0.00010	0.0026	<0.00010
Uranium	mg/L	0.011	0.0043	0.0035	0.0027	0.0089	0.0045	0.010
Vanadium	mg/L	0.0010	<0.0010	<0.0010	<0.0010	0.0040	0.0030	0.0010
Zinc	mg/L	0.17	0.20	16	0.28	0.80	0.23	0.053
Zirconium	mg/L	0.00060	0.00010	0.00040	<0.00010	0.00020	0.00030	0.00030





Appendix C

Mineralogical Testing Results



Table C-1. R-XRD Results

Lithology Group			Andesite, Tuff, and Metasediments										
Classification			Ore-Grade Materials			Mine Rock							
Zone			Portage		Camp	Portage					Camp		
Sample ID			009587	009626	009688	W-046	W-091	W-211	W-234	W-263	009555	W-063	009702
Drillhole			SP12-151	SP12-154	SP11-030	SP12-151	SP12-129	PM-DH-04	SP11-050	SP12-174	SP12-115	SP12-136	BL-0287
Depth (m)			86.5-88.5	21-23	41-42	98.5 - 100.5	189 - 191.1	150 - 151	51 - 52	204 - 206	195.1-196.1	54 - 56	62.3-76.2
Sulphides	Pyrite	FeS ₂	4.1	4.9	6.9	1.0	1.7	4.7	0.5	1.8	8.9	--	1.8
Sulphates	Gypsum	CaSO ₄ 2H ₂ O	--	--	--	--	--	--	--	--	--	--	--
Carbonates	Ankerite-Dolomite	Ca(Fe ²⁺ ,Mg,Mn)(CO ₃) ₂ -CaMg(CO ₃) ₂	--	--	--	--	2.0	2.7	8.9	--	--	0.8	--
	Dolomite	CaMg(CO ₃) ₂	--	18.3	7.6	--	--	--	--	--	9.1	--	8.9
	Calcite, magnesian	(Ca,Mg)CO ₃	0.6	--	9.6	--	14.6	--	13.4	8.2	5.5	18.3	6.9
	Calcite	CaCO ₃	--	0.3	--	--	--	7.7	--	--	--	--	--
	Siderite	Fe ²⁺ CO ₃	--	--	--	2.1	0.4	0.2	--	0.2	--	--	--
	Siderite, calcian	(Fe,Ca,Mg)CO ₃	--	--	--	--	--	--	--	--	0.3	--	--
Feldspar	K-Feldspar (Microcline)	KAlSi ₃ O ₈	--	--	9	--	--	10	--	--	22	--	47
	Plagioclase (Albite)	NaAlSi ₃ O ₈ - CaAl ₂ Si ₂ O ₈	40.5	36.3	4.4	36.0	20.1	36.6	33.7	36.2	21.6	19.4	5.9
Phyllosilicates	Biotite	K(Mg,Fe ²⁺) ₂ AlSi ₃ O ₁₀ (OH) ₂	--	--	--	--	4	7	2	6	--	--	--
	Illite/Muscovite 2M1	K _{0.65} Al _{2.0} Al _{0.65} Si _{3.35} O ₁₀ (OH) ₂ -KAl ₂ AlSi ₃ O ₁₀ (OH) ₂	34	23	32	34	23	17	7	11	13	19	15
	Clinochlore	(Mg,Fe ²⁺) ₂ Al(Si ₃ Al)O ₁₀ (OH) ₈	8.3	--	--	13.2	16.0	--	14.2	12.0	--	17.2	--
	Kaolinite	Al ₂ Si ₂ O ₅ (OH) ₄	2.0	0.7	--	--	--	--	--	--	--	--	--
	Phlogopite 1M	KMg ₃ AlSi ₃ O ₁₀ (OH) ₂	--	--	8.9	--	--	--	--	--	4.8	--	5.8
Oxides	Quartz	SiO ₂	8.5	13.0	19.1	12.7	17.9	11.2	14.3	19.2	14.8	21.7	8.2
	Magnetite	Fe ²⁺ Fe ³⁺ ₂ O ₄	0.4	1.8	1.7	0.5	--	2.3	4.8	2.8	--	0.6	--
	Ilmenite	Fe ²⁺ TiO ₃	--	0.6	0.8	--	0.9	--	--	2.8	--	3.1	0.6
	Rutile	TiO ₂	1.2	0.7	0.5	0.9	--	--	1.1	--	--	--	--
Halides	Fluorite	CaF ₂	--	--	--	--	--	--	--	--	--	--	--
	Halite	NaCl	--	--	--	--	--	--	--	--	--	--	--
Total			100	100	100	100	100	100	100	100	100	100	100



Table C-1. R-XRD Results



Lithology Group			Trachyte							Volcanic Breccia				Porphyry		
Classification			Ore-Grade Materials			Mine Rock				Ore-Grade Materials	Mine Rock			Mine Rock		
Zone			Portage				Camp			Portage		East Extension		Portage		
Sample ID			W-014	W-266	009573	W-041	W-072	W-217	009668	W-312	009594	W-139	W-206	A00356169	W-221	009608
Drillhole			PM-DH-03	SM20-003	SP12-142	SM20-002	SP12-123	SG13-206	SP12-162B	SPW20-001	SP12-171	SP12-113	SP11-067	SP11-067	SG13-205	SP12-183
Depth (m)			245 - 246	298 - 299	41-43	13 - 14	303 - 305	249 - 251	346-348	20 - 21	271-273	150 - 151	20 - 21	23-25	97 - 99	130-132
Sulphides	Pyrite	FeS ₂	13	6.6	10.4	0.3	1.9	6.9	9.5	0.9	8.5	12	0.6	5.0	2.1	8.1
Sulphates	Gypsum	CaSO ₄ 2H ₂ O	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
Carbonates	Ankerite-Dolomite	Ca(Fe ²⁺ ,Mg,Mn)(CO ₃) ₂ -CaMg(CO ₃) ₂	--	--	--	19.5	--	5.0	--	16.4	--	11.5	9.7	--	2.1	--
	Dolomite	CaMg(CO ₃) ₂	--	--	--	--	--	--	0.7	--	1.1	--	--	5.7	--	7.2
	Calcite, magnesian	(Ca,Mg)CO ₃	--	--	2.7	--	--	4.6	7.4	--	0.8	0.9	7.0	7.1	5.4	0.4
	Calcite	CaCO ₃	--	0.8	--	--	--	--	--	--	--	--	--	--	--	--
	Siderite	Fe ²⁺ CO ₃	--	1.2	--	0.3	0.6	--	--	--	--	0.4	--	--	--	--
	Siderite, calcian	(Fe,Ca,Mg)CO ₃	--	--	--	--	--	--	--	--	0.3	--	--	0.4	--	0.6
Feldspar	K-Feldspar (Microcline)	KAlSi ₃ O ₈	23	3	40	6	61	34	46	--	22	45	44	50	54	12
	Plagioclase (Albite)	NaAlSi ₃ O ₈ - CaAl ₂ Si ₂ O ₈	5.3	17.1	--	33.5	10.5	5.8	3.8	17.9	18.0	14.0	1.1	--	8.6	8.7
Phyllosilicates	Biotite	K(Mg,Fe ²⁺) ₃ AlSi ₃ O ₁₀ (OH) ₂	20	26	--	13	4	4	--	9	--	2	4	--	4	--
	Illite/Muscovite 2M1	K _{0.65} Al _{2.0} Al _{0.65} Si _{3.35} O ₁₀ (OH) ₂ -KAl ₂ AlSi ₃ O ₁₀ (OH) ₂	30	18	26	13	17	14	11	34	31	7	16	16	18	37
	Clinocllore	(Mg,Fe ²⁺) ₂ Al(Si ₅ Al)O ₁₀ (OH) ₈	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Kaolinite	Al ₂ Si ₂ O ₅ (OH) ₄	--	--	0.8	0.3	--	--	--	--	--	--	--	--	--	--
	Phlogopite 1M	KMg ₃ AlSi ₃ O ₁₀ (OH) ₂	--	--	5.8	--	--	--	13.4	--	14.3	--	--	2.1	--	15.3
Oxides	Quartz	SiO ₂	7.2	19.0	12.0	11.7	3.7	25.1	2.5	21.0	3.3	6.3	14.2	11.5	5.9	9.9
	Magnetite	Fe ²⁺ Fe ³⁺ ₂ O ₄	--	6.1	--	2.6	--	--	--	--	--	--	1.7	--	--	--
	Ilmenite	Fe ²⁺ TiO ₃	--	--	--	--	--	--	--	1.2	--	--	1.3	1.4	--	--
	Rutile	TiO ₂	1.6	2.4	1.3	--	--	--	--	--	0.9	1.0	--	--	--	0.5
Halides	Fluorite	CaF ₂	--	--	--	--	1.6	--	5.6	--	--	--	--	--	--	--
	Halite	NaCl	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5
Total			100	100	100	100	100	100	100	100	100	100	100	100	100	100





Appendix D
Certificates of Analysis



CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
1	W-001	Drill Core	Dry	1.60	
2	W-002	Crushed Rock	Damp	2.20	
3	W-003	Drill Core	Damp	4.10	
4	W-004	Crushed Rock	Damp	1.45	Hole in bag
5	W-005	Drill Core	Dry	2.55	
6	W-006	Drill Core	Dry	1.55	
7	W-007	Drill Core	Dry	1.45	
8	W-008	Drill Core	Damp	2.00	
9	W-009	Drill Core	Dry	1.95	
10	W-010	Drill Core	Dry	2.65	
11	W-011	Drill Core	Dry	2.55	
12	W-012	Crushed Rock	Dry	1.30	
13	W-013	Drill Core	Dry	1.50	
14	W-014	Drill Core	Dry	1.60	
15	W-015	Drill Core	Dry	1.40	

Sample Receipt Info:	
Date Samples Rec'd:	12-Jul-21
No. of Samples Rec'd:	334
Samples Rec'd By:	Andy

Analytical Instructions:	
From:	Anna Klein via email/COC confirmation
Date:	15-Jul-21

CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
16	W-016	Drill Core	Dry	1.60	
17	W-017	Drill Core	Dry	0.60	Hole in bag
18	W-018	Drill Core	Dry	1.60	Hole in bag
19	W-019	Drill Core	Dry	1.45	
20	W-020	Rock	Dry	0.20	
21	W-021	Drill Core	Damp	1.40	
22	W-022	Crushed Rock	Dry	2.45	
23	W-023	Drill Core	Dry	1.40	
24	W-024	Drill Core	Dry	2.40	
25	W-025	Drill Core	Dry	1.40	
26	W-026	Drill Core	Dry	1.65	
27	W-027	Drill Core	Dry	3.15	
28	W-028	Drill Core	Dry	1.10	
29	W-029	Drill Core	Dry	2.10	
30	W-030	Drill Core	Dry	3.05	
31	W-031	Drill Core	Dry	1.70	
32	W-032	Drill Core	Dry	3.35	
33	W-033	Drill Core	Dry	4.55	
34	W-034	Drill Core	Dry	3.25	
35	W-035	Drill Core	Dry	1.85	
36	W-036	Fines, Rock	Damp	1.50	
37	W-037	Drill Core	Dry	3.35	
38	W-038	Drill Core	Dry	3.60	
39	W-039	Drill Core	Dry	3.75	
40	W-040	Drill Core	Dry	1.35	Hole in bag
41	W-041	Drill Core	Dry	3.35	

Sample Receipt Info:

CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
42	W-042	Drill Core	Dry	9.10	
43	W-043	Fines, Rock	Dry	2.50	
44	W-044	Drill Core	Dry	7.35	
45	W-045	Crushed Rock	Dry	0.60	
46	W-046	Drill Core	Dry	6.10	
47	W-047	Drill Core	Dry	4.30	Hole in bag
48	W-048	Drill Core	Dry	5.35	
49	W-049	Drill Core	Dry	4.30	
50	W-050	Drill Core	Dry	8.80	
51	W-051	Drill Core	Dry	4.00	Hole in bag
52	W-052	Drill Core	Dry	7.05	
53	W-053	Drill Core	Dry	3.10	
54	W-054	Drill Core	Dry	7.25	
55	W-055	Drill Core	Dry	2.60	
56	W-056	Drill Core	Dry	6.45	Hole in bag
57	W-057	Drill Core	Dry	4.15	
58	W-058	Drill Core	Dry	8.40	
59	W-059	Drill Core	Dry	8.45	
60	W-060	Drill Core	Dry	8.30	
61	W-061	Drill Core	Dry	9.15	
62	W-062	Drill Core	Dry	8.10	
63	W-063	Drill Core	Dry	8.90	
64	W-064	Drill Core	Dry	7.55	
65	W-065	Drill Core	Dry	8.70	Hole in bag
66	W-066	Drill Core	Dry	8.50	
67	W-067	Drill Core	Dry	8.35	

Sample Receipt Info:

CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
68	W-068	Drill Core	Dry	7.95	
69	W-069	Drill Core	Dry	9.20	
70	W-070	Drill Core	Dry	7.70	
71	W-071	Drill Core	Dry	9.35	
72	W-072	Drill Core	Dry	6.85	
73	W-073	Drill Core	Dry	8.75	
74	W-074	Drill Core	Dry	7.10	
75	W-075	Drill Core	Dry	4.20	
76	W-076	Drill Core	Dry	7.20	
77	W-077	Drill Core	Dry	8.60	
78	W-078	Drill Core	Dry	8.00	Hole in bag
79	W-079	Drill Core	Dry	8.75	
80	W-080	Drill Core	Dry	4.10	
81	W-081	Drill Core	Dry	8.35	
82	W-082	Drill Core	Dry	4.60	Hole in bag
83	W-083	Drill Core	Dry	7.10	
84	W-084	Drill Core	Dry	9.35	2 Bags
85	W-085	Drill Core	Dry	7.75	
86	W-086	Drill Core	Dry	7.40	
87	W-087	Drill Core	Dry	7.40	
88	W-088	Crushed Rock	Damp	1.80	
89	W-089	Drill Core	Dry	7.80	Hole in bag
90	W-090	Drill Core	Dry	2.80	
91	W-091	Drill Core	Dry	8.55	Hole in bag
92	W-092	Drill Core	Dry	4.30	
93	W-093	Drill Core	Dry	7.25	

Sample Receipt Info:

CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
94	W-094	Drill Core	Dry	4.35	Hole in bag
95	W-095	Drill Core	Dry	7.60	
96	W-096	Drill Core	Dry	4.50	
97	W-097	Drill Core	Dry	10.35	
98	W-098	Drill Core	Dry	4.70	
99	W-099	Drill Core	Dry	4.80	
100	W-100	Drill Core	Dry	4.25	
101	W-101	Drill Core	Dry	8.20	
102	W-102	Drill Core	Dry	3.65	
103	W-103	Drill Core	Dry	4.30	
104	W-104	Drill Core	Dry	6.45	2 Bags
105	W-105	Drill Core	Dry	5.40	
106	W-106	Drill Core	Dry	7.30	2 Bags
107	W-107	Drill Core	Dry	5.30	
108	W-108	Drill Core	Dry	5.75	2 Bags
109	W-109	Drill Core	Dry	2.65	
110	W-110	Drill Core	Dry	7.50	2 Bags
111	W-111	Drill Core	Dry	5.10	
112	W-112	Drill Core	Dry	7.50	2 Bags
113	W-113	Drill Core	Dry	3.60	
114	W-114	Drill Core	Dry	6.50	2 Bags
115	W-115	Drill Core	Dry	8.10	
116	W-116	Drill Core	Dry	5.95	2 Bags
117	W-117	Drill Core	Dry	9.00	2 Bags
118	W-118	Drill Core	Dry	7.55	2 Bags
119	W-119	Drill Core	Dry	3.90	

Sample Receipt Info:



CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
120	W-120	Drill Core	Dry	6.20	2 Bags
121	W-121	Drill Core	Dry	3.75	
122	W-122	Drill Core	Dry	6.70	2 Bags
123	W-123	Drill Core	Dry	3.90	
124	W-124	Drill Core	Dry	5.40	2 Bags
125	W-125	Drill Core	Dry	2.95	
126	W-126	Drill Core	Dry	6.00	2 Bags
127	W-127	Drill Core	Dry	2.80	2 Bags
128	W-128	Drill Core	Dry	7.75	2 Bags
129	W-129	Crushed Rock	Dry	1.75	
130	W-130	Drill Core	Dry	6.00	2 Bags
131	W-131	Drill Core	Dry	4.15	
132	W-132	Drill Core	Dry	2.85	
133	W-133	Drill Core	Dry	3.85	
134	W-134	Drill Core	Dry	6.00	2 Bags
135	W-135	Drill Core	Dry	4.25	
136	W-136	Drill Core	Dry	7.75	2 Bags
137	W-137	Drill Core	Dry	4.15	
138	W-138	Drill Core	Dry	6.80	2 Bags
139	W-139	Drill Core	Dry	4.35	
140	W-140	Drill Core	Dry	7.65	2 Bags
141	W-141	Drill Core	Dry	3.60	
142	W-142	Drill Core	Wet	7.25	2 Bags
143	W-143	Drill Core	Dry	6.95	2 Bags
144	W-144	Drill Core	Dry	7.85	2 Bags
145	W-145	Drill Core	Dry	6.05	2 Bags

Sample Receipt Info:

CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
146	W-146	Drill Core	Dry	7.65	2 Bags
147	W-147	Drill Core	Dry	7.20	2 Bags
148	W-148	Drill Core	Dry	7.15	2 Bags
149	W-149	Drill Core	Dry	6.45	2 Bags
150	W-150	Drill Core	Dry	7.60	2 Bags
151	W-151	Drill Core	Dry	8.05	2 Bags
152	W-152	Drill Core	Dry	9.10	2 Bags
153	W-153	Drill Core	Dry	6.25	2 Bags
154	W-154	Drill Core	Dry	4.60	2 Bags
155	W-155	Drill Core	Dry	6.05	2 Bags
156	W-156	Drill Core	Dry	7.45	2 Bags
157	W-157	Drill Core	Dry	8.05	2 Bags
158	W-158	Drill Core	Dry	7.05	2 Bags
159	W-159	Drill Core	Dry	7.25	2 Bags
160	W-160	Drill Core	Dry	4.20	2 Bags
161	W-161	Drill Core	Dry	7.45	2 Bags
162	W-162	Drill Core	Dry	3.70	
163	W-163	Drill Core	Dry	5.00	
164	W-164	Drill Core	Dry	2.15	
165	W-165	Drill Core	Dry	6.30	
166	W-166	Drill Core	Dry	7.90	
167	W-167	Drill Core	Dry	5.60	
168	W-168	Drill Core	Dry	4.15	
169	W-169	Drill Core	Dry	5.10	
170	W-170	Drill Core	Dry	4.35	
171	W-171	Drill Core	Dry	8.00	2 Bags

Sample Receipt Info:

CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
172	W-172	Drill Core	Dry	4.65	2 Bags
173	W-173	Drill Core	Dry	4.75	
174	W-174	Drill Core	Dry	5.55	2 Bags
175	W-175	Drill Core	Dry	7.15	2 Bags
176	W-176	Drill Core	Dry	5.30	2 Bags
177	W-177	Drill Core	Dry	6.05	2 Bags
178	W-178	Drill Core	Dry	5.50	2 Bags
179	W-179	Drill Core	Dry	5.95	2 Bags
180	W-180	Crushed Rock	Dry	54.75	2 Bags
181	W-181	Drill Core	Dry	6.90	2 Bags
182	W-182	Crushed Rock	Dry	5.05	2 Bags
183	W-183	Drill Core	Dry	6.05	2 Bags
184	W-184	Drill Core	Dry	5.80	2 Bags
185	W-185	Drill Core	Dry	4.55	2 Bags
186	W-186	Crushed Rock	Dry	5.10	2 Bags
187	W-187	Drill Core	Dry	5.15	2 Bags
188	W-188	Crushed Rock	Dry	4.10	
189	W-189	Drill Core	Dry	8.85	2 Bags
190	W-190	Drill Core	Dry	5.25	2 Bags
191	W-191	Drill Core	Dry	8.35	2 Bags
192	W-192	Drill Core	Dry	7.40	2 Bags
193	W-193	Drill Core	Dry	7.35	2 Bags
194	W-194	Drill Core	Dry	7.05	2 Bags
195	W-195	Drill Core	Dry	7.35	2 Bags
196	W-196	Drill Core	Dry	7.20	2 Bags
197	W-197	Drill Core	Dry	8.40	2 Bags

Sample Receipt Info:

CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
198	W-198	Drill Core	Dry	6.55	2 Bags
199	W-199	Drill Core	Dry	6.25	
200	W-200	Drill Core	Dry	8.10	2 Bags
201	W-201	Drill Core	Dry	8.15	2 Bags
202	W-202	Drill Core	Dry	7.35	2 Bags
203	W-203	Drill Core	Dry	7.55	2 Bags
204	W-204	Drill Core	Dry	7.75	2 Bags
205	W-205	Drill Core	Dry	6.25	2 Bags
206	W-206	Drill Core	Dry	3.55	
207	W-207	Drill Core	Dry	4.15	
208	W-208	Drill Core	Dry	3.50	
209	W-209	Drill Core	Dry	2.85	
210	W-210	Drill Core	Dry	3.80	
211	W-211	Drill Core	Dry	3.90	
212	W-212	Drill Core	Dry	4.75	
213	W-213	Drill Core	Dry	6.10	2 Bags
214	W-214	Drill Core	Dry	2.50	
215	W-215	Drill Core	Dry	6.45	
216	W-216	Drill Core	Dry	4.75	
217	W-217	Drill Core	Dry	6.90	2 Bags
218	W-218	Drill Core	Dry	2.75	
219	W-219	Drill Core	Dry	5.70	
220	W-220	Drill Core	Dry	4.30	
221	W-221	Drill Core	Dry	7.10	2 Bags
222	W-222	Drill Core	Dry	3.95	
223	W-223	Drill Core	Dry	7.85	2 Bags

Sample Receipt Info:

CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
224	W-224	Drill Core	Dry	4.45	
225	W-225	Drill Core	Dry	7.20	
226	W-226	Drill Core	Dry	3.70	
227	W-227	Drill Core	Dry	5.60	
228	W-228	Drill Core	Dry	3.75	
229	W-229	Drill Core	Dry	7.95	
230	W-230	Drill Core	Dry	3.95	
231	W-231	Drill Core	Dry	7.60	2 Bags
232	W-232	Drill Core	Dry	4.35	
233	W-233	Drill Core	Dry	1.95	
234	W-234	Drill Core	Dry	2.25	
235	W-235	Drill Core	Dry	5.90	
236	W-236	Drill Core	Dry	6.70	2 Bags
237	W-237	Drill Core	Dry	6.15	
238	W-238	Drill Core	Dry	6.60	2 Bags
239	W-239	Drill Core	Dry	7.95	2 Bags
240	W-240	Drill Core	Dry	7.70	2 Bags
241	W-241	Drill Core	Dry	3.80	
242	W-242	Drill Core	Dry	3.95	
243	W-243	Drill Core	Dry	3.35	
244	W-244	Drill Core	Dry	5.95	
245	W-245	Drill Core	Dry	3.60	
246	W-246	Drill Core	Dry	0.70	
247	W-247	Drill Core	Dry	1.50	
248	W-248	Drill Core	Dry	4.35	
249	W-249	Drill Core	Dry	4.00	

Sample Receipt Info:



CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
250	W-250	Drill Core	Dry	4.75	
251	W-251	Drill Core	Dry	3.90	
252	W-252	Drill Core	Dry	3.90	
253	W-253	Drill Core	Dry	4.70	
254	W-254	Drill Core	Dry	3.70	
255	W-255	Fines	Dry	1.85	
256	W-256	Drill Core	Dry	4.25	
257	W-257	Rocks	Dry	1.80	
258	W-258	Drill Core	Dry	3.80	
259	W-259	Fines	Dry	1.90	
260	W-260	Drill Core	Dry	3.90	
261	W-261	Drill Core	Dry	3.65	
262	W-262	Drill Core	Dry	3.65	
263	W-263	Drill Core	Dry	7.20	2 Bags
264	W-264	Drill Core	Dry	4.90	
265	W-265	Drill Core	Dry	7.45	2 Bags
266	W-266	Crushed Rock	Dry	1.35	
267	W-267	Drill Core	Dry	7.25	2 Bags
268	W-268	Drill Core	Dry	1.45	
269	W-269	Drill Core	Dry	7.20	2 Bags
270	W-270	Fines, Rock	Damp	1.05	
271	W-271	Drill Core	Dry	4.40	
272	W-272	Drill Core	Dry	3.80	
273	W-273	Drill Core	Dry	4.25	
274	W-274	Drill Core	Dry	3.95	
275	W-275	Drill Core	Dry	2.10	

Sample Receipt Info:



CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
276	W-276	Drill Core	Dry	4.00	
277	W-277	Drill Core	Dry	3.00	
278	W-278	Drill Core	Dry	3.65	
279	W-279	Drill Core	Dry	2.50	
280	W-280	Drill Core	Dry	4.10	
281	W-281	Drill Core	Dry	3.75	
282	W-282	Drill Core	Dry	3.95	
283	W-283	Drill Core	Dry	3.60	
284	W-284	Drill Core	Dry	4.60	
285	W-285	Drill Core	Dry	3.25	
286	W-286	Drill Core	Dry	4.15	
287	W-287	Drill Core	Dry	3.15	
288	W-288	Drill Core	Dry	4.30	
289	W-289	Drill Core	Dry	4.90	
290	W-290	Drill Core	Dry	4.10	
291	W-291	Drill Core	Dry	4.55	
292	W-292	Drill Core	Dry	4.10	
293	W-293	Drill Core	Dry	4.80	
294	W-294	Drill Core	Dry	4.15	
295	W-295	Drill Core	Dry	3.85	
296	W-296	Drill Core	Dry	4.20	
297	W-297	Drill Core	Dry	4.20	
298	W-298	Drill Core	Dry	4.25	
299	W-299	Drill Core	Dry	4.20	
300	W-300	Drill Core	Dry	8.70	2 Bags
301	W-301	Drill Core	Dry	3.65	

Sample Receipt Info:

CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
302	W-302	Drill Core	Dry	3.70	
303	W-303	Drill Core	Dry	4.45	
304	W-304	Drill Core	Dry	4.40	
305	W-305	Drill Core	Dry	4.10	
306	W-306	Drill Core	Dry	4.10	
307	W-307	Drill Core	Dry	3.85	
308	W-308	Drill Core	Dry	4.50	
309	W-309	Drill Core	Dry	3.35	
310	W-310	Drill Core	Dry	4.30	
311	W-311	Drill Core	Dry	3.90	
312	W-312	Drill Core	Dry	4.85	
313	W-313	Drill Core	Damp	3.10	
314	W-314	Drill Core	Dry	3.95	
315	W-315	Drill Core	Dry	4.30	
316	W-316	Drill Core	Dry	4.20	
317	W-317	Drill Core	Dry	4.50	
318	W-318	Drill Core	Dry	4.15	
319	W-319	Drill Core	Dry	3.70	
320	W-320	Drill Core	Dry	4.05	
321	W-321	Drill Core	Dry	4.10	
322	W-322	Drill Core	Dry	3.90	
323	W-323	Drill Core	Dry	3.60	
324	W-324	Drill Core	Dry	4.30	
325	W-325	Drill Core	Dry	3.50	
326	W-326	Drill Core	Dry	5.25	
327	W-327	Drill Core	Dry	3.75	

Sample Receipt Info:



CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B8)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
328	W-328	Drill Core	Dry	5.20	
329	W-329	Drill Core	Dry	3.25	
330	W-330	Drill Core	Dry	4.85	
331	W-331	Drill Core	Dry	3.60	
332	W-332	Drill Core	Dry	5.55	
333	W-333	Drill Core	Dry	3.80	
334	W-334	Drill Core	Dry	5.35	

Sample Receipt Info:

Total wt of sample rec'd (kg): 1715.85

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon	Total Inorganic C	CaCO ₃ Equivalents [†]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	Ap ³	STD Sobek NP	NNP ⁴	NPR ⁵
		Units: pH Units		wt.%	wt %	kg CaCO ₃ /tonne	wt.%	wt %	wt %		kg CaCO ₃ /tonne		
		0.01		0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5		
Reported Detection Limit:													
1	W-001	8.2	None	0.14	<0.02	<1.7	2.17	<0.01	2.17	67.8	8.7	-59.1	0.1
2	W-002	8.2	None	0.46	<0.02	<1.7	4.2	0.03	4.17	130.3	11.0	-119.3	0.1
3	W-003	8.6	Strong	3.83	3.16	263.3	2.35	0.19	2.16	67.5	313.1	245.6	4.6
4	W-004	7.8	None	0.07	<0.02	<1.7	5.84	0.03	5.81	181.6	8.4	-173.2	0.0
5	W-005	9.0	Moderate	0.2	0.07	5.8	1.00	0.03	0.97	30.3	16.6	-13.7	0.5
6	W-006	8.3	Moderate	0.37	0.25	20.8	0.90	<0.01	0.90	28.1	25.1	-3.0	0.9
7	W-007	8.1	None	0.17	<0.02	<1.7	3.03	0.03	3.00	93.8	16.2	-77.6	0.2
8	W-008	7.9	None	<0.02	<0.02	<1.7	1.31	0.03	1.28	40.0	3.9	-36.1	0.1
9	W-009	8.0	None	0.62	<0.02	<1.7	2.5	0.03	2.47	77.2	14.0	-63.2	0.2
10	W-010	7.9	None	0.26	<0.02	<1.7	0.9	0.03	0.87	27.2	16.5	-10.7	0.6
11	W-011	7.6	None	0.17	<0.02	<1.7	1.04	<0.01	1.04	32.5	16.2	-16.3	0.5
12	W-012	7.5	None	<0.02	<0.02	<1.7	7.45	0.03	7.42	231.9	3.3	-228.6	0.0
13	W-013	6.6	None	0.52	<0.02	<1.7	4.97	0.04	4.93	154.1	9.2	-144.9	0.1
14	W-014	7.9	None	0.42	<0.02	<1.7	6.95	0.03	6.92	216.3	10.2	-206.1	0.0
15	W-015	7.1	None	<0.02	<0.02	<1.7	6.15	0.03	6.12	191.3	10.6	-180.7	0.1
16	W-016	9.3	Strong	1.16	0.98	81.7	1.07	<0.01	1.07	33.4	104.1	70.7	3.1
17	W-017	7.2	None	0.24	<0.02	<1.7	0.96	0.04	0.92	28.8	4.9	-23.9	0.2
18	W-018	7.5	None	0.02	<0.02	<1.7	2.68	0.03	2.65	82.8	4.0	-78.8	0.0
19	W-019	6.8	None	<0.02	<0.02	<1.7	4.51	0.04	4.47	139.7	4.7	-135.0	0.0
20	W-020	8.7	None	<0.02	<0.02	<1.7	2.94	<0.01	2.94	91.9	8.4	-83.5	0.1
21	W-021	7.8	None	0.08	<0.02	<1.7	3.39	<0.01	3.39	105.9	3.8	-102.1	0.0
22	W-022	6.3	None	<0.02	<0.02	<1.7	1.53	0.03	1.50	46.9	8.1	-38.8	0.2
23	W-023	7.9	None	0.10	<0.02	<1.7	0.89	0.04	0.85	26.6	16.5	-10.1	0.6
24	W-024	9.0	Strong	1.63	1.46	121.7	0.5	<0.01	0.50	15.6	135.5	119.9	8.7
25	W-025	7.9	None	0.16	0.03	2.5	2.42	<0.01	2.42	75.6	13.5	-62.1	0.2
26	W-026	7.9	None	0.05	<0.02	<1.7	2.67	<0.01	2.67	83.4	13.2	-70.2	0.2
27	W-027	9.2	None	<0.02	<0.02	<1.7	0.17	<0.01	0.17	5.3	18.5	13.2	3.5
28	W-028	8.3	None	0.03	<0.02	<1.7	0.01	0.01	<0.01	<0.3	5.8	5.8	N/A
29	W-029	8.3	None	<0.02	<0.02	<1.7	1.87	0.05	1.82	56.9	13.2	-43.7	0.2
30	W-030	7.9	None	<0.02	<0.02	<1.7	2.68	0.02	2.66	83.1	5.3	-77.8	0.1
31	W-031	8.4	Strong	0.68	0.50	41.7	2.04	0.03	2.01	62.8	67.7	4.9	1.1
32	W-032	8.5	Strong	1.38	0.90	75.0	4.16	0.03	4.13	129.1	118.5	-10.6	0.9
33	W-033	8.9	Strong	0.67	0.63	52.5	0.06	0.02	0.04	1.3	88.6	87.4	70.9
34	W-034	9.1	Moderate	2.39	2.13	177.5	0.45	<0.01	0.45	14.1	173.2	159.1	12.3
35	W-035	8.3	None	<0.02	<0.02	<1.7	1.33	<0.01	1.33	41.6	4.2	-37.4	0.1
36	W-036	6.4	None	0.30	<0.02	<1.7	2.05	0.05	2.00	62.5	6.7	-55.8	0.1
37	W-037	8.9	Strong	1.20	1.00	83.3	0.86	0.03	0.83	25.9	102.6	76.7	4.0
38	W-038	8.8	Strong	1.59	1.14	95.0	2.68	0.04	2.64	82.5	135.5	53.0	1.6
39	W-039	9.3	Moderate	1.96	1.73	144.2	0.16	0.04	0.12	3.8	147.5	143.8	39.3

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon wt. %	Total Inorganic C wt %	CaCO ₃ Equivalents ⁻¹ kg CaCO ₃ /tonne	Total Sulphur wt. %	Sulphate Sulphur wt %	Sulphide Sulphur wt %	AP ⁻³	STD Sobek NP kg CaCO ₃ /tonne	NNP ⁻⁴	NPR ⁻⁵
		<i>Units:</i>											
		<i>Reported Detection Limit:</i>											
40	W-040	8.2	None	<0.02	<0.02	<1.7	4.63	0.04	4.59	143.4	13.4	-130.0	0.1
41	W-041	9.6	Moderate	2.06	1.98	165.0	0.08	<0.01	0.08	2.5	169.8	167.3	67.9
42	W-042	8.8	Strong	2.57	2.47	205.8	0.08	0.03	0.05	1.6	181.6	180.0	116.2
43	W-043	7.9	Moderate	0.12	0.07	5.8	3.42	0.03	3.39	105.9	15.8	-90.1	0.1
44	W-044	7.9	None	0.33	0.05	4.2	0.3	0.03	0.27	8.4	17.4	9.0	2.1
45	W-045	8.6	None	0.32	<0.02	<1.7	1.49	0.04	1.45	45.3	6.9	-38.4	0.2
46	W-046	8.0	None	0.24	<0.02	<1.7	0.43	<0.01	0.43	13.4	13.4	0.0	1.0
47	W-047	9.2	Strong	2.25	2.03	169.2	0.37	<0.01	0.37	11.6	180.7	169.1	15.6
48	W-048	8.1	None	<0.02	<0.02	<1.7	3.56	0.03	3.53	110.3	11.3	-99.0	0.1
49	W-049	9.1	Strong	3.05	2.75	229.2	0.47	<0.01	0.47	14.7	211.3	196.6	14.4
50	W-050	9.1	Moderate	2.24	2.00	166.7	0.25	0.02	0.23	7.2	161.1	153.9	22.4
51	W-051	9.2	Strong	0.39	0.33	27.5	0.36	0.03	0.33	10.3	38.8	28.5	3.8
52	W-052	8.6	Moderate	1.93	1.29	107.5	4.05	0.03	4.02	125.6	150.4	24.8	1.2
53	W-053	8.5	None	0.14	0.04	3.3	2.67	0.03	2.64	82.5	14.7	-67.8	0.2
54	W-054	8.9	Strong	2.02	1.44	120.0	2.69	<0.01	2.69	84.1	165.8	81.7	2.0
55	W-055	7.8	None	<0.02	<0.02	<1.7	2.02	<0.01	2.02	63.1	5.8	-57.3	0.1
56	W-056	9.5	Moderate	0.65	0.59	49.2	0.14	<0.01	0.14	4.4	59.3	54.9	13.6
57	W-057	8.7	Strong	1.53	1.51	125.8	<0.01	<0.01	<0.01	<0.3	146.1	146.1	N/A
58	W-058	9.4	Moderate	1.07	0.91	75.8	0.23	0.03	0.20	6.3	82.0	75.8	13.1
59	W-059	8.3	Strong	1.78	1.67	139.2	0.43	0.03	0.40	12.5	150.1	137.6	12.0
60	W-060	8.3	Moderate	1.25	1.05	87.5	1.03	0.03	1.00	31.3	101.0	69.8	3.2
61	W-061	8.8	Strong	1.82	1.68	140.0	0.46	0.03	0.43	13.4	142.7	129.3	10.6
62	W-062	8.4	Strong	1.9	1.69	140.8	0.33	0.01	0.32	10.0	128.9	118.9	12.9
63	W-063	8.7	Strong	1.97	1.89	157.5	0.15	0.03	0.12	3.8	167.2	163.5	44.6
64	W-064	8.6	Moderate	1.92	1.74	145.0	0.22	<0.01	0.22	6.9	132.3	125.4	19.2
65	W-065	8.5	Moderate	1.51	1.03	85.8	2.92	0.03	2.89	90.3	103.3	13.0	1.1
66	W-066	9.1	Strong	1.21	1.08	90.0	0.46	<0.01	0.46	14.4	95.9	81.5	6.7
67	W-067	8.6	Strong	3.46	3.22	268.3	0.41	<0.01	0.41	12.8	226.2	213.4	17.7
68	W-068	9.1	Strong	1.69	1.51	125.8	0.59	<0.01	0.59	18.4	142.2	123.8	7.7
69	W-069	9.1	Moderate	0.79	0.47	39.2	1.19	0.03	1.16	36.3	62.0	25.8	1.7
70	W-070	9.2	Strong	1.36	1.05	87.5	2.06	<0.01	2.06	64.4	127.2	62.8	2.0
71	W-071	9.0	Moderate	1.84	1.36	113.3	2.24	0.03	2.21	69.1	131.7	62.6	1.9
72	W-072	7.7	None	0.08	<0.02	<1.7	1.18	0.07	1.11	34.7	16.5	-18.2	0.5
73	W-073	8.4	Moderate	2.03	1.59	132.5	1.91	0.03	1.88	58.8	137.8	79.1	2.3
74	W-074	9.0	Strong	1.11	1.03	85.8	0.06	0.03	0.03	0.9	108.4	107.5	115.6
75	W-075	9.2	Strong	1.5	1.33	110.8	0.34	0.03	0.31	9.7	121.6	111.9	12.6
76	W-076	9.2	Strong	0.95	0.76	63.3	0.91	<0.01	0.91	28.4	88.4	60.0	3.1
77	W-077	9.0	Strong	2.94	2.61	217.5	0.24	0.03	0.21	6.6	173.5	166.9	26.4
78	W-078	8.9	Moderate	0.54	0.27	22.5	5.01	0.04	4.97	155.3	65.0	-90.3	0.4
79	W-079	8.9	Moderate	1.59	1.39	115.8	0.59	0.04	0.55	17.2	107.8	90.6	6.3
80	W-080	8.8	Moderate	0.96	0.65	54.2	1.43	0.03	1.40	43.8	85.1	41.4	1.9
81	W-081	9.5	Moderate	0.88	0.70	58.3	0.55	0.03	0.52	16.3	67.3	51.1	4.1
82	W-082	8.7	Strong	2.33	2.09	174.2	0.85	<0.01	0.85	26.6	173.3	146.7	6.5

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon wt. %	Total Inorganic C wt %	CaCO ₃ Equivalents ⁻¹ kg CaCO ₃ /tonne	Total Sulphur wt. %	Sulphate Sulphur wt %	Sulphide Sulphur wt %	AP ⁻³	STD Sobek NP kg CaCO ₃ /tonne	NNP ⁻⁴	NPR ⁻⁵
		Units: pH Units											
		Reported Detection Limit:	0.01	0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5		
83	W-083			1.84			0.2						
84	W-084	9.5	Strong	2.04	1.77	147.5	0.71	0.03	0.68	21.3	168.0	146.8	7.9
85	W-085			2.17			0.31						
86	W-086	8.7	Strong	0.93	0.50	41.7	2.94	0.03	2.91	90.9	87.1	-3.8	1.0
87	W-087			3.76			0.11						
88	W-088	7.3	None	0.52	0.07	5.8	2.74	0.03	2.71	84.7	13.6	-71.1	0.2
89	W-089			2.12			0.48						
90	W-090	8.2	None	0.22	0.10	8.3	1.07	0.03	1.04	32.5	21.8	-10.7	0.7
91	W-091	8.8	Strong	1.74	1.54	128.3	0.94	0.01	0.93	29.1	166.0	136.9	5.7
92	W-092	8.7	Moderate	3.18	2.79	232.5	0.96	0.03	0.93	29.1	189.8	160.7	6.5
93	W-093			2.23			3.8						
94	W-094	8.7	Strong	2.04	1.93	160.8	0.02	0.02	<0.01	<0.3	177.3	177.3	N/A
95	W-095			2.03			5.03						
96	W-096	9.4	Moderate	2.96	2.50	208.3	1.78	<0.01	1.78	55.6	189.9	134.3	3.4
97	W-097			2.12			4.55						
98	W-098	9.2	Moderate	2.22	1.51	125.8	2.41	<0.01	2.41	75.3	167.9	92.6	2.2
99	W-099			1.83			0.97						
100	W-100	9.2	Strong	1.45	1.30	108.3	0.52	<0.01	0.52	16.3	126.7	110.5	7.8
101	W-101			1.68			0.41						
102	W-102	9.2	Strong	1.39	1.35	112.5	0.03	0.03	<0.01	<0.3	120.0	120.0	N/A
103	W-103	7.6	None	0.17	<0.02	<1.7	1.85	0.03	1.82	56.9	15.2	-41.7	0.3
104	W-104			0.63			<0.01						
105	W-105	8.1	None	0.15	<0.02	<1.7	1.38	0.03	1.35	42.2	10.2	-32.0	0.2
106	W-106			0.67			<0.01						
107	W-107	8.3	None	0.03	<0.02	<1.7	2.26	0.03	2.23	69.7	12.5	-57.2	0.2
108	W-108			0.39			<0.01						
109	W-109	7.8	None	0.06	<0.02	<1.7	3.85	0.04	3.81	119.1	7.2	-111.9	0.1
110	W-110			1.37			<0.01						
111	W-111	9.1	Slight	0.3	0.18	15.0	0.26	0.03	0.23	7.2	32.6	25.4	4.5
112	W-112	9.4	Moderate	2.1	1.95	162.5	0.02	0.01	0.01	0.3	143.7	143.4	459.8
113	W-113	9.3	Moderate	2.11	1.90	158.3	0.1	0.03	0.07	2.2	132.7	130.5	60.7
114	W-114			1			0.15						
115	W-115	9.0	Strong	1.43	1.13	94.2	1.83	0.03	1.80	56.3	123.6	67.4	2.2
116	W-116			0.47			0.01						
117	W-117	9.0	Strong	1.42	1.32	110.0	0.29	0.01	0.28	8.8	131.8	123.1	15.1
118	W-118			0.75			0.17						
119	W-119	9.6	Strong	1.4	1.25	104.2	0.32	<0.01	0.32	10.0	121.1	111.1	12.1
120	W-120			0.58			0.11						
121	W-121	9.0	Moderate	3.47	3.01	250.8	1.31	0.02	1.29	40.3	182.0	141.7	4.5
122	W-122			0.69			0.29						
123	W-123	8.8	Moderate	2.51	1.97	164.2	2.15	0.02	2.13	66.6	185.3	118.7	2.8
124	W-124	8.0	None	<0.02	<0.02	<1.7	0.04	0.03	0.01	0.3	12.0	11.7	38.4
125	W-125	7.5	None	<0.02	<0.02	<1.7	3.04	0.04	3.00	93.8	5.3	-88.5	0.1

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon wt. %	Total Inorganic C wt %	CaCO ₃ Equivalents ⁻¹ kg CaCO ₃ /tonne	Total Sulphur wt %	Sulphate Sulphur wt %	Sulphide Sulphur wt %	AP ⁻³	STD Sobek NP	NNP ⁻⁴	NPR ⁻⁵
		Units: pH Units									kg CaCO ₃ /tonne		
		Reported Detection Limit: 0.01		0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5		
126	W-126	8.3	Moderate	1.79	1.64	136.7	0.07	0.03	0.04	1.3	131.0	129.8	104.8
127	W-127	8.1	None	<0.02	<0.02	<1.7	2.39	0.04	2.35	73.4	5.9	-67.5	0.1
128	W-128	8.6	Strong	0.86	0.80	66.7	0.09	<0.01	0.09	2.8	98.3	95.5	35.0
129	W-129	7.8	None	0.05	<0.02	<1.7	0.04	0.03	0.01	0.3	10.3	10.0	33.0
130	W-130	8.5	None	0.08	<0.02	<1.7	0.15	0.03	0.12	3.8	13.7	10.0	3.7
131	W-131	8.9	Strong	1.68	1.57	130.8	0.06	<0.01	0.06	1.9	149.1	147.2	79.5
132	W-132	8.6	Slight	0.61	0.02	1.7	2.91	0.03	2.88	90.0	15.4	-74.6	0.2
133	W-133	8.8	Strong	2.92	2.53	210.8	0.65	0.03	0.62	19.4	218.4	199.0	11.3
134	W-134	8.6	None	0.03	<0.02	<1.7	1.32	0.03	1.29	40.3	14.7	-25.6	0.4
135	W-135	9.4	Moderate	1.99	1.51	125.8	1.76	0.03	1.73	54.1	152.9	98.8	2.8
136	W-136			0.73			0.41						
137	W-137	8.9	Moderate	1.05	0.63	52.5	4.77	0.03	4.74	148.1	98.9	-49.2	0.7
138	W-138			0.33			0.81						
139	W-139	8.5	Moderate	1.56	0.89	74.2	6.62	0.03	6.59	205.9	116.1	-89.8	0.6
140	W-140			0.75			0.45						
141	W-141	9.4	Moderate	1.65	1.50	125.0	0.34	<0.01	0.34	10.6	123.7	113.1	11.6
142	W-142			0.48			1.21						
143	W-143			0.32			0.67						
144	W-144			0.85			3.31						
145	W-145			0.48			0.31						
146	W-146			0.09			2.14						
147	W-147			2.41			0.29						
148	W-148			0.57			1.08						
149	W-149			1.86			0.07						
150	W-150	8.7	None	0.1	<0.02	<1.7	1.86	0.04	1.82	56.9	16.1	-40.8	0.3
151	W-151	8.0	Slight	1.23	0.78	65.0	0.62	0.06	0.56	17.5	67.5	50.0	3.9
152	W-152			0.45			2.48						
153	W-153			0.81			0.48						
154	W-154			0.1			0.79						
155	W-155			2.02			0.19						
156	W-156			0.11			0.64						
157	W-157			2.42			0.25						
158	W-158			0.07			0.45						
159	W-159			2.52			0.28						
160	W-160			0.32			0.45						
161	W-161			2.26			0.1						
162	W-162	8.4	Slight	1.35	0.31	25.8	2.88	0.04	2.84	88.8	40.6	-48.2	0.5
163	W-163	7.8	None	0.36	0.04	3.3	1.46	0.03	1.43	44.7	14.5	-30.2	0.3
164	W-164	8.9	Strong	0.8	0.39	32.5	6.22	0.02	6.20	193.8	93.9	-99.9	0.5
165	W-165	8.6	Moderate	1.48	1.04	86.7	1.25	0.03	1.22	38.1	109.6	71.5	2.9
166	W-166	8.9	Moderate	0.17	0.07	5.8	5.26	0.03	5.23	163.4	32.4	-131.0	0.2
167	W-167	8.7	Strong	0.51	0.41	34.2	0.39	0.03	0.36	11.3	67.6	56.4	6.0
168	W-168	8.9	Strong	1.9	1.68	140.0	1.39	<0.01	1.39	43.4	166.5	123.1	3.8

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon wt.%	Total Inorganic C wt %	CaCO ₃ Equivalents ⁻¹ kg CaCO ₃ /tonne	Total Sulphur wt. %	Sulphate Sulphur wt %	Sulphide Sulphur wt %	AP ⁻³	STD Sobek NP kg CaCO ₃ /tonne	NNP ⁻⁴	NPR ⁻⁵
		<i>Units:</i> pH Units											
		Reported Detection Limit:		0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5		
169	W-169	8.2	Strong	0.4	0.19	15.8	0.78	0.03	0.75	23.4	48.3	24.9	2.1
170	W-170	9.2	Strong	1.69	1.60	133.3	0.32	<0.01	0.32	10.0	156.4	146.4	15.6
171	W-171	8.1	Strong	0.17	<0.02	<1.7	3.2	0.03	3.17	99.1	6.7	-92.4	0.1
172	W-172			0.05			0.86						
173	W-173	7.2	None	0.1	<0.02	<1.7	4.64	0.03	4.61	144.1	16.8	-127.3	0.1
174	W-174			0.14			0.34						
175	W-175			0.17			2.6						
176	W-176			0.1			0.24						
177	W-177			0.35			0.54						
178	W-178			0.14			0.21						
179	W-179	8.4	None	0.08	<0.02	<1.7	0.56	0.03	0.53	16.6	10.1	-6.5	0.6
180	W-180	8.0	None	0.09	<0.02	<1.7	0.48	<0.01	0.48	15.0	4.7	-10.3	0.3
181	W-181			0.09			0.28						
182	W-182			0.06			0.56						
183	W-183			0.4			0.25						
184	W-184			0.04			0.59						
185	W-185			0.09			0.54						
186	W-186			0.04			0.68						
187	W-187			0.29			0.36						
188	W-188			0.17			0.63						
189	W-189			1			0.35						
190	W-190			0.04			0.58						
191	W-191			1.13			0.1						
192	W-192	8.9	Moderate	1.57	1.12	93.3	4.38	0.02	4.36	136.3	118.6	-17.7	0.9
193	W-193			1.11			0.69						
194	W-194	9.1	Moderate	0.42	0.28	23.3	1.12	0.03	1.09	34.1	40.1	6.0	1.2
195	W-195			1.23			0.69						
196	W-196	8.9	Strong	1.79	1.33	110.8	1.7	<0.01	1.70	53.1	144.0	90.9	2.7
197	W-197			0.76			4.37						
198	W-198	8.7	Strong	2.71	2.17	180.8	2.7	<0.01	2.70	84.4	197.3	112.9	2.3
199	W-199	7.9	Strong	1.03	0.84	70.0	1.79	0.02	1.77	55.3	101.1	45.8	1.8
200	W-200	8.8	Strong	2.15	2.02	168.3	0.42	<0.01	0.42	13.1	177.0	163.9	13.5
201	W-201			1.09			1.25						
202	W-202	9.0	Strong	1.59	1.48	123.3	0.12	0.03	0.09	2.8	143.0	140.2	50.8
203	W-203			1.22			0.49						
204	W-204	9.1	Moderate	2.54	2.25	187.5	0.44	0.03	0.41	12.8	175.3	162.5	13.7
205	W-205			0.47			0.27						
206	W-206	9.4	Moderate	1.71	1.42	118.3	0.53	0.03	0.50	15.6	133.4	117.8	8.5
207	W-207	9.0	Moderate	3.14	2.49	207.5	1.51	<0.01	1.51	47.2	162.6	115.4	3.4
208	W-208	9.3	Strong	1.48	1.14	95.0	0.9	<0.01	0.90	28.1	122.8	94.7	4.4
209	W-209	7.2	None	0.23	<0.02	<1.7	6.46	0.03	6.43	200.9	8.9	-192.0	0.0
210	W-210	9.0	Strong	1.3	1.26	105.0	<0.01	0.01	<0.01	<0.3	122.9	122.9	N/A
211	W-211	8.8	Strong	1.07	0.70	58.3	2.7	0.02	2.68	83.8	104.5	20.8	1.2

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon wt. %	Total Inorganic C wt %	CaCO ₃ Equivalents ⁻¹ kg CaCO ₃ /tonne	Total Sulphur wt. %	Sulphate Sulphur wt %	Sulphide Sulphur wt %	AP ⁻³	STD Sobek NP kg CaCO ₃ /tonne	NNP ⁻⁴	NPR ⁻⁵
		Units: pH Units											
		Reported Detection Limit:											
		0.01		0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5		
212	W-212	8.9	Strong	1.49	1.40	116.7	0.02	0.02	<0.01	<0.3	141.3	141.3	N/A
213	W-213	7.0	None	0.32	0.07	5.8	5.2	0.05	5.15	160.9	17.3	-143.6	0.1
214	W-214	9.0	Strong	1.56	1.45	120.8	0.03	0.03	<0.01	<0.3	143.8	143.8	N/A
215	W-215	9.2	Strong	2.17	1.42	118.3	2.79	0.03	2.76	86.3	162.4	76.2	1.9
216	W-216	8.9	Strong	1.87	1.76	146.7	0.33	0.03	0.30	9.4	164.5	155.1	17.5
217	W-217	9.0	Strong	1.22	0.81	67.5	3.89	0.02	3.87	120.9	105.3	-15.6	0.9
218	W-218	8.2	Strong	0.99	0.57	47.5	4.29	0.03	4.26	133.1	167.5	34.4	1.3
219	W-219	7.7	Slight	1.13	0.03	2.5	3.64	0.04	3.60	112.5	16.8	-95.7	0.1
220	W-220	8.6	Moderate	2.51	1.60	133.3	4.76	0.03	4.73	147.8	160.5	12.7	1.1
221	W-221	9.1	Strong	0.8	0.67	55.8	1.2	0.02	1.18	36.9	75.5	38.6	2.0
222	W-222	8.8	Strong	1.49	1.42	118.3	<0.01	<0.01	<0.01	<0.3	133.5	133.5	N/A
223	W-223	8.9	Strong	0.87	0.75	62.5	0.69	0.03	0.66	20.6	79.1	58.5	3.8
224	W-224	9.0	Strong	2.3	2.23	185.8	0.17	0.03	0.14	4.4	193.9	189.5	44.3
225	W-225	8.4	Strong	0.86	0.44	36.7	1.82	0.02	1.80	56.3	72.3	16.1	1.3
226	W-226	8.9	None	0.32	0.12	10.0	1.56	0.03	1.53	47.8	12.0	-35.8	0.3
227	W-227	7.8	None	0.08	0.03	2.5	0.26	<0.01	0.26	8.1	5.9	-2.2	0.7
228	W-228	9.1	None	0.46	0.12	10.0	2.3	0.03	2.27	70.9	27.0	-43.9	0.4
229	W-229	9.0	Moderate	2.52	2.37	197.5	0.06	0.03	0.03	0.9	155.4	154.5	165.8
230	W-230	9.2	Moderate	2.12	1.93	160.8	0.26	0.03	0.23	7.2	157.2	150.0	21.9
231	W-231	8.9	None	0.21	<0.02	<1.7	0.19	0.03	0.16	5.0	13.2	8.2	2.6
232	W-232	8.7	Moderate	2.02	1.78	148.3	0.82	0.03	0.79	24.7	147.1	122.4	6.0
233	W-233	8.2	None	0.05	<0.02	<1.7	<0.01	<0.01	<0.01	<0.3	14.7	14.7	N/A
234	W-234	8.6	Strong	2.48	2.37	197.5	0.23	0.03	0.20	6.3	203.5	197.3	32.6
235	W-235	8.6	Strong	0.8	0.71	59.2	0.32	0.03	0.29	9.1	83.3	74.2	9.2
236	W-236	8.3	Strong	0.72	0.66	55.0	0.29	0.03	0.26	8.1	86.1	78.0	10.6
237	W-237	9.0	Strong	1.57	1.45	120.8	0.33	0.03	0.30	9.4	142.3	132.9	15.2
238	W-238	8.3	Strong	1.11	0.96	80.0	1.14	0.03	1.11	34.7	121.1	86.4	3.5
239	W-239	9.1	Strong	1.17	1.06	88.3	0.56	0.03	0.53	16.6	122.9	106.3	7.4
240	W-240	9.2	Moderate	2.5	2.23	185.8	0.38	0.03	0.35	10.9	170.0	159.1	15.5
241	W-241	9.5	Moderate	2.38	2.34	195.0	<0.01	0.01	<0.01	<0.3	160.5	160.5	N/A
242	W-242			1.21			0.11						
243	W-243	9.5	Moderate	1.93	1.87	155.8	<0.01	0.01	<0.01	<0.3	148.4	148.4	N/A
244	W-244			1.37			0.08						
245	W-245	9.5	Moderate	2.12	2.07	172.5	<0.01	0.01	<0.01	<0.3	163.5	163.5	N/A
246	W-246			1.97			0.39						
247	W-247	7.9	Moderate	1.54	0.94	78.3	2.99	0.03	2.96	92.5	114.9	22.4	1.2
248	W-248			1.3			<0.01						
249	W-249	8.8	Strong	2.04	1.99	165.8	0.1	0.03	0.07	2.2	178.3	176.1	81.5
250	W-250			1.51			0.01						
251	W-251	8.7	Strong	1.34	1.25	104.2	0.2	0.03	0.17	5.3	125.4	120.1	23.6
252	W-252			1.37			0.03						
253	W-253	8.6	Strong	1.99	0.92	76.7	5.97	0.01	5.96	186.3	163.2	-23.1	0.9
254	W-254	8.4	Strong	0.77	0.72	60.0	0.32	0.03	0.29	9.1	86.4	77.3	9.5

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon wt. %	Total Inorganic C wt %	CaCO ₃ Equivalents ⁻¹ kg CaCO ₃ /tonne	Total Sulphur wt %	Sulphate Sulphur wt %	Sulphide Sulphur wt %	AP ⁻³	STD Sobek NP kg CaCO ₃ /tonne	NNP ⁻⁴	NPR ⁻⁵
		Units: pH Units											
		Reported Detection Limit:	0.01	0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5		
255	W-255	7.8	Moderate	0.62	0.27	22.5	0.04	0.03	0.01	0.3	33.8	33.5	108.2
256	W-256	9.1	Strong	1.17	1.10	91.7	0.24	<0.01	0.24	7.5	80.1	72.6	10.7
257	W-257	7.9	Moderate	0.94	0.60	50.0	0.1	0.03	0.07	2.2	65.5	63.3	29.9
258	W-258			1.31			<0.01						
259	W-259	8.2	Moderate	0.65	0.37	30.8	0.05	0.02	0.03	0.9	42.3	41.4	45.1
260	W-260			1.36			0.01						
261	W-261	8.6	Strong	1.46	1.42	118.3	<0.01	0.01	<0.01	<0.3	136.7	136.7	N/A
262	W-262	8.9	Strong	2.5	2.15	179.2	1.87	0.04	1.83	57.2	207.3	150.1	3.6
263	W-263	8.2	Moderate	0.94	0.79	65.8	0.92	0.04	0.88	27.5	95.9	68.4	3.5
264	W-264	9.0	Strong	1.53	1.43	119.2	0.13	0.03	0.10	3.1	137.0	133.9	43.8
265	W-265	9.0	Strong	2.56	2.14	178.3	1.42	0.03	1.39	43.4	178.1	134.7	4.1
266	W-266	8.0	None	0.19	<0.02	<1.7	3.11	0.04	3.07	95.9	9.2	-86.7	0.1
267	W-267	9.4	Strong	2.16	1.96	163.3	0.29	0.03	0.26	8.1	149.6	141.5	18.4
268	W-268	8.1	None	<0.02	<0.02	<1.7	7.06	0.04	7.02	219.4	4.7	-214.7	0.0
269	W-269	8.8	Strong	2.96	2.14	178.3	2.67	0.03	2.64	82.5	191.3	108.8	2.3
270	W-270	8.5	None	0.03	<0.02	<1.7	4.06	0.05	4.01	125.3	6.7	-118.6	0.1
271	W-271	9.1	Strong	2	1.73	144.2	0.35	0.03	0.32	10.0	148.9	138.9	14.9
272	W-272	8.5	Strong	0.88	0.49	40.8	4.99	0.03	4.96	155.0	78.8	-76.2	0.5
273	W-273	8.8	Strong	0.98	0.83	69.2	1.75	0.01	1.74	54.4	101.5	47.1	1.9
274	W-274	8.8	Strong	1.37	0.79	65.8	3.31	0.03	3.28	102.5	124.7	22.2	1.2
275	W-275			1.71			<0.01						
276	W-276	8.8	Strong	0.65	0.61	50.8	0.02	0.01	0.01	0.3	88.2	87.9	282.2
277	W-277			1.82			0.05						
278	W-278	8.8	Moderate	2.01	1.31	109.2	3.23	0.01	3.22	100.6	153.1	52.5	1.5
279	W-279			1.86			0.13						
280	W-280	9.0	Moderate	2.02	1.14	95.0	3.42	0.01	3.41	106.6	147.9	41.3	1.4
281	W-281			2.74			0.47						
282	W-282			2.53			0.39						
283	W-283	8.7	Strong	2.19	2.05	170.8	1.04	<0.01	1.04	32.5	181.1	148.6	5.6
284	W-284			1.92			1.35						
285	W-285			2.23			0.03						
286	W-286			2.35			0.25						
287	W-287			2.27			1.84						
288	W-288			2.24			0.29						
289	W-289			1.56			2.6						
290	W-290	9.2	Strong	2.84	2.67	222.5	0.55	0.01	0.54	16.9	201.1	184.2	11.9
291	W-291			2.12			1.07						
292	W-292			2.48			0.1						
293	W-293			2.25			0.03						
294	W-294			3.06			0.09						
295	W-295	8.8	Strong	2.18	2.15	179.2	<0.01	0.01	<0.01	<0.3	184.6	184.6	N/A
296	W-296			3.16			0.51						
297	W-297	8.5	Strong	0.89	0.88	73.3	0.09	0.01	0.08	2.5	93.4	90.9	37.4

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon wt. %	Total Inorganic C wt %	CaCO ₃ Equivalents ¹ kg CaCO ₃ /tonne	Total Sulphur wt. %	Sulphate Sulphur wt %	Sulphide Sulphur wt %	AP ³	STD Sobek NP kg CaCO ₃ /tonne	NNP ⁴	NPR ⁵
<i>Units:</i>		pH Units											
Reported Detection Limit:		0.01		0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5		
298	W-298			2.38			0.43						
299	W-299	8.5	Moderate	1.16	0.67	55.8	3.29	<0.01	3.29	102.8	86.4	-16.4	0.8
300	W-300			2.3			0.64						
301	W-301	9.0	Moderate	2.61	2.05	170.8	1.8	0.03	1.77	55.3	148.6	93.3	2.7
302	W-302	9.4	Moderate	2.77	2.48	206.7	0.89	0.01	0.88	27.5	181.1	153.6	6.6
303	W-303	8.2	Strong	2.05	1.58	131.7	3.99	<0.01	3.99	124.7	167.0	42.3	1.3
304	W-304	9.1	Moderate	0.43	0.39	32.5	0.03	<0.01	0.03	0.9	68.7	67.8	73.3
305	W-305	8.7	Strong	1.61	1.53	127.5	0.3	0.03	0.27	8.4	144.3	135.9	17.1
306	W-306	9.3	Moderate	1.24	1.12	93.3	0.02	0.02	<0.01	<0.3	85.4	85.4	N/A
307	W-307	8.7	Strong	0.71	0.46	38.3	3.13	0.10	3.03	94.7	70.7	-24.0	0.7
308	W-308	9.2	Moderate	2.01	1.66	138.3	0.52	0.02	0.50	15.6	130.5	114.9	8.4
309	W-309	8.0	Moderate	1.34	1.04	86.7	2.42	<0.01	2.42	75.6	104.0	28.4	1.4
310	W-310	8.8	Moderate	0.79	0.36	30.0	3.49	<0.01	3.49	109.1	56.7	-52.4	0.5
311	W-311	8.1	Strong	1.63	1.39	115.8	1.51	0.03	1.48	46.3	143.8	97.6	3.1
312	W-312	9.0	Moderate	1.95	1.63	135.8	0.43	0.02	0.41	12.8	127.5	114.7	10.0
313	W-313	8.7	Moderate	0.19	<0.02	<1.7	3.21	0.04	3.17	99.1	23.2	-75.9	0.2
314	W-314	8.6	Strong	1.2	0.76	63.3	3.59	0.03	3.56	111.3	107.3	-4.0	1.0
315	W-315			1.36			2.49						
316	W-316			2.69			1.18						
317	W-317			1.35			2.3						
318	W-318			2.04			0.51						
319	W-319			0.97			2.51						
320	W-320			2.3			0.2						
321	W-321			1.12			2.82						
322	W-322			2.61			0.09						
323	W-323			1.34			1.96						
324	W-324	9.1	Strong	2.51	2.31	192.5	0.4	0.03	0.37	11.6	185.4	173.8	16.0
325	W-325	8.4	Moderate	1.49	1.05	87.5	2.11	0.04	2.07	64.7	122.9	58.2	1.9
326	W-326			2.84			0.74						
327	W-327			1.35			1.7						
328	W-328			2.83			0.08						
329	W-329			1.59			3.07						
330	W-330			2.57			0.26						
331	W-331			1.58			1.58						
332	W-332			2.79			0.34						
333	W-333			1.97			2.73						
334	W-334			2.83			0.34						
QUALITY ASSURANCE / QUALITY CONTROL													
Replicates:													
1	W-001			0.14	<0.02	<1.7	2.17						
1 R	W-001			0.14	<0.02	<1.7	2.20						
3	W-003										313.1		
3R	W-003										334.6		
10	W-010	7.9	None					0.03			16.5		

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon	Total Inorganic C	CaCO ₃ Equivalents ⁻¹	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	AP ⁻³	STD Sobek NP	NNP ⁻⁴	NPR ⁻⁵
		Units: pH Units		wt. %	wt %	kg CaCO ₃ /tonne	wt. %	wt %	wt %		kg CaCO ₃ /tonne		
		Reported Detection Limit:		0.01	0.02	0.02	1.7	0.01	0.01	0.3	0.5		
10 R	W-010	8.0	None					0.03			16.2		
20	W-020	8.7	None					<0.01			8.4		
20 R	W-020	8.6	None					<0.01			8.9		
21	W-021			0.08	<0.02	<1.7	3.39						
21 R	W-021			0.07	<0.02	<1.7	3.37						
30	W-030	7.9	None					0.02			5.3		
30 R	W-030	8.1	None					0.03			5.4		
40	W-040	8.2	None					0.04			13.4		
40 R	W-040	8.1	None					0.04			12.5		
41	W-041			2.06	1.98	165.0	0.08						
41 R	W-041			2.07	1.98	165.0	0.09						
50	W-050	9.1	Moderate					0.02			161.1		
50 R	W-050	9.3	Moderate					0.03			160.2		
60	W-060	8.3	Moderate					0.03			101.0		
60 R	W-060	8.4	Moderate					0.03			103.0		
61	W-061			1.82	1.68	140.0	0.46						
61 R	W-061			1.81	1.68	140.0	0.45						
70	W-070	9.2	Strong					<0.01			127.2		
70 R	W-070	9.4	Strong					<0.01			126.4		
80	W-080	8.8	Moderate					0.03			85.1		
80 R	W-080	8.6	Moderate					0.03			83.4		
81	W-081			0.88	0.70	58.3	0.55						
81 R	W-081			0.85	0.70	58.3	0.55						
90	W-090	8.2	None					0.03			21.8		
90 R	W-090	8.3	None					0.02			21.7		
100	W-100	9.2	Strong					<0.01			126.7		
100 R	W-100	9.1	Strong					<0.01			127.9		
101	W-101			1.68			0.41						
101 R	W-101			1.68			0.44						
102	W-102				1.35	112.5							
102 R	W-102				1.34	111.7							
121	W-121			3.47	3.01	250.8	1.31						
121 R	W-121			3.46	3.00	250.0	1.27						
130	W-130	8.5	None					0.03			13.7		
130 R	W-130	8.7	None					0.03			14.5		
141	W-141				1.50	125.0							
141 R	W-141				1.51	125.8							
150	W-150	8.7	None					0.04			16.1		
150 R	W-150	8.8	None					0.05			17.8		
161	W-161			2.26			0.10						
161 R	W-161			2.25			0.09						
170	W-170	9.2	Strong					<0.01			156.4		
170 R	W-170	9.1	Strong					0.01			155.6		

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon wt. %	Total Inorganic C wt %	CaCO ₃ Equivalents ⁻¹ kg CaCO ₃ /tonne	Total Sulphur wt. %	Sulphate Sulphur wt %	Sulphide Sulphur wt %	AP ⁻³	STD Sobek NP kg CaCO ₃ /tonne	NNP ⁻⁴	NPR ⁻⁵
		<i>Units:</i> pH Units											
		Reported Detection Limit:	0.01	0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5		
180	W-180	8.0	None					<0.01			4.7		
180 R	W-180	8.1	None					<0.01			5.4		
181	W-181			0.09			0.28						
181 R	W-181			0.09			0.29						
192	W-192				1.12	93.3							
192 R	W-192				1.12	93.3							
200	W-200	8.8	Strong					<0.01			177.0		
200 R	W-200	8.6	Strong					0.01			176.7		
201	W-201			1.09			1.25						
201 R	W-201			1.11			1.28						
202	W-202				1.48	123.3							
202 R	W-202				1.48	123.3							
210	W-210	9.0	Strong					0.01			122.9		
210 R	W-210	8.8	Strong					0.01			124.4		
220	W-220	8.6	Moderate					0.03			160.5		
220 R	W-220	8.7	Moderate					0.03			160.5		
221	W-221				0.67	55.8	1.20						
221 R	W-221				0.67	55.8	1.12						
230	W-230	9.2	Moderate					0.03			157.2		
230 R	W-230	9.2	Moderate					0.03			157.2		
240	W-240	9.2	Moderate								170.0		
240 R	W-240	9.2	Moderate								169.8		
241	W-241							<0.01					
241 R	W-241							<0.01					
261	W-261							<0.01					
261 R	W-261							<0.01					
270	W-270	8.5	None					0.05			6.7		
270 R	W-270	8.6	None					0.05			8.2		
280	W-280	9.0	Moderate					0.01			147.9		
280 R	W-280	9.0	Moderate					0.01			147.5		
281	W-281			2.74			0.47						
281 R	W-281			2.73			0.46						
283	W-283				2.05	170.8							
283 R	W-283				2.04	170.0							
290	W-290	9.2	Strong					0.01			201.1		
290 R	W-290	9.1	Strong					0.01			200.7		
310	W-310	8.8	Moderate					<0.01			56.7		
310 R	W-310	8.7	Moderate					<0.01			56.4		
321	W-310			1.12			2.82						
321 R	W-310			1.13			2.76						
324	W-324				2.31	192.5							
324 R	W-324				2.31	192.5							

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon wt.%	Total Inorganic C wt %	CaCO ₃ Equivalents ^{*1} kg CaCO ₃ /tonne	Total Sulphur wt %	Sulphate Sulphur wt %	Sulphide Sulphur wt %	AP ^{*3}	STD Sobek NP kg CaCO ₃ /tonne	NNP ^{*4}	NPR ^{*5}
Units:		pH Units		wt.%	wt %	kg CaCO ₃ /tonne	wt %	wt %	wt %		kg CaCO ₃ /tonne		
Reported Detection Limit:		0.01		0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5		
Certified Reference Material (CRM) Analysis:													
Certified Reference Material	KZK-1			KZK-1	KZK-1		KZK-1	RTS-3a			1) KZK-1 (Slight) 2) KZK-1 (Moderate)		
CRM True Value	8.80			0.95	0.84		0.80	1.10			1) 69.0 2) 64.8		
Reference Material Results	8.86, 8.91, 8.87			0.92, 0.91, 0.94, 0.92, 0.93, 0.94, 0.94, 0.90, 0.92, 0.94	0.70, 0.73, 0.70, 0.73, 0.71, 0.73, 0.72, 0.73		0.79, 0.74, 0.80, 0.80, 0.82, 0.79, 0.78, 0.82, 0.81, 0.78	1.04, 1.05, 1.10, 1.03			1) 58.6, 59.1, 58.6, 58.8 2) 63.2, 61.7		
Tolerance (+/-) or Acceptance Range	0.09			90% - 110%	80% - 120%		90% - 110%	0.99 - 1.21			1) 2.8 2) 5.8		
Method Blank Analysis:													
Method Blank Results				<0.02	<0.02		<0.01	<0.01					
GLOBAL SOP No. / Method:	ARD-004	ARD-005	LECO	HCl leach/ CO ₂ -Coulometer	Calc.	LECO	ARD-013 (Seq. HCl/HNO ₃ leach)	Calc.	ARD-007	Calc.	Calc.		

NOTES:
Acceptance criteria at Global ARD Testing for all CRMs is ±10 % of certified value.
Job No: 21V785801
Date of Analysis: August 13-21, 2021
pH of DI water used: 5.64, 5.62, 5.61, 5.66, 5.72, 5.54
EC of DI water used: 0.72, 0.64, 0.51, 0.77, 0.46

METHODS:
Total Sulphur by Leco.
Total Inorganic Carbon (TIC): HCl leach, evolved gas (CO₂) analysed by CO₂ Coulometer.
Surface Rinse-pH (1 to 107 minus 10 & 33): was conducted on < 2mm, sieved from 1/4" crushed homogenized material. Solid: liquid ration used = 1:1 (i.e. 25-30 g sample: 25-30 mL DI water).
Note: for samples received as pulps (#10, 33, 108-153) - no Rinse-pH was conducted. This is indicate as N/A (Not Applicable) in the report.

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 split of the original client sample received. A duplicate pulp sample is prepared only at client request)
NP = Neutralization Potential
Calc. = Calculation
NR = Not Received

CALCULATIONS:
^{*1} CaCO₃ Equivalents: based on TIC
^{*2} Non-Extractable Sulphur: Total sulphur - (sulphate sulphur + sulphide 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:
Surface Rinse-pH: MEND Report 1.20.1, Version 0 (2009).
Sample Preparation: ASTM E877-08; MEND Report 1.20.1, Version 0 (2009)
ABA: Dried below 40°C (if received wet), jaw-crushed if necessary, split by riffing and pulverized to 85% passing 200 mesh (75 µm).
STD Sobek NP / Paste pH / Fizz Rating: Sobek, A.A., Schuller, W.A., Freeman, J.R. and Smith, R.M.; US EPA-600/2-78-054 (1978).
Sulphur Speciation: Modified ASTM D2492-02 Method. The S extracted is determined by analysing the extract for SO₄ using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).
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.

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

PAGE: 4a of 9
GLOBAL PROJECT NO: 1956 (B8)
CLIENT: First Mining Gold Corp.
PROJECT NAME: Springpole
PROJECT NO: ONS2104
REPORT VERSION: 3

S. No.	Sample ID	Method Analyte Unit MDL Sample Type	IMS-130																											
			Silver (Ag) ppm 0.01	Aluminum (Al) % 0.01	Arsenic (As) ppm 0.1	Gold (Au) ppm 0.005	Boron (B) ppm 10	Barium (Ba) ppm 10	Beryllium (Be) ppm 0.05	Bismuth (Bi) ppm 0.01	Calcium (Ca) % 0.01	Cadmium (Cd) ppm 0.01	Cerium (Ce) ppm 0.02	Cobalt (Co) ppm 0.1	Chromium (Cr) ppm 1	Cesium (Cs) ppm 0.05	Copper (Cu) ppm 0.2	Iron (Fe) % 0.01	Gallium (Ga) ppm 0.05	Germanium (Ge) ppm 0.05	Hafnium (Hf) ppm 0.02	Mercury (Hg) ppm 0.01	Indium (In) ppm 0.005	Potassium (K) % 0.01	Lanthanum (La) ppm 0.2	Lithium (Li) ppm 0.1	Magnesium (Mg) % 0.01	Manganese (Mn) ppm 5		
1	W-001	Pulp	2.96	1.2	13.4	1.0466	11	106	0.60	0.06	0.33	0.16	26.47	30.4	48	7.21	50.6	5.26	3.67	0.09	1.12	0.24	0.008	0.86	11.8	59.7	0.88	488		
2	W-002	Pulp	3.39	1.8	19.1	0.8078	<10	67	1.12	0.30	0.29	0.1	58.82	28.6	81	21.96	152.5	5.73	10.59	0.21	0.94	0.05	0.031	1.92	33.1	278.1	2.36	224		
3	W-003	Pulp	4.59	1.7	30.8	0.3404	<10	113	0.48	0.89	13.11	7.41	477.66	11.8	33	4.94	66.5	2.91	6.60	0.36	1.84	1.06	0.016	1.98	324.7	66.3	1.31	2041		
4	W-004	Pulp	8.79	2.0	66.2	0.5584	<10	34	1.46	4.05	0.30	2.94	68.31	31.0	68	14.05	2028.1	6.20	7.15	0.26	1.29	0.10	0.057	1.91	39.6	478.2	2.58	129		
5	W-005	Pulp	1.39	0.9	23.1	0.2714	11	391	0.54	0.25	0.83	0.44	84.26	6.2	47	9.66	14.3	1.70	5.40	0.16	2.61	0.06	0.011	0.91	48.2	55.4	0.99	253		
6	W-006	Pulp	4.36	0.4	29.0	0.4917	<10	326	0.45	0.43	1.25	14.62	80.29	8.3	58	0.20	57.0	0.93	1.61	0.10	1.09	0.17	0.005	0.22	40.3	3.3	0.04	176		
7	W-007	Pulp	3.02	3.0	46.0	0.4448	16	115	1.52	0.04	0.53	0.26	41.18	32.5	70	71.72	80.2	6.33	10.73	0.18	0.93	0.13	0.023	2.40	19.0	90.0	3.11	265		
8	W-008	Pulp	3.96	0.7	27.9	0.8605	<10	248	0.71	0.63	0.04	0.26	297.91	10.1	36	2.83	46.4	1.37	4.12	0.18	2.79	0.14	0.006	0.61	192.1	28.8	0.62	45		
9	W-009	Pulp	3.34	1.7	15.7	0.8385	16	109	1.06	0.04	0.40	0.29	38.61	39.7	57	17.72	91.9	7.73	5.25	0.16	0.86	0.22	0.010	1.35	20.9	112.1	1.59	5139		
10	W-010	Pulp	1.01	2.5	16.0	0.1786	<10	158	1.25	0.13	0.51	1.14	67.45	29.8	102	34.07	104.8	6.44	10.31	0.17	0.47	0.21	0.021	1.89	39.7	70.3	2.21	339		
11	W-011	Pulp	3.77	0.3	22.1	0.3327	<10	364	0.37	0.62	0.07	0.03	58.32	4.3	35	0.18	61.1	1.05	1.30	0.10	1.93	0.39	<0.005	0.20	25.3	2.6	0.02	21		
12	W-012	Pulp	3.92	1.3	15.8	1.1779	12	27	1.20	0.16	0.24	0.24	61.7	31.5	58	11.85	131.4	6.82	5.45	0.22	1.62	0.58	0.013	1.47	36.8	421.4	1.81	87		
13	W-013	Pulp	5.55	2.5	115.1	1.3304	16	44	1.13	0.08	0.24	0.09	38.83	39.6	75	16.79	101.7	6.47	10.22	0.16	0.78	0.30	0.021	1.46	18.0	93.1	1.79	141		
14	W-014	Pulp	4.87	2.5	27.4	1.226	16	32	1.79	0.21	0.34	0.24	108.96	36.0	78	19.47	200.8	7.43	7.81	0.28	1.18	0.28	0.011	2.26	58.0	558.7	3.2	288		
15	W-015	Pulp	4.58	2.9	37.5	1.6273	13	34	1.30	0.07	0.31	0.18	80.45	35.7	88	31.08	106.8	7.63	12.34	0.28	1.43	0.15	0.025	2.50	35.2	425.3	3.33	445		
16	W-016	Pulp	1.65	0.9	54.2	2.8265	11	94	0.78	0.74	3.18	0.42	160.74	7.0	36	6.71	13.0	2.34	5.20	0.24	4.25	0.11	0.012	0.87	74.3	16.6	1.1	655		
17	W-017	Pulp	4.65	0.9	15.5	1.3982	<10	387	0.81	0.33	0.11	0.18	56.26	4.0	47	4.61	24.8	1.15	4.25	0.12	1.84	0.07	<0.005	0.63	33.6	103.4	0.68	73		
18	W-018	Pulp	1.17	0.4	39.4	0.2039	<10	81	0.33	0.36	0.09	3	53.34	16.7	26	0.19	55.3	2.28	1.54	0.08	1.09	0.40	<0.005	0.24	26.5	2.4	0.03	15		
19	W-019	Pulp	4.58	0.6	59.9	0.7342	<10	38	0.53	0.54	0.03	4.4	100.21	21.7	51	0.92	193.1	3.84	2.28	0.13	1.37	0.78	0.063	0.49	40.8	20.9	0.48	28		
20	W-020	Pulp	1.83	1.1	73.7	0.1753	<10	56	0.54	1.12	0.09	0.31	96.13	16.0	54	6.01	56.4	3.14	5.17	0.14	1.97	0.50	0.015	1.17	59.6	35.6	1.5	52		
21	W-021	Pulp	6.46	1.1	29.0	1.0604	11	66	0.86	0.34	0.05	0.33	66.78	21.4	49	3.94	108.8	3.35	4.20	0.14	2.21	0.25	0.010	0.91	31.6	84.4	1.02	62		
22	W-022	Pulp	0.67	2.0	36.4	0.4728	13	85	0.94	0.08	0.38	0.02	47.04	41.6	44	6.06	90.8	6.55	5.73	0.11	0.77	0.03	0.009	0.70	21.9	29.2	0.76	25		
23	W-023	Pulp	1.06	3.1	23.2	0.6834	12	379	1.67	0.10	0.60	0.14	33.4	28.5	72	30.03	128.0	4.93	8.56	0.22	0.56	0.11	0.011	2.18	16.1	98.0	2.82	181		
24	W-024	Pulp	0.17	0.7	28.2	0.0169	<10	175	0.63	0.25	4.44	0.06	113.24	5.8	24	7.42	12.8	1.71	3.31	0.17	2.71	0.13	0.006	0.62	52.5	9.0	0.81	1281		
25	W-025	Pulp	6.73	3.4	14.5	1.5063	<10	175	2.18	0.35	0.53	0.12	92.09	30.7	82	28.74	199.9	5.61	10.98	0.28	1.10	0.25	0.017	2.40	54.4	212.2	3.16	198		
26	W-026	Pulp	4.33	2.3	8.7	1.3713	<10	133	0.89	0.06	0.37	0.1	50.75	29.9	65	28.22	85.0	5.59	7.31	0.23	0.64	0.08	0.009	1.69	26.9	52.5	1.96	146		
27	W-027	Pulp	0.17	6.0	26.8	0.0526	<10	87	1.77	0.09	0.26	0.02	12.75	26.3	55	70.08	11.5	5.75	17.52	0.33	0.55	0.02	0.012	5.04	5.8	234.2	8.18	474		
28	W-028	Pulp	2.32	0.8	17.9	1.0265	<10	255	1.40	0.69	0.08	0.03	107.88	0.8	30	2.31	62.7	1.39	3.85	0.21	2.37	0.14	0.006	0.61	61.1	32.0	0.78	164		
29	W-029	Pulp	1.61	1.4	56.2	0.1931	11	139	1.01	0.89	0.38	0.75	460.77	16.1	27	7.09	16.7	2.44	7.14	0.32	4.60	0.13	0.012	1.42	323.7	66.0	1.85	93		
30	W-030	Pulp	4.97	1.0	51.1	0.7599	<10	89	0.57	0.28	0.06	0.38	64.33	12.9	38	3.70	74.6	2.63	5.17	0.19	2.05	0.26	0.013	0.82	30.8	31.9	1	43		
31	W-031	Pulp	2.63	2.0	109.1	0.3204	14	147	2.46	0.60	1.86	7.72	>500	17.2	26	9.85	29.3	2.67	26.69	1.46	2.74	0.55	0.017	1.97	4268.8	129.6	2.94	789		
32	W-032	Pulp	0.97	0.7	146.3	0.454	<10	45	0.36	0.06	3.42	0.33	40.46	28.0	42	3.84	55.7	4.94	2.45	0.11	1.02	0.06	0.007	0.60	23.8	11.3	0.88	842		
33	W-033	Pulp	0.11	3.3	7.0	0.0043	<10	71	<0.05	<0.01	2.65	0.17	5.56	34.4	171	1.10	72.5	4.99	7.92	0.14	0.11	<0.005	<0.005	0.22	2.4	13.5	3.14	726		
34	W-034	Pulp	0.10	0.3	14.3	0.0113	<10	31	0.30	0.03	4.39	0.08	42.3	23.3	27	0.66	65.8	5.18	1.36	0.08	0.52	0.02	0.006	0.21	18.7	3.1	1.29	1324		
35	W-035	Pulp	2.39	0.3	34.2	0.2369	<10	184	0.19	0.21	0.07	0.08	59.53	4.1	24	0.13	15.8	1.13	1.14	0.06	1.53	0.10	<0.005	0.20	34.1	1.0	0.02	14		
36	W-036	Pulp	4.56	0.4	13.1	0.2576	<10	90	0.39	2.43	0.22	2.89	415.2	6.6	45	1.72	104.7	1.52	3.25	0.20	2.04	0.33	0.022	0.41	276.7	61.3	0.37	46		
37	W-037	Pulp	0.18	0.4	44.8	0.0154	<10	370	0.35	0.64	3.82	0.21	150.59	3.4	23	0.87	17.5	0.92	2.10	0.12	2.34	0.09	<0.005	0.31	101.2	8.4	0.12	564		
38	W-038	Pulp	1.93	0.6	62.4	0.1172	10	82	0.42	0.47	4.12	1.55	31.52	13.3	28	3.54	70.4	2.97	2.51	0.08	2.01	0.32	0.014	0.51	13.7	8.3	0.88	1113		
39	W-039	Pulp	0.02	0.6	13.3	0.0028	<10	969	0.32	0.03	3.37	0.08	73.67	20.7	18	4.08	34.6	3.19	3.07	0.10	0.65	0.02	0.007	0.46	32.3	6.6	1.57	1165		

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

S. No.	Sample ID	Method Analyte Unit MDL Sample Ty	Molybdenum	Sodium	Niobium	Nickel	Phosphorous	Lead	Rubidium	Rhenium	Sulphur	Antimony	Scandium	Selenium	Tin	Strontium	Tantalum	Tellurium	Thorium	Titanium	Thallium	Uranium	Vandium	Tungsten	Yttrium	Zinc	Zirconium
			(Mo) ppm 0.05	(Na) % 0.01	(Nb) ppm 0.05	(Ni) ppm 0.2	(P) ppm 10	(Pb) ppm 0.2	(Rb) ppm 0.1	(Re) ppm 0.001	(S) % 0.01	(Sb) ppm 0.05	(Sc) ppm 0.1	(Se) ppm 0.2	(Sn) ppm 0.2	(Sr) ppm 0.2	(Ta) ppm 0.01	(Te) ppm 0.01	(Th) ppm 0.2	(Ti) % 0.005	(Tl) ppm 0.02	(U) ppm 0.05	(V) ppm 1	(W) ppm 0.05	(Y) ppm 0.05	(Zn) ppm 2	(Zr) ppm 0.5
1	W-001	Pulp	19.11	0.04	<0.05	40.8	1091	6.1	96.1	0.041	2.06	0.92	3.1	2.7	0.2	40.5	0.02	6.1	1.5	0.055	1.39	1.04	48	0.55	7.35	57	41.7
2	W-002	Pulp	56.50	0.07	0.07	34.4	1038	23.1	327.2	0.012	4.13	0.90	10.9	3.3	0.3	73.9	0.01	5.46	1.2	0.146	3.45	1.94	115	0.53	8.02	96	37.7
3	W-003	Pulp	58.51	0.03	0.16	19.8	499	1032.7	150.7	0.012	2.27	3.26	4.2	3.3	<0.2	8225.9	0.04	5.71	3.7	0.044	1.65	8.64	40	2.06	15.18	1285	80.3
4	W-004	Pulp	477.24	0.03	0.06	46.3	888	682.1	276.8	0.214	5.77	5.38	5.7	12.9	<0.2	82.5	<0.01	15.29	1	0.083	2.3	3.95	28	1.03	13.32	321	55.4
5	W-005	Pulp	31.81	0.03	0.16	9.6	1448	105.0	131.7	0.004	1.00	1.24	2.1	1	0.5	315	<0.01	1.43	6.7	0.053	1.99	4	28	0.78	10.68	167	121.8
6	W-006	Pulp	67.72	0.01	0.09	7.0	540	36.2	12.3	0.004	0.92	2.94	0.8	1.2	0.3	337.2	<0.01	3.94	9.3	<0.005	0.28	12.38	6	0.32	10.73	112	63.0
7	W-007	Pulp	10.56	0.04	<0.05	42.0	1163	10.3	281.5	0.015	2.97	0.68	9.8	1.7	0.3	58.1	<0.01	4.06	1.9	0.245	5.7	1.52	111	0.41	9.09	220	38.4
8	W-008	Pulp	116.59	0.01	0.34	11.6	318	63.1	74.8	0.017	1.23	2.41	0.5	1.9	0.2	300.4	<0.01	4.71	12	0.013	1.19	6.8	11	1.10	9.62	71	134.0
9	W-009	Pulp	61.98	0.03	<0.05	46.9	999	13.2	172.8	0.016	2.32	0.81	3.7	4.4	<0.2	66.8	<0.01	9.01	1.4	0.109	2.51	1.21	59	0.50	9.34	167	32.5
10	W-010	Pulp	74.01	0.05	<0.05	79.7	1063	63.0	199.3	0.043	0.88	0.47	7.7	1.2	0.3	115.7	<0.01	1.64	2.1	0.244	3.32	1.35	116	0.38	7.64	273	22.3
11	W-011	Pulp	8.18	0.03	0.16	4.2	230	24.5	10.6	<0.001	1.02	1.15	0.3	2.9	0.2	259.8	<0.01	2.35	10.7	<0.005	0.16	5.04	3	0.37	10.96	6	97.0
12	W-012	Pulp	348.25	0.02	0.07	48.7	1001	33.4	203.8	0.166	7.07	0.88	5.2	7.7	0.2	33.1	<0.01	12.21	1.3	0.05	1.91	2.59	29	2.46	10.80	79	70.8
13	W-013	Pulp	32.64	0.06	<0.05	44.9	905	9.5	236.3	0.01	4.78	5.26	8.6	2.7	0.3	52.4	<0.01	8.08	1.2	0.125	5.43	1.16	104	1.23	6.75	120	30.3
14	W-014	Pulp	56.89	0.05	0.05	53.4	817	39.2	295.3	0.034	6.52	0.78	5.4	8.3	<0.2	72.4	<0.01	12.22	1.5	0.117	2.83	2.62	47	1.01	11.95	144	48.6
15	W-015	Pulp	28.25	0.02	0.11	60.4	1231	20.2	326.3	0.029	5.80	1.05	9.2	5.9	0.5	34.3	<0.01	10.08	2.6	0.214	4.42	2.37	94	1.69	15.96	152	58.9
16	W-016	Pulp	22.00	0.01	0.13	19.8	1407	34.6	111.1	<0.001	1.12	2.38	1.6	0.9	0.3	486.6	<0.01	1.46	23.6	0.049	2.06	7.84	25	2.23	19.41	82	221.2
17	W-017	Pulp	82.86	0.04	0.19	6.7	230	30.9	93.3	0.135	0.94	0.99	0.3	1.9	<0.2	374.2	<0.01	5.11	4.6	0.025	1.16	4.04	12	4.97	4.43	97	79.0
18	W-018	Pulp	44.25	<0.01	<0.05	16.4	327	25.4	13.2	0.002	2.51	3.18	0.9	0.3	0.2	315.6	<0.01	0.46	3.6	<0.005	0.27	5.45	9	0.57	8.06	98	49.4
19	W-019	Pulp	277.64	<0.01	<0.05	25.8	389	247.7	46.6	0.18	4.23	27.27	2.3	5.4	0.4	88	0.01	7.78	3.7	0.006	0.63	3.65	12	0.65	12.53	393	59.2
20	W-020	Pulp	161.90	0.01	0.07	27.6	130	147.7	148.1	0.004	2.79	2.76	2.8	1.8	0.2	363.5	<0.01	3.05	3.4	0.039	2.12	5.94	41	1.12	16.19	194	88.4
21	W-021	Pulp	114.74	0.01	0.12	25.5	462	51.3	106.9	0.025	3.21	4.32	3.1	4.4	0.4	163.1	<0.01	7.2	6.6	0.035	1.59	4.25	28	1.12	14.09	69	101.4
22	W-022	Pulp	6.73	0.01	<0.05	43.4	1544	5.8	79.6	0.002	1.49	0.61	3.7	0.6	<0.2	41.5	<0.01	1.19	2.1	0.062	1.49	0.69	91	0.36	6.73	100	30.9
23	W-023	Pulp	7.21	0.03	<0.05	67.7	1293	10.6	298.5	0.015	0.88	0.64	5.2	1.6	<0.2	92.3	<0.01	3.62	1.7	0.217	5.51	1.76	73	0.54	7.31	86	28.2
24	W-024	Pulp	2.44	0.02	0.21	9.3	894	43.7	72.2	<0.001	0.58	2.30	0.9	<0.2	<0.2	870.6	<0.01	0.18	15.6	0.037	1.44	4.79	14	0.51	13.12	49	133.7
25	W-025	Pulp	34.79	0.02	<0.05	74.9	1121	44.2	317.4	0.138	2.19	0.86	7.2	4.9	0.6	84.6	<0.01	8.61	2.5	0.236	4.48	3.13	105	0.45	11.54	126	43.7
26	W-026	Pulp	24.67	0.02	<0.05	58.1	1040	12.0	177.1	0.021	2.45	0.46	4.1	3.1	<0.2	60.1	<0.01	5.51	1.9	0.218	2.81	0.87	70	0.41	6.30	69	27.6
27	W-027	Pulp	8.39	0.02	<0.05	43.1	1117	4.1	647.2	0.002	0.22	0.27	11	0.3	0.3	20.8	<0.01	0.24	0.7	0.445	11.31	0.3	149	0.22	3.79	87	22.5
28	W-028	Pulp	29.73	0.01	0.39	5.8	343	161.5	74.5	0.003	0.03	17.92	0.6	0.4	0.3	277.5	<0.01	6.16	11.5	0.015	1.16	6.83	14	11.50	8.11	93	112.2
29	W-029	Pulp	261.83	0.01	0.23	38.1	1828	225.6	146.0	0.031	1.70	3.81	1.9	0.7	0.3	96.2	<0.01	1.88	25.9	0.041	3.33	16.38	28	2.27	22.58	189	225.4
30	W-030	Pulp	33.64	0.01	<0.05	18.0	374	25.8	105.5	0.001	2.42	2.65	2.8	2.1	0.3	297.2	<0.01	5.59	5.1	0.024	1.77	6.35	44	0.72	8.15	79	87.6
31	W-031	Pulp	302.23	0.02	0.31	33.6	1076	450.0	203.4	0.016	1.88	7.71	5	1.4	0.4	108.9	<0.01	2.14	15.4	0.03	3.72	38.02	36	1.69	24.95	837	136.6
32	W-032	Pulp	22.10	0.02	<0.05	54.6	858	10.0	66.9	0.001	4.18	4.05	2.4	1.9	<0.2	92.3	<0.01	2.73	1.3	0.05	1.52	1.07	26	2.23	6.84	88	47.2
33	W-033	Pulp	0.45	0.02	<0.05	75.5	442	2.3	8.1	<0.001	0.09	0.25	2.2	0.2	<0.2	26	<0.01	0.03	0.4	0.159	0.07	0.1	55	0.08	3.03	91	4.8
34	W-034	Pulp	1.49	0.02	<0.05	22.1	909	4.5	10.4	<0.001	0.49	0.36	1.8	<0.2	<0.2	174.8	<0.01	0.16	1.7	<0.005	0.15	0.29	34	0.32	6.08	48	28.4
35	W-035	Pulp	28.42	<0.01	<0.05	5.2	90	12.1	9.8	0.001	1.23	1.61	0.6	0.4	0.3	171.4	<0.01	1.67	4.2	<0.005	0.17	5.25	5	0.58	9.81	8	73.2
36	W-036	Pulp	976.65	0.03	0.57	9.9	610	393.2	48.9	0.365	1.64	1.90	1.2	5.3	<0.2	498.3	0.02	5.65	11.8	0.007	0.68	9.64	9	2.94	10.92	420	109.0
37	W-037	Pulp	26.07	0.03	0.11	1.9	342	77.0	19.8	0.002	0.87	2.68	0.2	3	<0.2	510.1	<0.01	0.63	10.1	0.006	0.34	6.99	3	0.31	8.26	67	122.1
38	W-038	Pulp	5.51	0.03	<0.05	18.7	508	581.9	52.4	<0.001	2.56	17.10	1.4	0.7	<0.2	961.4	<0.01	1.81	3.2	0.026	0.84	19.44	15	0.42	10.10	332	89.2
39	W-039	Pulp	0.17	0.04	<0.05	35.0	1357	4.8	36.9	<0.001	0.23	0.87	1.6	<0.2	<0.2	286.1	<0.01	0.02	4.9	0.023	0.63	1.48	19	0.29	7.12	67	29.6

S. No.	Sample ID	Method Analyte Unit MDL Sample Type	IMS-130																									
			Silver (Ag) ppm 0.01	Aluminum (Al) % 0.01	Arsenic (As) ppm 0.1	Gold (Au) ppm 0.005	Boron (B) ppm 10	Barium (Ba) ppm 10	Beryllium (Be) ppm 0.05	Bismuth (Bi) ppm 0.01	Calcium (Ca) % 0.01	Cadmium (Cd) ppm 0.01	Barium (Ce) ppm 0.02	Cobalt (Co) ppm 0.1	Chromium (Cr) ppm 1	Cesium (Cs) ppm 0.05	Copper (Cu) ppm 0.2	Iron (Fe) % 0.01	Gallium (Ga) ppm 0.05	Germanium (Ge) ppm 0.05	Hafnium (Hf) ppm 0.02	Mercury (Hg) ppm 0.01	Indium (In) ppm 0.005	Potassium (K) % 0.01	Lanthanum (La) ppm 0.2	Lithium (Li) ppm 0.1	Magnesium (Mg) % 0.01	Manganese (Mn) ppm 5
84	W-084	Pulp	1.02	1.0	14.7	0.3575	<10	63	0.37	0.05	4.23	0.12	40.97	26.8	53	10.84	58.5	6.38	4.23	0.10	1.09	0.02	0.009	0.81	17.4	15.0	1.79	1103
85	W-085	Pulp																										
86	W-086	Pulp	4.25	1.4	9.2	0.3557	<10	73	0.91	0.74	2.31	0.26	64.2	31.2	53	8.11	121.1	6.15	6.55	0.17	1.22	0.03	0.017	1.40	36.8	47.0	1.67	1254
87	W-087	Pulp																										
88	W-088	Pulp	2.43	2.1	35.6	0.295	<10	117	1.15	0.26	0.41	0.3	67.76	36.0	86	18.76	111.9	5.82	6.97	0.14	0.97	0.11	0.013	1.41	38.3	70.7	1.66	258
89	W-089	Pulp																										
90	W-090	Pulp	0.59	2.3	12.1	0.0322	<10	139	0.92	0.08	0.53	0.15	44.71	38.3	75	23.62	79.2	6.69	6.61	0.17	0.94	0.02	0.010	1.99	21.0	74.3	2.21	443
91	W-091	Pulp	0.32	3.0	144.4	0.1049	<10	71	0.29	0.02	5.29	0.07	77.93	57.8	153	13.26	364.6	5.92	8.05	0.15	0.38	0.03	0.019	0.45	38.0	46.1	3.01	853
92	W-092	Pulp	0.12	1.7	45.1	0.1123	<10	64	0.84	0.03	5.22	0.08	19.56	47.4	209	43.47	118.7	6.20	6.71	0.13	0.42	0.01	0.028	1.43	8.7	38.1	3.75	1065
93	W-093	Pulp																										
94	W-094	Pulp	0.04	3.0	4.9	0.0011	<10	29	0.51	<0.01	5.75	0.08	26.79	34.2	40	1.07	85.0	6.34	11.57	0.11	0.50	0.01	0.032	0.07	10.7	64.4	2.36	994
95	W-095	Pulp																										
96	W-096	Pulp	0.54	1.4	53.0	0.0733	<10	93	0.39	0.07	5.13	0.21	33.92	44.2	71	28.53	112.8	7.49	4.04	0.08	0.86	0.02	0.013	1.24	26.4	33.5	3.04	1483
97	W-097	Pulp																										
98	W-098	Pulp	0.48	0.8	52.8	0.1646	<10	65	0.33	0.04	4.35	0.13	38.54	30.7	41	7.51	32.6	5.52	2.63	0.09	1.04	0.02	0.008	0.66	17.0	14.6	1.7	1334
99	W-099	Pulp																										
100	W-100	Pulp	0.20	0.4	27.3	0.1434	<10	135	0.49	0.45	4.77	0.36	66.71	6.2	12	3.06	20.4	0.92	1.52	0.09	1.03	0.21	<0.005	0.33	30.5	7.4	0.18	749
101	W-101	Pulp																										
102	W-102	Pulp	0.04	0.6	13.1	0.003	<10	268	0.92	0.09	4.08	0.04	81.79	4.5	19	8.25	15.9	1.00	2.30	0.10	2.27	0.03	<0.005	0.55	36.2	16.8	0.63	516
103	W-103	Pulp	1.35	1.7	15.5	0.2016	<10	114	1.26	0.10	0.58	0.21	47.27	45.8	77	12.46	95.8	6.09	5.35	0.11	0.57	0.05	0.008	0.79	22.2	45.1	1.42	343
104	W-104	Pulp																										
105	W-105	Pulp	0.48	0.9	11.3	0.0484	<10	46	0.68	0.05	0.29	0.14	43.94	36.4	91	8.12	66.6	7.01	4.33	0.10	0.72	0.01	0.008	0.67	22.1	26.7	0.65	1384
106	W-106	Pulp																										
107	W-107	Pulp	1.39	1.0	43.6	0.337	<10	73	0.56	0.43	0.34	0.35	89.33	17.4	36	6.25	57.4	2.73	3.75	0.12	1.72	0.08	0.006	0.86	45.5	24.5	0.85	109
108	W-108	Pulp																										
109	W-109	Pulp	1.95	1.1	37.1	0.2715	<10	47	0.94	0.84	0.15	1.14	351.06	17.5	48	11.29	46.0	3.33	5.40	0.28	1.75	0.16	0.010	1.16	197.2	95.2	1.44	58
110	W-110	Pulp																										
111	W-111	Pulp	0.54	2.0	6.0	0.0376	<10	146	0.70	<0.01	0.65	0.16	43.35	29.8	106	30.22	87.1	5.94	7.79	0.15	0.61	0.01	0.014	1.64	19.7	67.4	2	713
112	W-112	Pulp	0.08	0.7	3.0	0.0126	<10	35	0.41	<0.01	3.48	0.08	32.36	23.8	51	0.71	35.6	5.53	3.10	0.09	0.51	0.01	0.010	0.17	13.3	9.4	1.64	1256
113	W-113	Pulp	0.10	0.7	152.2	0.0032	<10	64	0.45	0.02	3.73	0.06	52.9	19.3	24	8.46	48.6	4.66	2.42	0.11	0.62	0.05	0.009	0.54	22.7	5.2	0.95	1056
114	W-114	Pulp																										
115	W-115	Pulp	1.60	0.7	10.7	0.1172	<10	179	0.61	0.43	3.64	0.16	73.17	17.7	39	3.06	50.5	3.29	3.46	0.12	1.77	0.01	0.010	0.64	35.6	19.0	1.06	1260
116	W-116	Pulp																										
117	W-117	Pulp	0.50	2.1	9.8	0.0547	<10	18	0.45	0.02	4.24	0.18	34.21	28.2	62	1.10	67.3	5.90	8.43	0.07	0.51	0.02	0.014	0.12	14.2	26.8	2.1	709
118	W-118	Pulp																										
119	W-119	Pulp	0.12	0.4	28.2	0.0068	<10	139	0.63	0.50	3.91	0.13	69.51	5.6	23	3.02	17.4	1.16	1.97	0.10	1.64	0.03	<0.005	0.35	30.0	8.7	0.56	595
120	W-120	Pulp																										
121	W-121	Pulp	0.45	1.0	96.6	0.0587	<10	88	0.46	0.26	5.93	0.13	115.59	30.0	33	22.12	68.9	5.52	3.15	0.10	1.14	0.02	0.013	0.89	77.7	14.1	2.55	1566
122	W-122	Pulp																										
123	W-123	Pulp	11.30	1.3	612.0	0.1018	<10	139	0.66	0.30	4.86	1.09	43.45	28.8	44	27.23	1258.7	4.84	4.34	0.11	1.29	1.58	0.010	1.17	21.1	30.1	2.65	2209
124	W-124	Pulp	0.10	3.0	3.6	0.0042	<10	33	0.37	0.01	0.27	0.04	32.15	32.6	101	0.58	71.9	5.97	10.29	0.08	0.35	0.01	0.022	0.08	13.4	43.6	2.15	360
125	W-125	Pulp	0.65	1.1	70.4	0.1281	<10	59	0.73	0.56	0.05	0.94	214.24	20.8	35	7.52	43.4	3.29	4.31	0.17	2.10	0.09	0.006	1.13	129.7	72.2	1.17	52
126	W-126	Pulp	0.20	1.5	6.3	0.0053	<10	33	0.52	<0.01	2.80	0.1	42.87	32.5	70	5.77	69.1	5.55	4.81	0.08	0.52	0.01	0.010	0.31	19.7	25.7	2.11	1579
127	W-127	Pulp	2.33	1.1	60.3	0.3107	<10	66	0.69	0.20	0.09	0.51	124.42	15.5	42	10.12	39.4	2.82	4.87	0.13	2.43	0.08	0.013	1.34	78.1	111.9	1.53	77

S. No.	Sample ID	Method Analyte Unit MDL Sample Ty	Molybdenum	Sodium	Niobium	Nickel	Phosphorous	Lead	Rubidium	Rhenium	Sulphur	Antimony	Scandium	Selenium	Tin	Strontium	Tantalum	Tellurium	Thorium	Titanium	Thallium	Uranium	Vandium	Tungsten	Yttrium	Zinc	Zirconium
			(Mo) ppm 0.05	(Na) % 0.01	(Nb) ppm 0.05	(Ni) ppm 0.2	(P) ppm 10	(Pb) ppm 0.2	(Rb) ppm 0.1	(Re) ppm 0.001	(S) % 0.01	(Sb) ppm 0.05	(Sc) ppm 0.1	(Se) ppm 0.2	(Sn) ppm 0.2	(Sr) ppm 0.2	(Ta) ppm 0.01	(Te) ppm 0.01	(Th) ppm 0.2	(Ti) % 0.005	(Tl) ppm 0.02	(U) ppm 0.05	(V) ppm 1	(W) ppm 0.05	(Y) ppm 0.05	(Zn) ppm 2	(Zr) ppm 0.5
84	W-084	Pulp	4.50	0.03	<0.05	30.7	1033	4.7	79.6	0.003	0.78	0.43	4.1	1	<0.2	97.8	<0.01	2.03	1.8	0.083	1.2	0.34	83	0.30	9.75	42	46.0
85	W-085	Pulp																									
86	W-086	Pulp	93.98	0.04	<0.05	36.8	893	75.2	198.3	0.074	3.00	0.45	8.2	4.8	0.3	161.9	<0.01	5.94	1.4	0.138	2.46	0.93	88	1.29	8.41	114	50.2
87	W-087	Pulp																									
88	W-088	Pulp	130.83	0.04	0.05	79.4	1066	39.2	177.6	0.075	2.72	1.00	5.3	1.7	0.2	84.9	<0.01	3.68	2.7	0.169	2.84	3.1	75	2.45	8.40	151	39.7
89	W-089	Pulp																									
90	W-090	Pulp	1.86	0.03	<0.05	98.0	975	16.5	195.5	<0.001	1.13	0.56	4	1.5	0.2	26.3	<0.01	0.69	2	0.247	3.76	1.13	76	0.45	6.61	133	40.0
91	W-091	Pulp	7.35	0.02	<0.05	207.9	1924	6.2	39.7	0.001	1.00	0.37	3.8	0.4	<0.2	170.7	<0.01	0.01	1.7	0.065	0.92	0.31	50	0.58	15.32	77	15.0
92	W-092	Pulp	5.62	0.03	<0.05	112.8	742	4.0	127.4	<0.001	0.98	1.06	10.9	0.2	0.5	178.5	0.02	0.27	1.1	0.201	2.7	0.36	107	0.35	5.33	45	15.6
93	W-093	Pulp																									
94	W-094	Pulp	1.73	0.01	<0.05	36.8	750	3.2	3.4	0.001	0.05	0.73	10.4	<0.2	<0.2	107.7	<0.01	0.01	1.6	0.061	0.07	0.21	110	0.20	11.35	118	20.4
95	W-095	Pulp																									
96	W-096	Pulp	11.70	0.02	<0.05	97.1	330	9.7	128.7	0.001	1.79	0.64	6.4	0.5	<0.2	178.2	<0.01	0.61	0.5	0.129	2.58	0.49	81	0.90	5.83	95	33.0
97	W-097	Pulp																									
98	W-098	Pulp	9.61	0.03	<0.05	53.7	913	9.9	56.3	<0.001	2.42	0.76	3.1	0.2	<0.2	180.2	<0.01	0.18	1.8	0.057	1.21	0.41	36	2.23	6.99	58	45.1
99	W-099	Pulp																									
100	W-100	Pulp	8.24	0.02	0.09	7.6	1401	51.0	24.4	<0.001	0.62	2.94	0.5	0.2	<0.2	746.3	<0.01	0.28	6.2	0.01	0.39	4.25	4	0.35	9.80	73	74.4
101	W-101	Pulp																									
102	W-102	Pulp	0.18	0.03	0.12	6.5	1452	18.4	59.3	<0.001	0.06	1.84	0.7	<0.2	<0.2	1187.2	<0.01	0.03	7.9	0.027	0.89	3.79	6	0.23	10.45	41	117.8
103	W-103	Pulp	14.36	0.02	<0.05	91.2	1130	11.5	75.6	0.004	1.73	0.63	2.7	0.8	<0.2	112.4	<0.01	1.92	2	0.083	1.33	1.81	63	0.32	9.64	142	24.3
104	W-104	Pulp																									
105	W-105	Pulp	6.88	0.03	<0.05	92.9	1048	7.8	72.5	<0.001	1.32	0.77	2.9	0.4	<0.2	22.1	<0.01	0.45	2	0.073	1.2	1.01	79	0.59	7.95	99	29.5
106	W-106	Pulp																									
107	W-107	Pulp	20.48	0.01	0.08	25.6	830	26.6	112.8	0.004	2.08	1.24	1.5	1	0.2	176.8	<0.01	2.79	5.2	0.06	2.05	3.11	21	1.11	8.21	115	68.6
108	W-108	Pulp																									
109	W-109	Pulp	112.76	0.02	0.10	28.6	570	65.2	174.4	0.008	2.77	1.46	3.1	2.3	0.3	220.8	<0.01	3.03	5.4	0.042	2.73	8.4	32	1.43	13.18	172	73.8
110	W-110	Pulp																									
111	W-111	Pulp	5.84	0.04	<0.05	56.3	862	7.7	166.4	<0.001	0.29	0.50	5.6	<0.2	0.3	35.3	<0.01	0.44	1.8	0.231	2.47	0.96	88	0.32	9.60	116	20.7
112	W-112	Pulp	0.99	0.02	<0.05	38.9	835	1.7	8.0	<0.001	0.03	0.77	2.3	<0.2	<0.2	72	<0.01	0.04	1.4	0.05	0.09	0.24	48	0.20	7.54	52	20.5
113	W-113	Pulp	2.16	0.02	0.28	16.2	1444	3.5	42.7	<0.001	0.12	4.88	2.4	<0.2	<0.2	197	<0.01	0.03	2.9	0.066	1.07	0.44	19	0.47	9.74	88	39.7
114	W-114	Pulp																									
115	W-115	Pulp	13.79	0.04	0.05	27.9	798	20.7	97.7	0.003	1.90	0.76	2.4	1.4	<0.2	327	<0.01	2.8	5	0.054	1.33	1.96	25	0.75	9.16	98	74.5
116	W-116	Pulp																									
117	W-117	Pulp	3.44	0.02	<0.05	48.0	910	6.0	8.8	<0.001	0.32	0.80	4	0.2	<0.2	94.4	<0.01	0.46	1.7	0.047	0.15	0.31	78	1.03	8.41	93	22.2
118	W-118	Pulp																									
119	W-119	Pulp	0.85	0.04	0.08	6.9	1420	35.5	29.0	<0.001	0.38	1.58	0.7	<0.2	<0.2	576.7	<0.01	0.04	6.3	0.017	0.48	3.02	6	0.22	9.00	60	84.3
120	W-120	Pulp																									
121	W-121	Pulp	20.35	0.02	0.23	47.2	707	34.3	100.7	0.002	1.36	4.42	4	0.4	<0.2	380.6	<0.01	0.3	1.7	0.118	1.98	2.02	36	0.67	9.31	130	46.2
122	W-122	Pulp																									
123	W-123	Pulp	3.07	0.03	<0.05	54.2	706	38.4	115.0	0.001	2.21	55.34	3.5	0.7	<0.2	395.6	<0.01	0.77	2.3	0.096	2.56	3.71	37	0.46	8.55	306	51.3
124	W-124	Pulp	0.57	0.02	<0.05	74.5	1017	4.6	3.1	<0.001	0.05	0.58	6.5	<0.2	<0.2	21.6	0.01	<0.01	2	0.054	0.06	0.54	89	0.18	7.82	105	12.0
125	W-125	Pulp	87.28	0.01	0.07	26.4	755	54.8	143.5	0.01	2.87	1.61	1.7	1.9	0.3	343.5	0.01	2.12	5.6	0.037	2.4	6	24	1.59	8.33	102	78.9
126	W-126	Pulp	1.57	0.02	<0.05	85.6	955	4.5	25.6	<0.001	0.09	1.02	2.8	<0.2	<0.2	58.3	<0.01	0.01	2	0.052	0.65	0.7	46	0.34	6.90	96	20.3
127	W-127	Pulp	29.81	0.01	0.08	26.4	305	36.6	158.7	0.003	2.21	1.35	2.4	1.4	0.3	289.1	<0.01	2.57	4.7	0.045	2.53	5.68	40	1.11	8.32	141	92.0

S. No.	Sample ID	Method Analyte Unit MDL Sample Type	IMS-130																											
			Silver (Ag) ppm 0.01	Aluminum (Al) % 0.01	Arsenic (As) ppm 0.1	Gold (Au) ppm 0.005	Boron (B) ppm 10	Barium (Ba) ppm 10	Beryllium (Be) ppm 0.05	Bismuth (Bi) ppm 0.01	Calcium (Ca) % 0.01	Cadmium (Cd) ppm 0.01	Caesium (Cs) ppm 0.02	Cobalt (Co) ppm 0.1	Chromium (Cr) ppm 1	Cesium (Cs) ppm 0.05	Copper (Cu) ppm 0.2	Iron (Fe) % 0.01	Gallium (Ga) ppm 0.05	Germanium (Ge) ppm 0.05	Hafnium (Hf) ppm 0.02	Mercury (Hg) ppm 0.01	Indium (In) ppm 0.005	Potassium (K) % 0.01	Lanthanum (La) ppm 0.2	Lithium (Li) ppm 0.1	Magnesium (Mg) % 0.01	Manganese (Mn) ppm 5		
128	W-128	Pulp	0.27	3.4	8.5	0.012	<10	40	0.17	<0.01	2.95	0.06	8.44	38.0	172	5.73	93.3	6.36	8.72	0.12	0.12	0.02	0.007	0.17	3.6	29.8	3.05	798		
129	W-129	Pulp	0.40	5.0	81.8	0.0239	<10	120	2.26	0.05	0.17	0.05	16.5	80.0	935	28.00	107.1	14.71	16.02	0.47	0.41	0.01	0.067	1.86	6.8	112.0	6.28	442		
130	W-130	Pulp	0.31	3.0	10.4	0.0064	<10	19	0.26	0.01	0.42	0.1	19.96	41.5	142	1.51	107.9	8.11	11.26	0.11	0.24	0.02	0.020	0.07	8.1	25.4	2.76	948		
131	W-131	Pulp	0.08	2.6	6.0	0.0044	<10	29	0.81	0.03	4.58	0.09	160.27	29.3	226	1.12	41.0	4.97	7.29	0.11	0.61	<0.005	0.015	0.10	121.2	46.8	1.83	817		
132	W-132	Pulp	3.46	1.6	17.7	0.4408	<10	68	1.31	0.52	0.49	5.17	47.11	36.8	67	10.74	136.7	7.79	7.65	0.20	1.06	0.28	0.034	1.80	28.2	103.9	2.02	3076		
133	W-133	Pulp	0.05	1.6	36.7	0.0138	<10	12	0.56	0.01	5.00	0.07	17.9	32.6	94	1.86	57.9	5.86	4.33	0.08	0.35	0.02	0.011	0.17	8.0	40.1	2.47	1035		
134	W-134	Pulp	1.86	2.0	14.7	0.2506	<10	254	1.01	0.13	0.29	0.11	57.49	33.4	81	15.23	108.7	6.09	8.18	0.16	0.76	0.07	0.018	2.00	28.8	44.3	1.98	396		
135	W-135	Pulp	0.34	1.6	110.8	0.0658	<10	61	0.37	0.26	3.24	0.06	93.68	33.4	84	37.71	67.7	5.37	5.97	0.13	1.21	0.03	0.018	0.91	53.2	28.5	2.73	793		
136	W-136	Pulp																												
137	W-137	Pulp	1.98	2.3	102.7	0.4628	<10	38	0.38	0.06	2.01	0.34	133.98	33.1	55	47.08	60.2	8.59	7.19	0.19	1.32	0.16	0.019	1.64	87.5	49.5	2.65	1114		
138	W-138	Pulp																												
139	W-139	Pulp	3.02	0.4	455.2	0.1642	<10	49	0.30	0.62	2.75	8.38	53.99	28.0	39	4.80	55.1	7.57	2.53	0.11	1.24	2.25	0.089	0.40	32.0	6.0	1	1724		
140	W-140	Pulp																												
141	W-141	Pulp	0.13	0.5	29.8	0.1022	<10	124	0.45	0.29	3.52	0.04	86.96	12.8	25	5.70	36.6	2.55	2.23	0.11	3.12	0.06	0.006	0.49	39.2	11.8	0.64	724		
142	W-142	Pulp																												
143	W-143	Pulp																												
144	W-144	Pulp																												
145	W-145	Pulp																												
146	W-146	Pulp																												
147	W-147	Pulp																												
148	W-148	Pulp																												
149	W-149	Pulp																												
150	W-150	Pulp	1.50	2.2	23.3	0.1718	<10	157	1.14	0.04	0.38	0.25	47.66	43.5	36	42.00	148.2	10.22	13.01	0.31	0.77	0.12	0.068	2.24	21.1	55.9	2.06	1313		
151	W-151	Pulp	0.66	1.5	5.3	0.1902	<10	149	1.41	0.02	1.80	0.06	20.56	35.3	72	1.78	72.9	6.42	3.85	0.07	0.28	0.10	0.006	0.14	8.8	18.6	1.67	1600		
152	W-152	Pulp																												
153	W-153	Pulp																												
154	W-154	Pulp																												
155	W-155	Pulp																												
156	W-156	Pulp																												
157	W-157	Pulp																												
158	W-158	Pulp																												
159	W-159	Pulp																												
160	W-160	Pulp																												
161	W-161	Pulp																												
162	W-162	Pulp	1.00	0.7	87.5	0.0983	<10	70	0.54	0.04	0.84	0.11	9.51	62.2	72	6.92	118.8	9.69	2.28	0.07	0.55	0.14	0.010	0.64	5.1	8.7	0.78	3377		
163	W-163	Pulp	2.01	1.6	17.2	0.3958	<10	49	0.82	0.03	0.49	0.19	27.16	38.5	78	6.87	84.5	6.31	5.61	0.08	0.49	0.07	0.011	0.29	11.6	18.6	1.49	2315		
164	W-164	Pulp	4.92	0.8	99.6	1.5386	<10	38	0.47	0.03	2.82	0.38	94.87	22.1	61	4.75	42.2	5.93	4.21	0.20	1.98	0.25	0.018	1.12	52.2	32.8	0.88	913		
165	W-165	Pulp	1.03	1.5	10.0	0.3303	<10	63	0.56	0.05	2.13	0.46	52.15	30.3	67	12.56	61.9	5.68	4.71	0.09	0.66	0.05	0.010	0.60	28.3	19.6	2.07	1950		
166	W-166	Pulp	2.37	2.8	155.1	8.9834	<10	34	1.18	0.10	0.47	0.13	34.6	51.8	119	49.36	136.4	7.98	8.11	0.21	0.96	0.08	0.022	3.39	21.8	190.6	3.84	606		
167	W-167	Pulp	0.26	2.1	7.9	0.1984	<10	56	0.31	0.03	1.58	0.14	30.55	29.0	117	11.34	9.4	5.29	7.83	0.12	0.97	0.03	0.013	0.72	12.9	25.8	1.96	422		
168	W-168	Pulp	0.15	3.0	40.3	0.0321	<10	13	0.23	<0.01	4.47	0.07	16.26	34.4	210	1.10	41.0	6.22	8.67	0.09	0.42	0.02	0.017	0.09	7.2	55.8	3.16	1092		
169	W-169	Pulp	0.34	3.1	6.6	0.1316	<10	24	0.62	0.02	0.84	0.15	17.41	50.5	140	0.89	61.7	6.99	7.35	0.08	0.27	0.02	0.012	0.12	7.4	36.4	3.02	960		
170	W-170	Pulp	0.08	2.9	34.7	0.3103	<10	63	0.16	0.02	4.49	0.03	25.04	38.3	151	12.96	16.5	5.40	6.93	0.09	0.38	0.01	0.011	0.54	14.2	44.3	2.82	800		
171	W-171	Pulp	4.57	1.8	7.9	0.599	<10	77	0.98	0.14	0.25	0.25	64.16	30.5	49	12.45	94.9	5.76	4.97	0.15	1.05	0.04	0.009	2.01	35.5	92.9	2.1	995		

S. No.	Sample ID	Method Analyte Unit MDL Sample Ty	Molybdenum	Sodium	Niobium	Nickel	Phosphorous	Lead	Rubidium	Rhenium	Sulphur	Antimony	Scandium	Selenium	Tin	Strontium	Tantalum	Tellurium	Thorium	Titanium	Thallium	Uranium	Vandium	Tungsten	Yttrium	Zinc	Zirconium	
			(Mo) ppm 0.05	(Na) % 0.01	(Nb) ppm 0.05	(Ni) ppm 0.2	(P) ppm 10	(Pb) ppm 0.2	(Rb) ppm 0.1	(Re) ppm 0.001	(S) % 0.01	(Sb) ppm 0.05	(Sc) ppm 0.1	(Se) ppm 0.2	(Sn) ppm 0.2	(Sr) ppm 0.2	(Ta) ppm 0.01	(Te) ppm 0.01	(Th) ppm 0.2	(Ti) % 0.005	(Tl) ppm 0.02	(U) ppm 0.05	(V) ppm 1	(W) ppm 0.05	(Y) ppm 0.05	(Zn) ppm 2	(Zr) ppm 0.5	
128	W-128	Pulp	0.69	0.02	0.08	62.3	672	3.7	18.2	<0.001	0.12	1.17	4.7	0.2	0.2	43	<0.01	0.09	0.6	0.157	0.49	0.1	120	0.51	4.69	107	4.6	
129	W-129	Pulp	0.37	0.02	0.12	390.1	633	5.8	197.9	<0.001	0.05	0.87	32.5	<0.2	0.8	43.1	<0.01	0.12	0.7	0.459	3.26	17.93	227	2.88	3.68	325	14.3	
130	W-130	Pulp	0.62	0.02	0.05	39.6	1021	7.3	6.7	<0.001	0.15	1.27	11.1	0.2	0.3	24.7	<0.01	0.05	1.3	0.09	0.18	0.22	192	0.21	9.24	137	7.1	
131	W-131	Pulp	3.38	0.01	<0.05	52.0	530	4.9	4.2	0.002	0.07	1.43	5	<0.2	<0.2	62.3	<0.01	<0.01	1.9	0.032	0.08	1.29	51	0.63	11.32	84	25.0	
132	W-132	Pulp	42.12	0.04	<0.05	40.1	904	20.5	243.5	0.012	2.81	0.40	12.2	2.9	0.5	48.8	<0.01	4.45	1.1	0.143	3.1	1.5	126	1.16	9.19	1346	40.1	
133	W-133	Pulp	3.89	0.01	<0.05	46.3	386	2.5	9.4	<0.001	0.69	1.58	5	<0.2	<0.2	93.7	<0.01	0.01	0.9	0.032	0.2	0.22	39	9.42	7.18	132	14.1	
134	W-134	Pulp	14.61	0.05	<0.05	68.9	1073	15.5	202.5	0.007	1.23	0.44	7.6	1.1	0.4	25.1	<0.01	3.43	2.6	0.267	3.49	0.99	115	0.60	8.96	78	27.4	
135	W-135	Pulp	6.71	0.03	0.13	89.3	542	7.5	78.1	0.002	1.80	1.25	5.6	0.3	0.3	96	<0.01	0.1	3.3	0.123	1.8	1.86	64	7.82	7.73	42	47.7	
136	W-136	Pulp																										
137	W-137	Pulp	35.35	0.02	0.17	45.5	818	10.4	143.0	0.003	4.83	0.95	7.1	0.7	0.3	85	<0.01	1.57	1.9	0.201	3.15	1.74	81	6.07	7.57	255	53.0	
138	W-138	Pulp																										
139	W-139	Pulp	47.00	0.02	0.07	22.4	1336	989.8	38.5	0.002	6.68	6.83	4.7	5.9	<0.2	342.6	<0.01	3.74	1.8	0.036	0.88	1.24	28	0.81	10.44	2667	49.9	
140	W-140	Pulp																										
141	W-141	Pulp	2.43	0.03	0.65	19.8	750	13.9	46.3	<0.001	0.37	2.39	1.7	<0.2	<0.2	338.2	<0.01	0.07	11.4	0.061	1.04	3.91	19	0.56	13.07	43	133.6	
142	W-142	Pulp																										
143	W-143	Pulp																										
144	W-144	Pulp																										
145	W-145	Pulp																										
146	W-146	Pulp																										
147	W-147	Pulp																										
148	W-148	Pulp																										
149	W-149	Pulp																										
150	W-150	Pulp	4.22	0.04	<0.05	21.1	1492	14.9	183.4	0.004	1.75	0.93	26.9	1.9	0.6	16.9	<0.01	3.94	1.5	0.317	2.74	0.78	267	0.49	11.78	163	28.3	
151	W-151	Pulp	3.73	0.02	<0.05	72.3	632	4.3	10.9	0.002	0.62	1.38	2	0.5	<0.2	62.7	<0.01	1.22	0.8	0.009	0.18	0.21	38	6.23	7.34	85	11.4	
152	W-152	Pulp																										
153	W-153	Pulp																										
154	W-154	Pulp																										
155	W-155	Pulp																										
156	W-156	Pulp																										
157	W-157	Pulp																										
158	W-158	Pulp																										
159	W-159	Pulp																										
160	W-160	Pulp																										
161	W-161	Pulp																										
162	W-162	Pulp	10.68	0.02	<0.05	119.9	555	9.3	59.1	0.002	2.67	3.09	4.6	0.5	<0.2	46.6	0.02	0.63	0.4	0.04	1.34	0.37	54	1.51	5.27	129	18.4	
163	W-163	Pulp	63.42	0.02	<0.05	56.0	1245	47.0	31.4	0.002	1.38	0.54	3.4	0.6	0.2	22.5	<0.01	1.81	1.4	0.025	0.68	0.3	74	1.85	9.32	180	18.6	
164	W-164	Pulp	42.38	0.02	0.08	16.8	1188	35.2	108.6	0.007	6.20	2.53	5.3	4	0.2	213.9	0.01	6.8	2.7	0.023	1.57	1.41	37	1.08	17.27	87	78.6	
165	W-165	Pulp	34.32	0.02	<0.05	72.0	1256	9.6	52.1	0.005	1.18	0.63	3.2	0.4	<0.2	51.8	<0.01	1.23	1.7	0.079	0.99	0.87	55	0.48	7.48	135	27.0	
166	W-166	Pulp	21.85	0.03	<0.05	122.5	338	21.8	354.9	0.009	4.93	2.16	11.4	3.2	<0.2	25.2	<0.01	3.95	0.4	0.274	5.71	2.81	137	0.76	6.68	154	33.1	
167	W-167	Pulp	2.22	0.02	<0.05	81.3	1157	7.1	55.5	<0.001	0.42	0.48	5.5	<0.2	0.2	24.4	<0.01	0.7	2.1	0.12	1.07	0.69	93	0.32	11.54	95	30.7	
168	W-168	Pulp	1.65	0.01	<0.05	53.6	431	3.7	4.4	<0.001	1.31	0.70	9.3	<0.2	<0.2	74.3	<0.01	0.02	0.9	0.007	0.13	0.19	79	0.06	7.66	77	16.2	
169	W-169	Pulp	6.40	0.01	<0.05	95.3	637	5.8	8.4	<0.001	0.75	0.14	4.2	0.7	<0.2	13.8	<0.01	0.63	0.8	0.021	0.16	0.21	69	0.23	8.37	128	8.8	
170	W-170	Pulp	4.88	0.02	<0.05	133.8	433	3.9	54.8	<0.001	0.36	0.40	3.8	<0.2	<0.2	96.2	<0.01	0.04	0.8	0.065	1.41	0.31	54	3.14	9.11	62	13.6	
171	W-171	Pulp	41.12	0.03	<0.05	54.0	1107	20.3	199.4	0.017	2.91	0.34	4.2	3	<0.2	14.9	<0.01	7.28	1.5	0.181	2.46	1.01	53	0.63	8.98	153	39.7	

S. No.	Sample ID	Method Analyte Unit MDL Sample Type	MS-130																									
			Silver (Ag) ppm 0.01	Aluminum (Al) % 0.01	Arsenic (As) ppm 0.1	Gold (Au) ppm 0.005	Boron (B) ppm 10	Barium (Ba) ppm 10	Beryllium (Be) ppm 0.05	Bismuth (Bi) ppm 0.01	Calcium (Ca) % 0.01	Cadmium (Cd) ppm 0.01	Caesium (Cs) ppm 0.02	Cobalt (Co) ppm 0.1	Chromium (Cr) ppm 1	Cesium (Cs) ppm 0.05	Copper (Cu) ppm 0.2	Iron (Fe) % 0.01	Gallium (Ga) ppm 0.05	Germanium (Ge) ppm 0.05	Hafnium (Hf) ppm 0.02	Mercury (Hg) ppm 0.01	Indium (In) ppm 0.005	Potassium (K) % 0.01	Lanthanum (La) ppm 0.2	Lithium (Li) ppm 0.1	Magnesium (Mg) % 0.01	Manganese (Mn) ppm 5
172	W-172	Pulp																										
173	W-173	Pulp	2.21	1.2	10.5	0.2056	<10	42	1.10	0.66	0.60	0.96	126.95	30.4	59	5.11	311.0	5.23	4.77	0.19	1.12	0.12	0.019	1.24	75.2	47.3	1.21	158
174	W-174	Pulp																										
175	W-175	Pulp																										
176	W-176	Pulp																										
177	W-177	Pulp																										
178	W-178	Pulp																										
179	W-179	Pulp	0.53	2.5	9.2	0.0183	<10	29	0.45	0.05	0.28	0.12	34.73	37.0	104	0.96	88.8	5.91	7.29	0.10	0.35	0.03	0.013	0.13	14.9	35.9	2.29	752
180	W-180	Pulp	0.73	0.8	7.4	0.1727	<10	257	0.57	0.37	0.11	0.44	39.15	4.6	27	2.73	13.9	0.84	1.84	0.07	1.86	0.02	<0.005	0.35	19.4	9.3	0.25	143
181	W-181	Pulp																										
182	W-182	Pulp																										
183	W-183	Pulp																										
184	W-184	Pulp																										
185	W-185	Pulp																										
186	W-186	Pulp																										
187	W-187	Pulp																										
188	W-188	Pulp																										
189	W-189	Pulp																										
190	W-190	Pulp																										
191	W-191	Pulp																										
192	W-192	Pulp	0.62	0.6	90.1	0.0301	<10	62	0.34	0.03	2.67	0.33	46.05	20.5	39	8.75	27.9	6.39	2.70	0.10	2.17	0.08	0.018	0.64	23.6	10.7	1.26	1390
193	W-193	Pulp																										
194	W-194	Pulp	0.92	0.4	16.6	0.18	<10	256	0.39	0.29	1.07	0.36	41.85	5.5	28	2.26	14.0	1.33	1.52	0.08	2.89	0.03	<0.005	0.40	22.7	11.0	0.31	552
195	W-195	Pulp																										
196	W-196	Pulp	0.21	0.6	89.9	0.0089	<10	161	0.39	0.18	4.01	0.65	52.31	18.0	31	6.53	40.9	3.74	2.69	0.09	1.82	0.15	0.010	0.64	23.9	11.3	0.87	1095
197	W-197	Pulp																										
198	W-198	Pulp	1.08	0.5	205.8	0.0222	<10	65	0.29	0.08	5.24	2.6	29.68	26.2	24	5.83	74.4	4.65	1.28	0.08	0.92	1.87	0.012	0.51	14.0	7.1	1.14	1696
199	W-199	Pulp	2.35	2.4	13.8	0.2131	<10	116	1.11	0.04	2.91	0.27	26.44	34.9	156	13.41	74.3	7.08	6.27	0.11	0.35	0.20	0.013	0.50	12.5	28.3	2.27	914
200	W-200	Pulp	0.21	1.7	11.9	0.0949	<10	29	0.22	0.04	6.21	0.08	39.23	27.7	45	1.64	73.1	4.77	7.30	0.08	0.43	0.02	0.017	0.15	17.0	20.1	1.4	1171
201	W-201	Pulp																										
202	W-202	Pulp	0.15	2.6	6.7	0.0096	<10	23	0.25	0.04	5.05	0.05	41.17	28.7	58	0.89	74.8	5.50	8.82	0.08	0.42	0.02	0.014	0.18	17.8	22.0	1.83	868
203	W-203	Pulp																										
204	W-204	Pulp	0.27	0.9	15.0	0.0257	<10	140	0.51	0.02	5.04	0.11	44.61	31.2	37	6.95	309.9	7.07	6.76	0.10	0.80	0.05	0.030	0.77	20.1	14.6	1.92	1536
205	W-205	Pulp																										
206	W-206	Pulp	0.13	0.8	211.1	0.0213	<10	58	0.58	0.05	4.20	0.17	39.66	23.6	39	11.08	27.4	5.44	3.93	0.10	1.28	0.08	0.013	0.75	17.1	6.3	0.54	1466
207	W-207	Pulp	0.40	0.6	108.1	0.1721	<10	26	0.69	0.02	5.18	0.18	24.94	29.8	31	11.80	54.8	5.63	1.97	0.08	0.65	0.03	0.009	0.50	11.4	9.8	2	1092
208	W-208	Pulp	0.31	0.9	202.1	0.3944	<10	88	0.59	0.07	3.79	0.14	36.39	21.8	40	9.83	37.9	4.26	3.72	0.09	1.55	0.07	0.008	0.82	16.4	12.7	0.65	1277
209	W-209	Pulp	1.85	1.3	58.7	1.5883	<10	35	0.60	0.29	0.39	0.17	46.34	30.6	40	6.37	52.7	8.13	5.04	0.10	1.51	0.13	0.012	0.83	25.1	34.5	0.87	1435
210	W-210	Pulp	0.07	3.0	2.9	0.0104	<10	33	0.21	<0.01	4.27	0.1	29.04	28.9	110	2.60	69.2	5.57	10.16	0.09	0.25	0.01	0.015	0.17	11.9	33.1	2.75	746
211	W-211	Pulp	0.30	0.9	38.1	0.1679	<10	84	0.38	0.16	3.06	0.02	32.91	33.7	30	6.47	42.1	5.35	4.67	<0.05	2.03	0.02	0.011	0.82	17.3	38.5	1	805
212	W-212	Pulp	0.13	3.1	3.1	0.0036	<10	51	0.15	0.02	4.76	0.03	29.61	28.0	110	6.00	47.7	5.51	10.35	0.08	0.22	0.04	0.017	0.30	12.7	31.5	2.65	703
213	W-213	Pulp	1.91	1.3	64.0	0.2246	<10	29	0.83	0.19	0.57	0.97	124.86	40.8	52	9.82	72.6	6.83	4.26	0.13	1.77	0.05	0.012	1.12	73.1	25.4	1.07	1902
214	W-214	Pulp	0.51	2.8	2.9	0.0047	<10	60	0.16	<0.01	4.90	0.17	34.58	29.6	123	10.23	48.4	5.99	11.33	0.10	0.56	0.01	0.019	0.34	14.7	32.3	2.56	994
215	W-215	Pulp	6.47	0.6	32.2	0.5731	<10	68	0.26	0.16	4.67	0.37	31.63	26.1	35	3.95	89.1	5.82	2.67	0.09	1.14	0.24	0.014	0.55	16.2	11.0	1.3	1661

S. No.	Sample ID	Method Analyte Unit MDL Sample Ty	Molybdenum	Sodium	Niobium	Nickel	Phosphorous	Lead	Rubidium	Rhenium	Sulphur	Antimony	Scandium	Selenium	Tin	Strontium	Tantalum	Tellurium	Thorium	Titanium	Thallium	Uranium	Vandium	Tungsten	Yttrium	Zinc	Zirconium
			(Mo) ppm 0.05	(Na) % 0.01	(Nb) ppm 0.05	(Ni) ppm 0.2	(P) ppm 10	(Pb) ppm 0.2	(Rb) ppm 0.1	(Re) ppm 0.001	(S) % 0.01	(Sb) ppm 0.05	(Sc) ppm 0.1	(Se) ppm 0.2	(Sn) ppm 0.2	(Sr) ppm 0.2	(Ta) ppm 0.01	(Te) ppm 0.01	(Th) ppm 0.2	(Ti) % 0.005	(Tl) ppm 0.02	(U) ppm 0.05	(V) ppm 1	(W) ppm 0.05	(Y) ppm 0.05	(Zn) ppm 2	(Zr) ppm 0.5
172	W-172	Pulp																									
173	W-173	Pulp	126.97	0.03	<0.05	36.9	2656	92.8	145.4	0.125	4.27	0.56	4.9	2.4	0.5	54.1	<0.01	3.04	2.2	0.11	1.8	3.42	61	1.04	9.62	267	43.8
174	W-174	Pulp																									
175	W-175	Pulp																									
176	W-176	Pulp																									
177	W-177	Pulp																									
178	W-178	Pulp																									
179	W-179	Pulp	1.50	0.02	<0.05	83.2	1190	9.6	6.4	<0.001	0.56	0.47	3.7	0.2	<0.2	12.3	<0.01	0.56	1.8	0.034	0.24	0.41	62	0.26	8.08	227	13.7
180	W-180	Pulp	2.33	0.03	0.05	6.2	48	34.9	36.6	<0.001	0.43	0.82	0.3	1.2	0.3	167.8	<0.01	0.93	4.8	0.011	0.67	4.25	4	0.50	4.33	70	72.3
181	W-181	Pulp																									
182	W-182	Pulp																									
183	W-183	Pulp																									
184	W-184	Pulp																									
185	W-185	Pulp																									
186	W-186	Pulp																									
187	W-187	Pulp																									
188	W-188	Pulp																									
189	W-189	Pulp																									
190	W-190	Pulp																									
191	W-191	Pulp																									
192	W-192	Pulp	14.05	0.02	<0.05	17.4	1208	9.5	78.1	<0.001	4.33	1.62	4.5	0.3	0.2	224.5	<0.01	0.1	2.3	0.064	1.85	7.17	33	1.70	12.47	98	88.1
193	W-193	Pulp																									
194	W-194	Pulp	34.26	0.03	0.10	6.3	381	75.0	37.9	0.004	1.13	0.88	0.5	0.6	<0.2	297.5	<0.01	1.26	5.3	0.014	0.57	3.96	6	0.52	5.92	115	118.5
195	W-195	Pulp																									
196	W-196	Pulp	4.45	0.03	0.06	27.7	706	33.8	59.5	<0.001	1.74	1.88	2.4	0.2	<0.2	390.5	<0.01	0.23	4.1	0.068	1.22	2.23	33	0.51	10.11	174	74.1
197	W-197	Pulp																									
198	W-198	Pulp	9.16	0.01	0.12	39.1	722	208.5	33.4	0.002	2.63	11.82	1.9	2	<0.2	177.3	<0.01	2.65	1.4	0.041	0.71	1.67	17	0.62	8.27	845	35.9
199	W-199	Pulp	4.03	0.02	<0.05	50.0	650	17.1	71.1	0.001	1.86	1.57	5	0.8	<0.2	85.5	<0.01	2.6	0.9	0.05	1.23	0.31	75	6.05	10.45	156	13.9
200	W-200	Pulp	3.97	0.02	0.07	36.4	947	3.3	10.8	<0.001	0.50	0.85	4	<0.2	<0.2	90.5	0.01	0.21	1.8	0.052	0.24	0.22	62	2.10	8.43	85	19.5
201	W-201	Pulp																									
202	W-202	Pulp	0.83	0.02	<0.05	32.7	900	2.9	12.3	<0.001	0.16	1.74	3.7	<0.2	<0.2	131.1	<0.01	0.02	2	0.047	0.27	0.15	58	0.17	7.05	82	18.8
203	W-203	Pulp																									
204	W-204	Pulp	2.59	0.05	0.20	44.3	1429	4.0	59.9	<0.001	0.51	1.02	7.8	<0.2	0.4	155.6	<0.01	0.22	2.8	0.177	1.14	0.71	141	1.19	10.60	73	48.5
205	W-205	Pulp																									
206	W-206	Pulp	6.70	0.01	0.52	40.5	1292	9.3	119.3	0.002	0.58	4.76	3.5	<0.2	0.3	174.3	<0.01	0.04	2.9	0.118	3.46	1.21	34	43.80	12.26	77	72.0
207	W-207	Pulp	8.58	0.01	0.17	35.4	496	4.4	48.8	0.001	1.54	2.22	3.8	0.4	<0.2	166.9	<0.01	0.89	1	0.06	1.27	0.36	34	1.46	5.85	44	25.7
208	W-208	Pulp	7.19	0.02	0.51	27.7	1178	6.9	120.4	<0.001	0.98	2.61	2.6	<0.2	0.2	143.3	<0.01	0.11	2.4	0.112	3.38	1.11	34	8.30	9.85	68	72.8
209	W-209	Pulp	27.64	0.02	0.05	35.7	1481	16.9	116.2	0.002	6.38	0.82	3.7	0.5	0.2	47.5	<0.01	2.33	2	0.065	2.24	1.27	42	1.34	10.44	113	61.2
210	W-210	Pulp	0.69	0.01	0.11	79.1	884	4.0	10.4	<0.001	0.02	0.45	5.6	<0.2	0.2	61.9	<0.01	<0.01	1.9	0.122	0.2	0.26	70	0.09	8.40	89	9.5
211	W-211	Pulp	35.87	0.05	<0.05	49.7	663	4.2	78.0	<0.001	2.63	1.98	4.1	<0.2	0.3	31.2	<0.01	0.34	2.5	0.097	1.45	0.91	60	1.62	9.90	31	94.2
212	W-212	Pulp	0.71	0.02	0.07	78.6	838	2.2	20.2	<0.001	0.06	0.43	5.9	<0.2	0.2	51.2	<0.01	0.02	1.9	0.101	0.33	0.29	71	0.13	8.11	78	9.9
213	W-213	Pulp	32.13	0.02	0.18	55.3	1048	52.4	121.5	0.017	5.11	3.88	3.5	0.9	<0.2	87.5	<0.01	1.72	2.2	0.12	2.32	16.1	41	2.10	12.01	206	77.7
214	W-214	Pulp	1.80	0.02	<0.05	82.5	825	9.1	32.2	<0.001	0.05	0.48	5.8	<0.2	<0.2	78.1	<0.01	0.02	1.8	0.093	0.58	0.37	92	0.09	9.38	138	25.9
215	W-215	Pulp	19.05	0.03	<0.05	25.3	881	172.3	61.7	0.004	2.85	1.54	4.2	4.5	<0.2	217.2	<0.01	8.35	1.1	0.063	0.88	0.79	45	3.13	7.98	104	51.1

S. No.	Sample ID	Method Analyte Unit MDL Sample Type	MS-130																											
			Silver (Ag) ppm 0.01	Aluminum (Al) % 0.01	Arsenic (As) ppm 0.1	Gold (Au) ppm 0.005	Boron (B) ppm 10	Barium (Ba) ppm 10	Beryllium (Be) ppm 0.05	Bismuth (Bi) ppm 0.01	Calcium (Ca) % 0.01	Cadmium (Cd) ppm 0.01	Carlum (Ce) ppm 0.02	Cobalt (Co) ppm 0.1	Chromium (Cr) ppm 1	Cesium (Cs) ppm 0.05	Copper (Cu) ppm 0.2	Iron (Fe) % 0.01	Gallium (Ga) ppm 0.05	Germanium (Ge) ppm 0.05	Hafnium (Hf) ppm 0.02	Mercury (Hg) ppm 0.01	Indium (In) ppm 0.005	Potassium (K) % 0.01	Lanthanum (La) ppm 0.2	Lithium (Li) ppm 0.1	Magnesium (Mg) % 0.01	Manganese (Mn) ppm 5		
216	W-216	Pulp	0.15	2.2	5.4	0.0275	<10	24	0.24	0.03	5.69	0.09	26	27.9	103	1.82	55.9	5.47	8.40	0.07	0.40	0.02	0.015	0.14	11.1	27.8	1.92	956		
217	W-217	Pulp	0.78	0.9	83.0	0.1708	<10	90	0.36	0.03	3.18	0.85	50.77	12.9	54	5.17	22.8	5.09	4.37	0.08	3.00	0.24	0.017	0.83	23.9	10.1	1.06	1636		
218	W-218	Pulp	4.11	1.4	14.6	0.1409	<10	40	0.72	1.16	3.22	0.45	77.57	28.6	73	16.50	334.0	6.50	7.49	0.18	0.91	0.05	0.023	1.32	44.8	93.2	1.63	831		
219	W-219	Pulp	0.20	1.7	70.8	0.0513	<10	43	0.62	0.03	0.50	0.06	10.84	75.8	87	17.57	135.1	10.76	4.44	0.10	0.53	0.04	0.012	1.14	5.1	39.1	1.21	4143		
220	W-220	Pulp	0.15	0.9	160.5	0.0367	<10	31	0.28	0.04	4.24	0.06	25.48	29.9	38	33.33	21.9	8.10	3.52	0.10	0.76	0.02	0.013	0.70	10.6	16.0	2.06	1330		
221	W-221	Pulp	1.51	0.7	24.2	0.0902	<10	203	0.36	0.31	2.37	3.31	37.07	4.1	34	5.14	20.4	1.55	2.50	0.06	3.35	0.44	0.008	0.69	22.0	18.3	0.83	1078		
222	W-222	Pulp	0.11	3.4	6.1	0.004	<10	36	0.15	<0.01	4.47	0.09	24.1	33.7	151	2.13	49.2	5.44	10.86	0.07	0.32	0.02	0.016	0.12	10.3	40.4	3.44	700		
223	W-223	Pulp	0.59	0.4	17.4	0.0484	<10	347	0.35	0.41	2.87	0.4	42.14	4.2	31	1.85	14.6	0.97	1.73	0.05	2.74	0.12	0.007	0.35	22.0	7.2	0.21	543		
224	W-224	Pulp	0.22	2.9	14.9	0.0304	<10	101	0.34	<0.01	6.90	0.1	14.69	38.1	144	1.71	136.7	5.45	7.68	0.07	0.24	0.04	0.011	0.15	6.1	41.2	2.68	886		
225	W-225	Pulp	2.97	1.1	30.1	1.1241	<10	150	0.59	0.55	2.14	0.67	38.86	24.0	51	10.66	58.6	4.92	4.13	0.09	1.27	0.06	0.010	0.94	17.6	23.4	0.92	1946		
226	W-226	Pulp	1.48	1.3	6.6	0.4789	<10	81	0.74	0.12	0.31	0.11	42.7	32.5	54	6.12	37.5	6.31	6.15	0.13	0.94	0.02	0.013	1.19	19.1	34.5	1.22	1089		
227	W-227	Pulp	0.21	0.5	19.4	0.0063	<10	254	0.32	0.58	0.23	0.09	79.06	5.3	28	0.62	29.0	0.33	1.52	0.10	1.25	0.12	<0.005	0.18	37.8	2.8	0.02	53		
228	W-228	Pulp	2.14	0.9	12.4	0.3769	<10	77	0.89	0.69	0.79	0.52	69.26	18.5	45	4.62	76.2	3.69	4.91	0.16	1.89	0.02	0.010	1.00	36.3	50.1	1.33	1128		
229	W-229	Pulp	0.10	0.9	15.7	0.0061	<10	42	0.31	0.05	4.64	0.04	49.61	30.4	26	3.44	90.8	5.37	4.63	0.08	0.45	0.01	0.013	0.27	23.1	7.5	1.59	1066		
230	W-230	Pulp	0.14	1.1	3.1	0.063	<10	14	0.27	0.01	4.18	0.08	20.92	17.5	57	2.62	26.8	4.59	4.65	0.06	0.45	0.01	0.007	0.20	8.9	12.3	1.98	499		
231	W-231	Pulp	0.51	3.5	5.4	0.0326	<10	190	0.46	0.02	0.75	0.18	15.06	36.4	130	9.36	93.9	6.73	12.80	0.22	0.26	0.01	0.012	1.47	6.5	36.5	3.33	1581		
232	W-232	Pulp	0.46	1.8	24.5	0.0677	<10	20	0.45	0.10	3.48	0.08	41.59	28.2	62	2.92	132.5	5.61	8.69	0.10	0.72	0.01	0.021	0.16	18.6	22.8	2.79	814		
233	W-233	Pulp	0.39	2.6	4.8	0.0679	<10	57	0.67	0.02	0.43	0.29	28.11	28.5	134	21.73	68.0	6.39	9.06	0.12	0.52	0.02	0.017	0.47	12.2	22.8	2.45	1813		
234	W-234	Pulp	0.16	2.3	4.7	0.0218	<10	18	0.60	0.04	5.94	0.18	28.94	31.3	188	7.40	127.1	6.85	10.17	0.12	0.37	0.02	0.026	0.21	12.6	26.0	3.43	1090		
235	W-235	Pulp	0.11	3.2	4.1	0.009	<10	25	0.31	0.03	2.65	0.03	26.17	34.2	158	0.73	65.6	6.38	11.64	0.08	0.28	0.02	0.019	0.07	11.2	35.7	2.97	748		
236	W-236	Pulp	1.73	2.9	3.2	0.3767	<10	18	0.35	0.02	2.45	0.46	25.77	26.4	149	4.04	41.6	5.27	9.78	0.08	0.44	0.05	0.011	0.15	11.2	28.7	2.8	575		
237	W-237	Pulp	0.16	2.3	4.8	0.0064	<10	33	0.25	0.04	4.91	0.06	25.78	27.8	70	0.57	68.9	5.16	8.34	0.07	0.32	0.01	0.012	0.08	11.5	30.6	1.74	771		
238	W-238	Pulp	1.93	3.3	7.5	0.3161	<10	92	0.62	0.09	3.02	2.77	31.64	40.0	201	23.60	66.2	6.33	9.80	0.16	0.66	0.57	0.020	1.24	15.0	43.3	3.25	1040		
239	W-239	Pulp	0.23	3.2	4.6	0.0127	<10	98	0.37	0.05	3.28	0.13	41.25	33.3	107	41.86	137.4	6.23	10.83	0.12	0.69	0.03	0.022	0.97	20.1	39.1	2.95	726		
240	W-240	Pulp	0.20	0.3	5.3	0.2003	<10	33	0.26	0.09	3.94	0.08	37.08	21.5	38	1.92	75.3	5.04	1.94	0.07	0.67	0.02	0.009	0.26	17.7	3.8	1.47	674		
241	W-241	Pulp	<0.01	1.5	10.3	0.003	18	128	0.61	0.01	3.59	0.1	63.61	26.3	52	34.43	17.4	5.20	4.72	0.12	1.55	0.33	0.011	1.50	32.3	20.3	2.46	1149		
242	W-242	Pulp																												
243	W-243	Pulp	<0.01	2.0	18.8	0.0021	19	95	0.81	<0.01	2.92	0.06	60.62	27.9	70	77.49	34.9	5.31	7.07	0.15	1.78	0.02	0.015	2.04	30.8	32.4	3.07	1013		
244	W-244	Pulp																												
245	W-245	Pulp	0.01	2.0	10.2	0.0021	19	142	0.66	0.01	3.02	0.09	61.13	26.9	56	53.45	17.3	5.00	5.90	0.16	1.36	0.01	0.013	2.05	30.8	28.1	3.03	1160		
246	W-246	Pulp																												
247	W-247	Pulp	1.46	1.6	42.4	0.2568	25	159	0.82	0.31	2.65	0.85	34.32	34.0	72	17.02	87.8	6.07	6.02	0.15	1.01	0.06	0.056	1.40	17.9	69.3	2.28	1111		
248	W-248	Pulp																												
249	W-249	Pulp	0.05	2.4	3.3	0.0075	<10	21	0.16	0.01	5.63	0.09	28.4	30.1	112	0.99	70.7	4.93	6.93	0.10	0.37	0.02	0.012	0.12	13.0	33.8	2.08	877		
250	W-250	Pulp																												
251	W-251	Pulp	0.07	2.6	5.6	0.0108	<10	23	0.29	0.02	3.31	0.02	34.17	29.9	101	4.17	64.0	5.76	8.66	0.09	0.58	<0.005	0.016	0.25	15.8	32.6	2.29	763		
252	W-252	Pulp																												
253	W-253	Pulp	1.79	1.1	442.2	1.5964	17	37	0.62	0.26	4.35	0.13	55.29	29.6	45	7.91	95.1	6.36	3.18	0.11	1.57	0.10	0.011	1.09	31.6	50.4	1.63	916		
254	W-254	Pulp	0.22	2.6	3.5	0.0413	<10	31	0.30	0.12	2.33	0.11	23.77	27.6	120	4.30	106.2	5.22	7.76	0.08	0.44	0.01	0.012	0.25	11.0	28.3	2.45	576		
255	W-255	Pulp	1.45	0.4	4.9	0.0198	<10	54	0.14	0.06	0.98	0.05	29.22	5.2	76	0.56	15.0	1.17	1.84	0.05	0.22	0.01	0.005	0.09	14.8	7.9	0.33	196		
256	W-256	Pulp	0.07	0.6	8.1	0.0056	<10	172	0.58	0.29	3.24	0.07	80.2	5.2	23	4.02	16.9	0.73	1.80	0.10	1.78	0.02	<0.005	0.51	40.6	12.9	0.38	436		
257	W-257	Pulp	1.61	0.8	9.4	0.0327	<10	56	0.18	0.09	1.73	0.07	36.65	8.0	88	1.28	26.0	2.00	3.01	0.07	0.36	0.02	0.009	0.17	20.0	13.3	0.64	354		
258	W-258	Pulp																												
259	W-259	Pulp	0.88	0.5	6.6	0.0134	<10	64	0.16	0.07	1.23	0.05	29.68	5.6	101	0.64	15.1	1.34	2.14	0.06	0.27	0.01	0.005	0.11	15.0	8.9	0.42	235		

S. No.	Sample ID	Method Analyte Unit MDL Sample Ty	Molybdenum (Mo) ppm 0.05	Sodium (Na) % 0.01	Niobium (Nb) ppm 0.05	Nickel (Ni) ppm 0.2	Phosphorous (P) ppm 10	Lead (Pb) ppm 0.2	Rubidium (Rb) ppm 0.1	Rhenium (Re) ppm 0.001	Sulphur (S) %	Antimony (Sb) ppm 0.05	Scandium (Sc) ppm 0.1	Selenium (Se) ppm 0.2	Tin (Sn) ppm 0.2	Strontium (Sr) ppm 0.2	Tantalum (Ta) ppm 0.01	Tellurium (Te) ppm 0.01	Thorium (Th) ppm 0.2	Titanium (Ti) %	Thallium (Tl) ppm 0.02	Uranium (U) ppm 0.05	Vandium (V) ppm 1	Tungsten (W) ppm 0.05	Yttrium (Y) ppm 0.05	Zinc (Zn) ppm 2	Zirconium (Zr) ppm 0.5	
216	W-216	Pulp	0.97	0.02	<0.05	74.8	773	5.9	9.4	<0.001	0.37	0.71	4.1	<0.2	<0.2	110.1	<0.01	0.17	1.5	0.07	0.2	0.24	73	0.17	8.32	67	17.6	
217	W-217	Pulp	14.72	0.02	0.10	12.5	812	27.7	89.8	<0.001	4.03	2.65	3	0.2	0.4	278.3	<0.01	0.42	3.5	0.088	2.26	4.95	17	7.05	14.17	191	132.5	
218	W-218	Pulp	21.57	0.04	<0.05	36.0	851	40.7	201.3	0.018	4.53	0.37	10.1	7.3	0.3	189.4	<0.01	6.06	1.3	0.119	2.29	0.71	102	0.48	11.73	89	35.0	
219	W-219	Pulp	7.37	0.01	<0.05	153.0	649	4.5	126.6	0.001	3.54	1.89	5.9	0.6	<0.2	8.6	<0.01	0.35	0.3	0.118	2.61	0.51	72	1.08	6.39	200	21.7	
220	W-220	Pulp	5.55	0.02	0.25	26.7	840	4.2	81.5	<0.001	4.84	2.58	5.4	0.2	<0.2	127	0.01	0.04	1.2	0.106	2.51	0.54	54	0.55	7.42	50	25.8	
221	W-221	Pulp	71.03	0.03	0.15	5.0	298	307.2	80.1	0.006	1.24	8.79	0.7	0.9	<0.2	312	<0.01	1.34	4.4	0.021	1.2	8.07	11	0.64	6.95	660	149.4	
222	W-222	Pulp	0.60	0.01	<0.05	101.2	457	3.6	7.2	<0.001	0.02	0.23	5.4	<0.2	<0.2	111.2	<0.01	<0.01	1.4	0.049	0.15	0.22	69	<0.05	8.17	71	14.7	
223	W-223	Pulp	5.00	0.04	0.10	5.1	306	26.0	28.1	0.001	0.78	3.01	0.4	0.4	<0.2	539.1	<0.01	0.63	4.4	0.01	0.45	4.43	4	0.57	5.98	52	125.2	
224	W-224	Pulp	1.00	0.02	<0.05	116.7	473	5.5	7.8	<0.001	0.21	0.31	3.1	0.2	<0.2	144.7	<0.01	0.05	0.8	0.034	0.19	0.18	45	0.06	10.50	77	10.5	
225	W-225	Pulp	22.64	0.04	<0.05	26.2	1090	251.6	125.2	0.002	1.88	0.91	3.4	1.4	<0.2	211.7	<0.01	4.33	2.3	0.098	2.17	1.53	48	0.69	8.94	255	57.4	
226	W-226	Pulp	28.55	0.05	<0.05	39.8	1039	15.5	148.3	0.005	1.38	0.18	7.6	1.4	0.3	18.7	<0.01	2.61	1.6	0.145	1.8	0.51	95	1.05	8.32	117	41.0	
227	W-227	Pulp	4.32	0.02	<0.05	2.9	56	43.0	9.3	<0.001	0.30	1.48	0.2	<0.2	0.2	225.2	<0.01	0.14	9.9	<0.005	0.19	3.76	2	0.60	4.84	29	57.1	
228	W-228	Pulp	76.95	0.03	0.06	29.4	1324	177.4	133.1	0.039	2.15	0.42	2.5	2.1	0.2	217.6	<0.01	3.06	3.7	0.061	1.56	2.96	40	1.58	9.38	177	79.6	
229	W-229	Pulp	1.55	0.02	0.15	34.7	1327	2.6	21.3	<0.001	0.10	1.65	3.5	<0.2	<0.2	107.7	<0.01	0.02	3.2	0.07	0.44	0.44	62	0.26	8.56	59	25.1	
230	W-230	Pulp	4.69	0.03	<0.05	50.0	596	2.0	22.4	0.007	0.28	0.36	2.5	0.2	<0.2	78.3	<0.01	0.35	1	0.029	0.41	0.18	47	0.26	6.76	24	20.1	
231	W-231	Pulp	1.73	0.04	<0.05	66.1	1330	7.9	129.1	<0.001	0.20	0.52	8.8	<0.2	0.4	41.2	<0.01	0.32	1	0.274	1.87	0.51	139	0.36	6.76	458	11.2	
232	W-232	Pulp	5.94	0.02	<0.05	50.1	1009	3.3	15.6	<0.001	0.84	0.43	5.8	0.3	<0.2	70.1	<0.01	0.4	2.1	0.071	0.33	0.32	74	0.39	7.05	61	30.2	
233	W-233	Pulp	0.32	0.02	<0.05	37.8	877	10.0	86.6	<0.001	<0.01	0.70	6.6	<0.2	<0.2	45.1	<0.01	0.45	1.7	0.097	2.19	0.15	114	0.45	10.54	154	20.1	
234	W-234	Pulp	2.16	0.02	<0.05	107.0	676	6.5	26.4	<0.001	0.26	0.18	10.7	0.2	<0.2	147.1	<0.01	0.23	1.1	0.027	0.54	0.22	126	0.10	8.69	77	15.4	
235	W-235	Pulp	0.77	0.02	<0.05	100.2	901	4.3	3.3	<0.001	0.32	0.34	6	<0.2	<0.2	43.7	<0.01	0.1	1.7	0.043	0.07	0.39	86	0.16	6.49	87	12.2	
236	W-236	Pulp	1.63	0.02	<0.05	96.6	706	13.8	18.5	0.004	0.34	0.34	3.3	0.4	<0.2	65.9	<0.01	1.43	1.2	0.014	0.42	0.1	54	0.15	7.88	347	17.2	
237	W-237	Pulp	0.78	0.02	<0.05	56.4	886	3.8	3.5	<0.001	0.35	0.41	3.6	<0.2	<0.2	69.8	<0.01	0.07	1.7	0.042	0.06	0.3	63	0.14	7.64	75	13.1	
238	W-238	Pulp	6.85	0.02	<0.05	151.8	764	22.3	123.9	0.002	1.29	0.30	7.4	1.2	0.3	84	0.01	2.01	1.3	0.136	2.36	0.19	81	0.21	10.19	882	21.9	
239	W-239	Pulp	2.74	0.02	0.06	80.8	878	5.2	87.2	<0.001	0.67	0.41	8.4	0.3	0.4	78.1	<0.01	0.22	2.2	0.146	1.72	0.56	103	0.53	11.83	117	27.1	
240	W-240	Pulp	10.07	0.04	<0.05	38.8	781	4.3	16.6	<0.001	0.47	0.33	4.4	0.3	<0.2	115.8	<0.01	0.47	1.6	0.009	0.32	0.26	60	0.63	5.75	36	28.2	
241	W-241	Pulp	0.08	0.02	0.13	25.7	1243	4.8	146.6	<0.001	<0.01	1.36	6.7	<0.2	<0.2	376.4	<0.01	<0.01	4.8	0.203	2.86	0.98	61	0.79	10.94	82	68.1	
242	W-242	Pulp																										
243	W-243	Pulp	0.10	0.02	0.09	28.2	1209	3.7	239.0	<0.001	0.01	1.16	8.3	<0.2	0.3	354.3	<0.01	0.02	4.7	0.238	5.14	0.89	83	0.26	9.77	88	69.9	
244	W-244	Pulp																										
245	W-245	Pulp	0.07	0.02	0.08	26.6	1153	4.1	191.8	<0.001	0.01	1.68	6.8	<0.2	0.2	520.3	<0.01	0.02	4.6	0.24	3.67	0.89	66	0.34	9.57	80	57.8	
246	W-246	Pulp																										
247	W-247	Pulp	11.67	0.03	0.06	55.1	694	15.2	180.6	0.003	3.05	0.50	8.6	1.9	0.2	77.9	<0.01	3.1	1.5	0.114	3.22	0.53	93	0.46	6.25	247	34.8	
248	W-248	Pulp																										
249	W-249	Pulp	0.61	0.01	<0.05	79.7	735	4.4	5.3	<0.001	0.17	0.36	4.8	<0.2	<0.2	128	<0.01	0.05	1.4	0.056	0.07	0.21	57	0.13	10.82	75	14.2	
250	W-250	Pulp																										
251	W-251	Pulp	1.93	0.02	<0.05	75.1	787	2.9	21.1	<0.001	0.24	0.45	5.6	<0.2	<0.2	51	<0.01	0.11	1.8	0.064	0.46	0.72	78	0.20	8.89	88	21.3	
252	W-252	Pulp																										
253	W-253	Pulp	18.79	0.02	0.07	32.5	694	25.7	86.9	0.003	6.54	3.46	6.2	1.1	<0.2	187.9	<0.01	0.32	2.6	0.076	2.21	1.56	39	0.92	12.83	61	56.4	
254	W-254	Pulp	1.97	0.02	<0.05	86.9	783	4.2	20.5	0.001	0.44	0.18	4.1	<0.2	<0.2	36.5	<0.01	0.34	1.2	0.029	0.54	0.58	62	0.12	8.37	97	15.7	
255	W-255	Pulp	1.65	0.03	1.69	11.8	355	9.1	6.7	<0.001	0.08	0.50	1.7	<0.2	0.4	20.4	<0.01	0.16	2.7	0.065	0.1	0.63	20	4.98	4.34	25	7.2	
256	W-256	Pulp	0.55	0.02	0.16	7.4	1382	31.1	40.4	<0.001	0.34	1.72	1	<0.2	<0.2	579.3	<0.01	0.05	7	0.015	0.63	3.35	5	0.37	10.04	36	84.1	
257	W-257	Pulp	2.13	0.03	1.44	20.7	422	8.1	12.6	<0.001	0.14	0.41	2.7	<0.2	0.3	32.5	<0.01	0.17	3.5	0.081	0.17	0.81	28	8.41	5.40	42	11.3	
258	W-258	Pulp																										
259	W-259	Pulp	1.62	0.04	1.41	13.7	331	7.6	8.1	<0.001	0.09	0.34	2	<0.2	0.3	24.1	<0.01	0.13	3	0.066	0.12	0.65	22	3.06	4.62	30	8.9	

S. No.	Sample ID	Method Analyte Unit MDL Sample Ty	Mo	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
			ppm 0.05	% 0.01	ppm 0.05	ppm 0.2	ppm 10	ppm 0.2	ppm 0.1	ppm 0.001	% 0.01	ppm 0.05	ppm 0.1	ppm 0.05	ppm 0.2	ppm 0.2	ppm 0.2	ppm 0.2	ppm 0.01	ppm 0.01	ppm 0.2	% 0.005	ppm 0.02	ppm 0.05	ppm 1	ppm 0.05	ppm 0.05
260	W-260	Pulp																									
261	W-261	Pulp	0.55	0.01	<0.05	84.8	856	5.3	4.3	<0.001	0.03	0.17	4.9	<0.2	<0.2	72.4	<0.01	0.04	1.6	0.058	0.06	0.25	63	0.09	9.77	98	15.6
262	W-262	Pulp	4.09	0.02	0.20	28.8	985	287.8	113.9	<0.001	2.04	1.77	2.8	1.8	0.2	726.4	<0.01	0.91	11.1	0.049	1.98	7.33	24	0.99	18.85	104	159.9
263	W-263	Pulp	1.71	0.02	0.10	56.4	1099	12.4	48.1	<0.001	1.07	0.41	8.8	<0.2	0.3	36.9	0.01	0.23	2.5	0.121	1	0.96	122	0.26	10.55	163	24.1
264	W-264	Pulp	1.45	0.06	0.05	41.1	741	3.4	6.9	0.001	0.18	0.33	7	<0.2	<0.2	92.3	<0.01	0.06	1.7	0.064	0.11	0.43	86	0.13	7.85	41	20.1
265	W-265	Pulp	5.45	0.03	<0.05	28.9	849	4.0	8.3	<0.001	1.60	0.50	3.2	0.3	<0.2	107.7	<0.01	0.34	1.6	0.024	0.12	0.27	40	4.11	5.67	53	26.2
266	W-266	Pulp	36.14	0.02	<0.05	47.6	969	21.2	277.0	0.028	3.36	0.62	15.3	3.9	0.3	66.8	<0.01	6.54	1.1	0.282	2.77	2.91	215	0.66	15.65	120	34.9
267	W-267	Pulp	3.62	0.02	<0.05	46.5	695	3.1	22.9	<0.001	0.39	0.39	2.3	<0.2	<0.2	97.2	<0.01	0.13	1.6	0.025	0.56	0.26	34	0.31	4.54	44	26.5
268	W-268	Pulp	120.08	0.02	0.08	38.2	1129	109.1	219.8	0.032	7.47	0.91	11.2	3.4	0.3	44.4	<0.01	5.26	1.5	0.119	2.6	4.39	93	0.85	13.83	235	73.1
269	W-269	Pulp	19.78	<0.01	<0.05	71.2	344	3.4	25.2	0.001	2.86	0.85	3.7	0.5	<0.2	239.4	<0.01	0.06	<0.2	0.007	0.41	0.35	38	0.71	6.61	42	12.4
270	W-270	Pulp	89.11	0.01	0.10	57.7	930	53.1	218.0	0.024	4.20	0.70	7	5.8	0.3	311.3	<0.01	6.08	5.2	0.063	2.25	6.79	71	1.50	17.30	186	61.8
271	W-271	Pulp	4.02	0.05	<0.05	38.2	788	9.2	45.3	<0.001	0.44	0.23	7.6	<0.2	0.2	94.5	<0.01	0.15	1.4	0.061	1.05	0.28	95	0.55	5.64	85	26.7
272	W-272	Pulp	136.41	0.01	0.07	39.0	659	1263.5	102.1	0.077	5.39	2.56	5.3	15.6	<0.2	194.6	<0.01	47.51	1.8	0.025	1.28	4.05	19	0.62	11.59	377	61.7
273	W-273	Pulp	2.02	0.02	0.05	118.6	346	21.5	33.2	0.002	1.96	0.70	13	0.5	<0.2	29.1	<0.01	0.08	0.4	0.15	0.75	0.43	130	0.15	6.17	321	17.7
274	W-274	Pulp	18.55	0.03	<0.05	28.8	770	40.0	143.4	0.014	3.30	0.26	6.1	5.3	<0.2	165.8	<0.01	9.23	1.3	0.09	1.64	0.55	69	1.40	9.52	62	45.8
275	W-275	Pulp																									
276	W-276	Pulp	0.34	0.02	<0.05	143.5	411	0.6	32.1	<0.001	0.03	0.13	2.7	<0.2	<0.2	20.9	<0.01	0.01	0.3	0.203	0.18	0.07	65	0.15	3.32	92	3.8
277	W-277	Pulp																									
278	W-278	Pulp	16.72	0.03	0.19	32.3	814	31.9	63.5	0.001	3.38	2.27	5.2	2	<0.2	88.3	<0.01	3.98	1.2	0.062	1.47	0.27	47	0.77	7.84	99	27.9
279	W-279	Pulp																									
280	W-280	Pulp	12.25	0.04	<0.05	50.3	638	46.6	30.0	0.001	3.65	1.13	4.5	0.5	<0.2	135.6	<0.01	0.89	1.2	0.037	0.7	0.27	32	1.00	4.67	110	26.0
281	W-281	Pulp																									
282	W-282	Pulp																									
283	W-283	Pulp	3.58	0.02	<0.05	75.5	637	5.3	4.1	<0.001	1.14	0.26	3.9	0.3	<0.2	83	<0.01	0.52	1.5	0.042	0.06	0.2	46	0.22	8.34	161	15.7
284	W-284	Pulp																									
285	W-285	Pulp																									
286	W-286	Pulp																									
287	W-287	Pulp																									
288	W-288	Pulp																									
289	W-289	Pulp																									
290	W-290	Pulp	2.53	0.02	0.18	26.4	974	8.0	8.4	0.001	0.63	1.23	2.5	0.3	<0.2	203	<0.01	0.06	2.3	0.045	0.14	0.42	24	2.76	9.98	83	35.6
291	W-291	Pulp																									
292	W-292	Pulp																									
293	W-293	Pulp																									
294	W-294	Pulp																									
295	W-295	Pulp	0.85	0.01	<0.05	83.7	636	2.0	3.5	0.001	0.02	0.28	6.6	<0.2	<0.2	103.3	<0.01	0.02	1	0.049	0.06	0.12	77	0.07	8.68	64	11.3
296	W-296	Pulp																									
297	W-297	Pulp	1.43	0.01	0.09	61.2	706	1.6	5.0	<0.001	0.13	1.26	3.5	<0.2	<0.2	48.3	0.02	0.03	0.7	0.149	0.1	0.08	112	0.29	4.51	76	8.0
298	W-298	Pulp																									
299	W-299	Pulp	6.05	0.06	0.07	75.8	1467	21.4	10.5	0.002	3.25	4.85	3.1	0.6	<0.2	174.5	0.01	0.23	2.5	0.022	0.23	1.4	19	0.89	10.27	148	40.6
300	W-300	Pulp																									
301	W-301	Pulp	4.92	0.04	0.33	74.7	849	9.9	69.2	<0.001	1.93	4.35	4.2	<0.2	<0.2	263.4	0.02	0.03	1.6	0.092	1.64	1.58	40	1.16	8.02	90	59.2
302	W-302	Pulp	11.05	0.04	0.15	145.5	531	13.5	228.9	0.025	1.00	1.50	10	1.2	0.3	390.6	0.01	1.42	3.2	0.186	3.87	1.44	77	0.41	5.76	142	67.8
303	W-303	Pulp	17.22	0.01	<0.05	70.9	801	3.0	4.1	0.001	3.94	1.00	5.8	0.7	<0.2	80	<0.01	0.04	1.3	0.029	0.12	0.17	70	0.41	8.23	53	28.8

S. No.	Sample ID	Method Analyte Unit MDL Sample Type	IMS-130																											
			Silver (Ag) ppm 0.01	Aluminum (Al) % 0.01	Arsenic (As) ppm 0.1	Gold (Au) ppm 0.005	Boron (B) ppm 10	Barium (Ba) ppm 10	Beryllium (Be) ppm 0.05	Bismuth (Bi) ppm 0.01	Calcium (Ca) % 0.01	Cadmium (Cd) ppm 0.01	Carlum (Ce) ppm 0.02	Cobalt (Co) ppm 0.1	Chromium (Cr) ppm 1	Cesium (Cs) ppm 0.05	Copper (Cu) ppm 0.2	Iron (Fe) % 0.01	Gallium (Ga) ppm 0.05	Germanium (Ge) ppm 0.05	Hafnium (Hf) ppm 0.02	Mercury (Hg) ppm 0.01	Indium (In) ppm 0.005	Potassium (K) % 0.01	Lanthanum (La) ppm 0.2	Lithium (Li) ppm 0.1	Magnesium (Mg) % 0.01	Manganese (Mn) ppm 5		
QUALITY ASSURANCE / QUALITY CONTROL																														
Pulp Replicates:																														
2	W-002	Pulp	3.39	1.84	19.1	0.808	<10	67	1.12	0.3	0.29	0.10	58.82	28.6	81	21.96	152.5	5.73	10.59	0.21	0.94	0.05	0.031	1.92	33.1	278.1	2.36	224		
2 R	W-002 (Rep)	Pulp-Rep	3.27	1.79	17.7	0.740	12	73	1.15	0.28	0.29	0.10	57.47	27.5	79	21.20	146.4	5.56	10.21	0.22	0.87	0.05	0.025	1.86	32.5	279.2	2.3	218		
50	W-050	Pulp	0.07	1.90	49.4	0.002	<10	28	0.69	0.04	3.88	0.10	24.66	30.9	65	11.38	55.4	7.04	6.69	0.11	0.75	<0.005	0.020	0.84	10.3	10.6	2.1	1128		
50 R	W-050 (Rep)	Pulp-Rep	0.06	1.84	50.2	0.001	<10	27	0.68	0.04	3.81	0.09	24.81	30.3	63	11.48	52.8	6.81	6.57	0.10	0.69	<0.005	0.020	0.80	10.4	10.4	2.05	1104		
88	W-088	Pulp	2.43	2.06	35.6	0.295	<10	117	1.15	0.26	0.41	0.30	67.76	36.0	86	18.76	111.9	5.82	6.97	0.14	0.97	0.11	0.013	1.41	38.3	70.7	1.66	258		
88 R	W-088 (Rep)	Pulp-Rep	2.48	2.01	36.5	0.299	<10	112	1.14	0.25	0.41	0.32	68.33	37.4	85	19.09	110.6	5.74	7.09	0.14	0.96	0.10	0.012	1.39	38.0	72.3	1.64	255		
168	W-168	Pulp	0.15	2.98	40.3	0.032	<10	13	0.23	<0.01	4.47	0.07	16.26	34.4	210	1.10	41.0	6.22	8.67	0.09	0.42	0.02	0.017	0.09	7.2	55.8	3.16	1092		
168 R	W-168 (Rep)	Pulp-Rep	0.18	3.17	43.0	0.048	<10	14	0.26	<0.01	4.68	0.07	17.66	37.3	221	1.19	45.2	6.58	9.46	0.08	0.48	0.02	0.021	0.10	7.7	60.4	3.33	1146		
217	W-217	Pulp	0.78	0.85	83.0	0.171	<10	90	0.36	0.03	3.18	0.85	50.77	12.9	54	5.17	22.8	5.09	4.37	0.08	3.00	0.24	0.017	0.83	23.9	10.1	1.06	1636		
217 R	W-217 (Rep)	Pulp-Rep	0.8	0.83	84.1	0.217	<10	88	0.32	0.03	3.15	0.86	47.67	13.1	52	5.09	23.2	5.03	4.20	0.11	2.99	0.23	0.014	0.81	22.6	9.8	1.05	1631		
313	W-313	Pulp	2.27	1.07	38.8	0.239	15	48	0.42	0.69	0.36	0.70	81.31	28.7	42	6.97	51.1	4.37	4.81	0.13	2.41	0.07	0.014	1.22	46.9	60.6	1.33	1121		
313 R	W-313 (Rep)	Pulp-Rep	2.21	1.10	37.2	0.232	18	55	0.41	0.67	0.37	0.68	78.46	27.8	41	6.94	50.0	4.46	4.67	0.15	2.39	0.08	0.014	1.27	45.1	58.8	1.35	1141		
Certified Reference Material:																														
STD OREAS 601			48.09	0.840	298.3	0.791	<10	186	0.64	21.32	1.07	7.27	43.9	4.50	44.0	1.95	994.4	2.18	5.00	0.17	0.59	0.271	1.717	0.260	21.2	7.80	0.200	440		
True Value STD OREAS 601			49.40	0.826	305.0	0.774	<10	271.4	0.62	20.60	1.07	7.81	44.8	4.70	44.2	1.98	1010.0	2.20	5.17	<0.1	<1	<3	1.680	0.251	21.2	7.95	0.195	450		
% Difference			-2.7	1.7	-2.2	2.2		-93.1	3.2	3.5	0.0	-6.9	-2.0	-4.3	-0.5	-1.5	-1.5	-0.9	-3.3				2.2	3.6	0.0	-1.9	2.6	-2.2		
Tolerance (%)			2.60	0.054	15.0	0.025	IND	NR	0.10	1.50	0.05	0.48	2.4	0.27	7.4	0.15	40.0	0.11	0.28	NR	IND	IND	0.10	0.021	1.50	0.76	0.016	20.0		
Certified Reference Material - 2:																														
STD OREAS 601			49.95	0.850	296.0	0.777	<10	131	0.65	20.51	1.06	7.83	45.8	5.00	47.0	2.08	1027.1	2.20	4.94	0.12	0.65	0.281	1.675	0.260	21.3	8.50	0.200	440		
True Value STD OREAS 601			49.40	0.826	305.0	0.774	<10	271.4	0.62	20.60	1.07	7.81	44.8	4.70	44.2	1.98	1010.0	2.20	5.17	<0.1	<1	<3	1.680	0.251	21.2	7.95	0.195	450		
% Difference			1.1	2.9	-3.0	0.4		-95.2	4.8	-0.4	-0.9	0.3	2.2	6.4	6.3	5.1	1.7	0.0	-4.4				-0.3	3.6	0.5	6.9	2.6	-2.2		
Tolerance (%)			2.60	0.054	15.0	0.025	IND	NR	0.10	1.50	0.05	0.48	2.4	0.27	7.4	0.15	40.0	0.11	0.28	NR	IND	IND	0.10	0.021	1.50	0.76	0.016	20.0		
Certified Reference Material - 3:																														
STD OREAS 601			48.60	0.840	299.1	0.773	<10	137	0.61	20.19	1.09	7.70	44.8	4.80	43.0	1.96	1051.5	2.23	5.16	0.12	0.62	0.283	1.655	0.260	21.2	8.00	0.200	449		
True Value STD OREAS 601			49.40	0.826	305.0	0.774	<10	271.4	0.62	20.60	1.07	7.81	44.8	4.70	44.2	1.98	1010.0	2.20	5.17	<0.1	<1	<3	1.680	0.251	21.2	7.95	0.195	450		
% Difference			-1.6	1.7	-1.9	-0.1		-95.0	-1.6	-2.0	1.9	-1.4	-0.1	2.1	-2.7	-1.0	4.1	1.4	-0.2				-1.5	3.6	0.0	0.6	2.6	-0.2		
Tolerance (%)			2.60	0.054	15.0	0.025	IND	NR	0.10	1.50	0.05	0.48	2.4	0.27	7.4	0.15	40.0	0.11	0.28	NR	IND	IND	0.10	0.021	1.50	0.76	0.016	20.0		
Certified Reference Material - 4:																														
STD OREAS 601			49.29	0.860	313.1	0.755	<10	126	0.62	20.75	1.08	7.80	45.4	4.90	45.0	1.96	1005.9	2.20	4.89	0.13	0.63	0.296	1.665	0.260	21.7	7.50	0.200	483		
True Value STD OREAS 601			49.40	0.826	305.0	0.774	<10	271.4	0.62	20.60	1.07	7.81	44.8	4.70	44.2	1.98	1010.0	2.20	5.17	<0.1	<1	<3	1.680	0.251	21.2	7.95	0.195	450		
% Difference			-0.2	4.1	2.7	-2.5		-95.4	0.0	0.7	0.9	-0.1	1.3	4.3	1.8	-1.0	-0.4	0.0	-5.4				-0.9	3.6	2.4	-5.7	2.6	7.3		
Tolerance (%)			2.60	0.054	15.0	0.025	IND	NR	0.10	1.50	0.05	0.48	2.4	0.27	7.4	0.15	40.0	0.11	0.28	NR	IND	IND	0.10	0.021	1.50	0.76	0.016	20.0		
Method Blank:																														
Method Blank - 1			<0.01	<0.01	<0.1	<0.0005	<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	<0.005	<0.005	<0.01	<0.2	<0.1	<0.01	<5		
Method Blank - 2			<0.01	<0.01	<0.1	<0.0005	<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	<0.005	<0.005	<0.01	<0.2	<0.1	<0.01	<5		
Method Blank - 3			<0.01	<0.01	<0.1	<0.0005	<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	<0.005	<0.005	<0.01	<0.2	<0.1	<0.01	<5		
Method Blank - 4			<0.01	<0.01	<0.1	<0.0005	<10	<10	<0.05	<0.01	<0.01	<0.01	0.0	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.02	<0.005	<0.005	<0.01	<0.2	<0.1	<0.01	<5		
Method Blank - 5			<0.01	<0.01	<0.1	<0.0005	<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	<0.005	<0.005	<0.01	<0.2	<0.1	<0.01	<5		
Method Blank - 6			<0.01	<0.01	<0.1	<0.0005	<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	<0.005	<0.005	<0.01	<0.2	<0.1	<0.01	<5		

NOTES:

Job No: YVR2110789

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 Certified 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).

S. No.	Sample ID	Method Analyte Unit MDL Sample Ty	Molybdenum (Mo) ppm 0.05	Sodium (Na) % 0.01	Niobium (Nb) ppm 0.05	Nickel (Ni) ppm 0.2	Phosphorous (P) ppm 10	Lead (Pb) ppm 0.2	Rubidium (Rb) ppm 0.1	Rhenium (Re) ppm 0.001	Sulphur (S) % 0.01	Antimony (Sb) ppm 0.05	Scandium (Sc) ppm 0.1	Selenium (Se) ppm 0.2	Tin (Sn) ppm 0.2	Strontium (Sr) ppm 0.2	Tantalum (Ta) ppm 0.01	Tellurium (Te) ppm 0.01	Thorium (Th) ppm 0.2	Titanium (Ti) % 0.005	Thallium (Tl) ppm 0.02	Uranium (U) ppm 0.05	Vandium (V) ppm 1	Tungsten (W) ppm 0.05	Yttrium (Y) ppm 0.05	Zinc (Zn) ppm 2	Zirconium (Zr) ppm 0.5
QUALITY ASSURANCE / QUALITY CONTROL																											
Pulp Replicates:																											
2	W-002	Pulp	56.50	0.07	0.07	34.4	1038	23.1	327.2	0.012	4.13	0.90	10.9	3.3	0.3	73.9	0.01	5.46	1.2	0.146	3.45	1.94	115	0.53	8.02	96	37.7
2 R	W-002 (Rep)	Pulp-Rep	54.23	0.06	0.06	33.6	1017	22.4	316.1	0.011	4.00	0.75	10.7	3.4	0.3	72.2	<0.01	5.56	1.2	0.142	3.32	1.88	111	0.50	7.76	94	35.9
50	W-050	Pulp	0.74	0.02	0.09	67.7	1060	3.1	72.6	0.001	0.27	1.53	6.9	0.2	<0.2	87.5	<0.01	0.03	1.0	0.131	1.76	0.24	88	0.54	6.86	82	36.5
50 R	W-050 (Rep)	Pulp-Rep	0.72	0.02	0.08	65.9	1043	3.1	72.7	<0.001	0.27	1.61	6.6	0.2	<0.2	86.7	<0.01	0.03	1.0	0.115	1.76	0.23	86	0.49	6.83	80	33.9
88	W-088	Pulp	130.83	0.04	0.05	79.4	1066	39.2	177.6	0.075	2.72	1.00	5.3	1.7	0.2	84.9	<0.01	3.68	2.7	0.169	2.84	3.1	75	2.45	8.40	151	39.7
88 R	W-088 (Rep)	Pulp-Rep	131.85	0.03	<0.05	80.7	1048	37.7	180.8	0.074	2.67	1.01	5.1	1.7	0.2	84.6	<0.01	3.72	2.7	0.167	2.93	3.16	74	2.53	8.47	145	39.7
168	W-168	Pulp	1.65	0.01	<0.05	53.6	431	3.7	4.4	<0.001	1.31	0.70	9.3	<0.2	<0.2	74.3	<0.01	0.02	0.9	0.007	0.13	0.19	79	0.06	7.66	77	16.2
168 R	W-168 (Rep)	Pulp-Rep	1.73	0.01	<0.05	58.1	437	4.0	4.8	<0.001	1.38	0.82	10	<0.2	<0.2	78.3	<0.01	0.02	1.0	0.007	0.14	0.22	83	0.08	8.24	81	18.4
217	W-217	Pulp	14.72	0.02	0.10	12.5	812	27.7	89.8	<0.001	4.03	2.65	3	0.2	0.4	278.3	<0.01	0.42	3.5	0.088	2.26	4.95	17	7.05	14.17	191	132.5
217 R	W-217 (Rep)	Pulp-Rep	15.00	0.02	0.09	12.9	811	27.6	89.1	<0.001	4.04	2.67	2.9	0.2	0.4	275.6	<0.01	0.44	3.3	0.087	2.24	4.82	16	6.60	13.84	193	131.5
313	W-313	Pulp	131.16	0.01	0.11	32.0	667	148.5	149.3	0.01	3.04	1.82	4.3	1.9	0.5	157.9	0.01	2.77	3.3	0.08	2.74	4.09	49	1.16	8.19	248	99.8
313 R	W-313 (Rep)	Pulp-Rep	131.59	0.01	0.10	31.0	677	152.7	148.3	0.008	3.10	1.89	4.2	1.9	0.4	152.5	0.01	2.97	3.2	0.08	2.76	4.1	49	1.11	8.12	251	96.0
Certified Reference Material - 1:																											
STD OREAS 601			3.45	0.07	0.28	23.5	357	274.1	15.5	<0.001	1.04	20.49	1.70	12.3	2.40	34.4	<0.01	15.68	6.5	0.009	0.72	1.85	9.00	1.01	5.64	1320	26.2
True Value STD OREAS 601			3.80	0.07	<1	24.1	360	283.0	16.0	<1	1.04	21.10	1.83	12.3	2.61	36.2	0.099	15.40	6.7	0.010	0.74	1.94	9.24	1.06	5.87	1293	26.7
% Difference			-9.2	0.0		-2.5	-0.8	-3.1	-3.1		0.0	-2.9	-7.1	0.0	-8.0	-5.0		1.8	-3.0	-12.6	-2.7	-4.6	-2.6	-4.7	-3.9	2.1	-1.9
Tolerance (%)			0.95	IND	IND	3.80	40.0	16.0	1.3	NR	0.06	2.30	0.19	1.1	0.21	2.1	NR	1.80	0.42	IND	0.08	0.19	1.42	0.15	0.40	47.0	2.1
Certified Reference Material - 2:																											
STD OREAS 601			3.77	0.07	0.26	26.1	363	289.1	16.1	<0.001	1.03	20.27	1.80	12.8	2.50	35.9	<0.01	16.32	6.7	0.009	0.75	1.96	10.00	1.02	6.03	1281	26.1
True Value STD OREAS 601			3.80	0.07	<1	24.1	360	283.0	16.0	<1	1.04	21.10	1.83	12.3	2.61	36.2	0.099	15.40	6.7	0.010	0.74	1.94	9.24	1.06	5.87	1293	26.7
% Difference			-0.8	0.0		8.3	0.8	2.2	0.6		-1.0	-3.9	-1.6	4.1	-4.2	-0.8		6.0	0.0	-12.6	1.4	1.0	8.2	-3.8	2.7	-0.9	-2.2
Tolerance (%)			0.95	IND	IND	3.80	40.0	16.0	1.3	NR	0.06	2.30	0.19	1.1	0.21	2.1	NR	1.80	0.42	IND	0.08	0.19	1.42	0.15	0.40	47.0	2.1
Certified Reference Material - 3:																											
STD OREAS 601			3.54	0.07	0.28	22.7	358	285.0	15.5	<0.001	1.05	20.85	1.80	12.2	2.50	35.6	<0.01	15.69	6.3	0.009	0.73	1.87	10.00	1.02	5.79	1329	26.1
True Value STD OREAS 601			3.80	0.07	<1	24.1	360	283.0	16.0	<1	1.04	21.10	1.83	12.3	2.61	36.2	0.099	15.40	6.7	0.010	0.74	1.94	9.24	1.06	5.87	1293	26.7
% Difference			-6.8	0.0		-5.8	-0.6	0.7	-3.1		1.0	-1.2	-1.6	-0.8	-4.2	-1.7		1.9	-6.0	-12.6	-1.4	-3.6	8.2	-3.8	-1.4	2.8	-2.2
Tolerance (%)			0.95	IND	IND	3.80	40.0	16.0	1.3	NR	0.06	2.30	0.19	1.1	0.21	2.1	NR	1.80	0.42	IND	0.08	0.19	1.42	0.15	0.40	47.0	2.1
Certified Reference Material - 4:																											
STD OREAS 601			3.71	0.09	0.21	23.9	360	290.4	15.9	<0.001	1.05	19.82	1.90	12.5	2.50	35.5	<0.01	15.56	6.8	0.010	0.77	1.95	12.00	1.01	5.92	1302	25.4
True Value STD OREAS 601			3.80	0.07	<1	24.1	360	283.0	16.0	<1	1.04	21.10	1.83	12.3	2.61	36.2	0.099	15.40	6.7	0.010	0.74	1.94	9.24	1.06	5.87	1293	26.7
% Difference			-2.4	28.6		-0.8	0.0	2.6	-0.6		1.0	-6.1	3.8	1.6	-4.2	-1.9		1.0	1.5	-2.9	4.1	0.5	29.9	-4.7	0.9	0.7	-4.9
Tolerance (%)			0.95	IND	IND	3.80	40.0	16.0	1.3	NR	0.06	2.30	0.19	1.1	0.21	2.1	NR	1.80	0.42	IND	0.08	0.19	1.42	0.15	0.40	47.0	2.1
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	<1	<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	<1	<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	<1	<0.5
Method Blank - 4			<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	<1	<0.5
Method Blank - 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	<0.2	<0.005	<0.02	<0.05	<1	<0.05	<0.05	<1	<0.5
Method Blank - 6			<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	<1	<0.5

CERTIFICATE OF ANALYSIS - SINGLE ADDITION NAG RESULTS (EGi Method)

PAGE: 5 of 9
 GLOBAL PROJECT NO: 1956 (B8)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

S. No:	Sample ID	Pulp Sample Weight (g)	Vol. of 15% H ₂ O ₂ (mL)	NAG pH (pH Units)	NaOH to pH 4.5 (mL)	NaOH to pH 7.0 (mL)	NaOH Conc. (N)	NAG Acidity pH 4.5 (kg H ₂ SO ₄ /tonne)	NAG Acidity pH 7.0 (kg H ₂ SO ₄ /tonne)	% RPD		
										to pH 4.5	to pH 7.0	Acceptance Criteria
3	W-003	2.5	250	8.18	0.00	0.00	0.1	0.0	0.0			
6	W-006	2.5	250	8.15	0.00	0.00	0.1	0.0	0.0			
9	W-009	2.5	250	2.72	7.15	18.10	0.1	14.0	35.5			
14	W-014	2.5	250	2.17	33.00	38.95	0.1	64.7	76.3			
22	W-022	2.5	250	2.50	12.25	15.55	0.1	24.0	30.5			
28	W-028	2.5	250	7.30	0.00	0.00	0.1	0.0	0.0			
30	W-030	2.5	250	2.34	22.88	26.40	0.1	44.8	51.7			
32	W-032	2.5	250	8.01	0.00	0.00	0.1	0.0	0.0			
33	W-033	2.5	250	8.39	0.00	0.00	0.1	0.0	0.0			
41	W-041	2.5	250	8.52	0.00	0.00	0.1	0.0	0.0			
42	W-042	2.5	250	8.46	0.00	0.00	0.1	0.0	0.0			
46	W-046	2.5	250	3.87	0.50	1.80	0.1	1.0	3.5			
50	W-050	2.5	250	8.54	0.00	0.00	0.1	0.0	0.0			
52	W-052	2.5	250	7.39	0.00	0.00	0.1	0.0	0.0			
53	W-053	2.5	250	2.36	20.90	24.80	0.1	41.0	48.6			
54	W-054	2.5	250	7.95	0.00	0.00	0.1	0.0	0.0			
55	W-055	2.5	250	2.45	15.50	18.40	0.1	30.4	36.1			
59	W-059	2.5	250	8.39	0.00	0.00	0.1	0.0	0.0			
60	W-060	2.5	250	8.15	0.00	0.00	0.1	0.0	0.0			
63	W-063	2.5	250	8.19	0.00	0.00	0.1	0.0	0.0			
65	W-065	2.5	250	7.82	0.00	0.00	0.1	0.0	0.0			
67	W-067	2.5	250	8.44	0.00	0.00	0.1	0.0	0.0			
70	W-070	2.5	250	8.23	0.00	0.00	0.1	0.0	0.0			
72	W-072	2.5	250	2.87	7.20	10.90	0.1	14.1	21.4			
73	W-073	2.5	250	8.21	0.00	0.00	0.1	0.0	0.0			
77	W-077	2.5	250	8.55	0.00	0.00	0.1	0.0	0.0			
79	W-079	2.5	250	8.14	0.00	0.00	0.1	0.0	0.0			
81	W-081	2.5	250	8.24	0.00	0.00	0.1	0.0	0.0			
82	W-082	2.5	250	8.33	0.00	0.00	0.1	0.0	0.0			
86	W-086	2.5	250	8.03	0.00	0.00	0.1	0.0	0.0			
88	W-088	2.5	250	2.40	19.50	24.60	0.1	38.2	48.2			
91	W-091	2.5	250	8.31	0.00	0.00	0.1	0.0	0.0			
102	W-102	2.5	250	8.81	0.00	0.00	0.1	0.0	0.0			
105	W-105	2.5	250	2.81	9.70	14.00	0.1	19.0	27.4			
126	W-126	2.5	250	8.61	0.00	0.00	0.1	0.0	0.0			
137	W-137	2.5	250	7.84	0.00	0.00	0.1	0.0	0.0			
139	W-139	2.5	250	2.71	12.35	18.10	0.1	24.2	35.5			
150	W-150	2.5	250	2.73	9.95	14.90	0.1	19.5	29.2			

151	W-151	2.5	250	8.02	0.00	0.00	0.1	0.0	0.0			
173	W-173	2.5	250	2.46	17.20	23.25	0.1	33.7	45.6			
180	W-180	2.5	250	3.03	2.80	3.90	0.1	5.5	7.6			
196	W-196	2.5	250	8.50	0.00	0.00	0.1	0.0	0.0			
200	W-200	2.5	250	8.75	0.00	0.00	0.1	0.0	0.0			
202	W-202	2.5	250	9.45	0.00	0.00	0.1	0.0	0.0			
206	W-206	2.5	250	8.30	0.00	0.00	0.1	0.0	0.0			
207	W-207	2.5	250	8.58	0.00	0.00	0.1	0.0	0.0			
208	W-208	2.5	250	8.13	0.00	0.00	0.1	0.0	0.0			
211	W-211	2.5	250	8.36	0.00	0.00	0.1	0.0	0.0			
215	W-215	2.5	250	8.62	0.00	0.00	0.1	0.0	0.0			
217	W-217	2.5	250	8.42	0.00	0.00	0.1	0.0	0.0			
221	W-221	2.5	250	8.07	0.00	0.00	0.1	0.0	0.0			
222	W-222	2.5	250	9.59	0.00	0.00	0.1	0.0	0.0			
234	W-234	2.5	250	8.36	0.00	0.00	0.1	0.0	0.0			
241	W-241	2.5	250	8.68	0.00	0.00	0.1	0.0	0.0			
245	W-245	2.5	250	9.09	0.00	0.00	0.1	0.0	0.0			
253	W-253	2.5	250	7.95	0.00	0.00	0.1	0.0	0.0			
261	W-261	2.5	250	8.71	0.00	0.00	0.1	0.0	0.0			
263	W-263	2.5	250	8.24	0.00	0.00	0.1	0.0	0.0			
266	W-266	2.5	250	2.53	16.00	20.90	0.1	31.4	41.0			
267	W-267	2.5	250	8.44	0.00	0.00	0.1	0.0	0.0			
272	W-272	2.5	250	8.11	0.00	0.00	0.1	0.0	0.0			
278	W-278	2.5	250	8.02	0.00	0.00	0.1	0.0	0.0			
299	W-299	2.5	250	8.03	0.00	0.00	0.1	0.0	0.0			
301	W-301	2.5	250	8.36	0.00	0.00	0.1	0.0	0.0			
306	W-306	2.5	250	8.59	0.00	0.00	0.1	0.0	0.0			
312	W-312	2.5	250	8.29	0.00	0.00	0.1	0.0	0.0			
QAQC:												
Replicates:												
41	W-041	2.5	250	8.52	0.00	0.00	0.1	0.0	0.0			
41D	W-041 (D)	2.5	250	8.53	0.00	0.00	0.1	0.0	0.0	0%	0%	10%
63	W-063	2.5	250	8.19	0.00	0.00	0.1	0.0	0.0			
63D	W-063 (D)	2.5	250	8.19	0.00	0.00	0.1	0.0	0.0	0%	0%	10%
86	W-086	2.5	250	8.03	0.00	0.00	0.1	0.0	0.0			
86D	W-086 (D)	2.5	250	8.01	0.00	0.00	0.1	0.0	0.0	0%	0%	10%
173	W-173	2.5	250	2.46	17.20	23.25	0.1	33.7	45.6			
173D	W-173 (D)	2.5	250	2.39	17.80	24.80	0.1	34.9	48.6	3%	6%	10%
217	W-217	2.5	250	8.42	0.00	0.00	0.1	0.0	0.0			
217D	W-217 (D)	2.5	250	8.2	0.00	0.00	0.1	0.0	0.0	0%	0%	10%
267	W-267	2.5	250	8.44	0.00	0.00	0.1	0.0	0.0			
267D	W-267 (D)	2.5	250	8.45	0.00	0.00	0.1	0.0	0.0	0%	0%	10%
Method Blank Analysis:												
Method Blank (15% H ₂ O ₂ Sc		N/A	250	5.21	0.00	8.35	0.1					
GLOBAL SOP NO: ARD-017												

NOTES:

Date of Analysis: Aug 3 - 5, 2021

pH (pH Units) of DI water used to prepare 15% H₂O₂: 5.64

EC (µS/cm) of DI water used to prepare 15% H₂O₂: 0.61

pH (pH Units) of 15% H₂O₂ (buffered with 0.5 N NaOH): 5.55

EC (µS/cm) of 15% H₂O₂ (buffered with 0.5 N NaOH): 8.0

Solid:Liquid ratio used: 1:100; 2.5 g Pulp Sample: 250 mL 15% H₂O₂.

pH measurement of 15% H₂O₂ solution was conducted at room temperature & buffered with 0.5N NaOH solution to ensure a pH between 4 and 7.

NAG pH & method blank pH measurements were taken after digesting with peroxide solution and making up the solution to its original volume of 250 mL with DI water.

On client's request the NAG procedure is repeated using 1 g of pulp sample when the NAG value for pH 4.5 exceeds 25 kg H₂SO₄ per tonne.

ABBREVIATIONS:

R = Replicate (i.e. using a pulp sample from the same bag).

D = Duplicate (i.e. client sample is processed to produce a 2nd pulp bag & analyzed as a duplicate).

RPD = Relative Percent Difference.

Calc. = Calculation

REFERENCE:

Egi - Environmental Geochemistry International; Single Addition Net Acid Generation (NAG) Test Procedure; Miller et al; Revised Dec. 2006; Page 2 to 4.

CERTIFICATE OF ANALYSIS - SINGLE ADDITION NAG EXTRACT RESULTS



PAGE: 6 of 9
 GLOBAL PROJECT NO: 1056 (B8)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springlose
 PROJECT NO: ONS2104
 REPORT VERSION: 3

Parameter	Method	Unit	RDL	Sample ID																	Method Blank		
				9	14	22	30	46	53	55	72	88	105	105 D	139	150	173	180	266				
				W-009	W-014	W-022	W-030	W-046	W-053	W-055	W-072	W-088	W-105	W-105 (Dup)	W-139	W-150	W-173	W-180	W-266				
Weight of pulp sample used	Weighing Scale	g	0.01	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	N/A	
Volume of 15% H ₂ O ₂ used	Graduated Cylinder	mL	0.50	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
On filtered samples (using 0.45 µm filter paper):																							
pH	Meter	pH units	0.01	2.8	2.2	2.5	2.3	3.8	2.4	2.5	2.9	2.4	2.6	2.7	2.6	2.8	2.4	3.3	2.5	5.6			
EC	Meter	mV	1.0	1069	3450	1600	2270	289	2220	1692	866	2210	1283	1226	2570	1115	2000	313	1890	8.6			
Acidity (to pH 8.3)	Titration	mg CaCO ₃ /L	0.5	368.5	780.3	340.0	516.9	58.8	500.6	374.9	224.9	478.6	294.2	275.8	404.6	225.7	462.3	93.7	387.1	1270.0			
Total Alkalinity (to pH 4.5)	Titration	mg CaCO ₃ /L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sulphate	Colourimetry	mg/L	0.5	326	618	262	412	86	498	298	231	447	284	257	1084	260	402	81	373	373			<-0.5
Phosphorus Dissolved	IC	mg/L	0.0050	<0.0050	0.015	0.115	0.007	0.035	0.008	<0.0050	0.009	0.026	0.026	0.026	<0.0050	0.03	0.279	<0.0050	0.017				
Dissolved Metals Analysis by ICP-MS:																							
Dissolved Hardness (CaCO ₃)	ICP-MS	mg/L	0.5	62.2	57.8	31.2	18.8	54.0	105.0	30.3	111.0	67.8	39.2	39.6	828.0	71.2	77.8	28.3	102.0	<0.5			
Aluminum Dissolved	ICP-MS	mg/L	0.001	3.57	5.07	8.36	8.99	1.46	9	7.65	10.2	7.17	7.09	6.4	4.39	6.46	8.39	3.49	5.91	0.005			
Antimony Dissolved	ICP-MS	mg/L	0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	0.0009	0.0009	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0009			
Arsenic Dissolved	ICP-MS	mg/L	0.0002	0.0013	0.0017	0.0011	0.0046	<0.0002	0.0006	0.0009	0.0022	0.0011	0.001	0.0043	0.0018	<0.0002	0.0014	0.0012	<0.0002				
Barium Dissolved	ICP-MS	mg/L	0.0002	0.184	0.071	0.17	0.167	0.0196	0.107	0.196	0.0721	0.126	0.116	0.107	0.0711	0.262	0.137	0.381	0.137	0.0014			
Beryllium Dissolved	ICP-MS	mg/L	0.0001	0.0042	0.0043	0.003	0.0009	0.0015	0.0016	0.0016	0.0019	0.0043	0.0026	0.0024	0.001	0.0028	0.003	0.0018	0.0074	<0.0001			
Bismuth 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	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001			
Boron Dissolved	ICP-MS	mg/L	0.01	0.03	0.06	0.02	<0.01	<0.01	0.01	0.05	0.03	<0.01	0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.16			
Cadmium Dissolved	ICP-MS	mg/L	0.0001	0.0023	0.00213	0.0002	0.00287	0.00094	0.00137	0.00017	0.0122	0.00181	0.00116	0.00109	0.0482	0.00202	0.00529	0.00347	0.00168	0.00004			
Calcium Dissolved	ICP-MS	mg/L	0.05	16.6	16.4	8.4	4.5	14.5	24.4	7.4	39.6	17.5	8.7	9.1	224.0	12.3	24.6	8.9	28.8	0.05			
Chromium Dissolved	ICP-MS	mg/L	0.0005	0.0092	0.0399	0.0050	0.0156	0.0049	0.0096	0.0067	0.0105	0.0157	0.0113	0.0123	0.0106	0.0031	0.0255	0.0103	0.0148	0.003			
Cobalt Dissolved	ICP-MS	mg/L	0.0001	0.305	0.168	0.37	0.109	0.0786	0.155	0.229	0.0075	0.236	0.286	0.286	0.211	0.272	0.131	0.0337	0.279	0.0001			
Copper Dissolved	ICP-MS	mg/L	0.0005	0.547	1.62	0.602	0.565	0.257	0.333	1.38	0.259	0.76	0.448	0.44	0.233	0.952	2.31	0.0796	1.67	0.0006			
Iron Dissolved	ICP-MS	mg/L	0.02	83.7	69.4	4.35	24.7	0.06	23	12.1	3.96	29.7	14.7	14.5	27	5.5	34.6	0.27	19	<0.01			
Lead Dissolved	ICP-MS	mg/L	0.0005	0.0235	0.197	0.0073	0.0103	0.001	0.229	0.0162	1.87	0.171	0.0201	0.0183	3.09	0.0279	0.28	0.0604	0.0533	<0.0005			
Lithium Dissolved	ICP-MS	mg/L	0.0005	0.0564	0.0745	0.0433	0.0075	0.0067	0.0152	0.0230	0.0164	0.0535	0.0517	0.0475	0.0067	0.0908	0.0366	0.0047	0.1910	<0.0005			
Magnesium Dissolved	ICP-MS	mg/L	0.05	5.0	4.1	2.5	1.8	4.3	10.6	2.9	5.9	4.3	4.1	65.2	9.8	4.0	1.5	7.3	7.3	<0.0005			
Manganese Dissolved	ICP-MS	mg/L	0.0002	40.5	0.211	0.0408	0.0867	9.36	3.99	0.115	4.16	0.264	11.6	11.1	14.2	8.06	0.392	0.863	13.3	0.0009			
Mercury Dissolved	ICP-MS	mg/L	0.0005	<0.00001	<0.00001	<0.00001	<0.00001	0.00002	0.00004	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	0.0005	0.0001	0.0008	0.0002	0.0017	0.0352	0.0005	0.0003	0.0101	0.0036	0.0001	0.0001	0.0001	<0.0001	0.0237	0.0198	0.0003	0.0006			
Nickel Dissolved	ICP-MS	mg/L	0.0005	0.116	0.134	0.0847	0.088	0.0444	0.111	0.0867	0.0662	0.134	0.151	0.154	0.133	0.0395	0.0779	0.0281	0.0763	0.0016			
Phosphorus Dissolved	ICP-MS	mg/L	0.05	<0.05	<0.05	0.15	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.23			
Potassium Dissolved	ICP-MS	mg/L	0.05	11.1	8.14	14.3	11.8	2.88	15.2	10.7	10.2	16.5	17.5	15.7	8.83	38	17.2	5.53	16.2	0.15			
Selenium Dissolved	ICP-MS	mg/L	0.0005	0.0244	0.0304	0.0052	0.0126	0.0019	0.0065	0.0105	0.0134	0.0104	0.0035	0.0039	0.0368	0.0116	0.0126	0.0094	0.0195	0.0007			
Silicon Dissolved	ICP-MS	mg/L	0.05	7.4	8.36	8.83	6.46	5.94	7.7	6.77	12	9.24	7.65	6.84	5.36	9.13	6.66	5.29	11.2	<0.05			
Silver Dissolved	ICP-MS	mg/L	0.00008	0.00835	0.0223	0.00443	0.00556	0.00159	0.00498	0.011	0.00097	0.0104	0.00212	0.00199	0.00385	0.00543	0.00748	0.00348	0.0241	0.00097			
Sodium Dissolved	ICP-MS	mg/L	0.02	3.48	6.34	2.75	2.93	3.58	3.58	3	3.27	4.25	4.13	4.11	3.75	4.05	3.55	2.94	3.28	2.76			
Strontium Dissolved	ICP-MS	mg/L	0.0002	0.393	0.44	0.11	0.75	0.172	1.35	0.076	2.92	0.536	0.106	0.101	2.42	0.0706	0.21	1.15	0.418	<0.0002			
Sulphur Dissolved	ICP-MS	mg/L	0.5	122.0	219.0	90.0	133.0	28.6	156.0	96.1	58.5	142.0	88.7	84.6	370.0	90.0	139.0	27.1	133.0	<0.5			
Tellurium Dissolved	ICP-MS	mg/L	0.0002	0.0048	0.0376	0.0038	0.0219	<0.0002	0.0054	0.0103	0.0011	0.0113	0.0007	0.0008	0.0027	0.0052	0.0096	0.001	0.0115	<0.0002			
Thallium Dissolved	ICP-MS	mg/L	0.00005	0.00113	0.00067	0.00287	0.00132	0.00014	0.00141	0.00137	0.00161	0.00279	0.00234	0.00217	0.00107	0.00296	0.00182	0.00043	0.00092	0.00007			
Thorium Dissolved	ICP-MS	mg/L	0.0001	0.0003	0.0031	0.001	0.0122	<0.0001	0.0034	0.0009	0.0096	0.0028	0.0008	0.001	0.0019	0.0002	0.0009	<0.0001	0.0008	<0.0001			
Tin Dissolved	ICP-MS	mg/L	0.0005	<0.0005	<0.0005	<0.0005	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.127			
Titanium Dissolved	ICP-MS	mg/L	0.0005	0.003	0.0054	0.0035	0.0043	0.0024	0.0057	0.0037	0.0437	0.0067	0.0032	0.0031	0.0031	0.0043	0.0058	0.0026	0.0057	0.0161			
Tungsten Dissolved	ICP-MS	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	0.0001	<0.0001	<0.0001	0.0026	<0.0001	0.0035		
Uranium Dissolved	ICP-MS	mg/L	0.00005	0.00422	0.00748	0.00262	0.0251	0.00016	0.00905	0.00252	0.0433	0.0111	0.00429	0.00415	0.00354	0.00268	0.00885	0.00447	0.0102	<0.00005			
Vanadium Dissolved	ICP-MS	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	0.007	<0.001	<0.001	0.006	0.001	<0.001	<0.001	<0.001	<0.001	0.004	0.003	0.001	<0.001			
Zinc Dissolved	ICP-MS	mg/L	0.001	0.784	0.066	0.063	0.040	0.237	0.134	0.108	0.936	0.174	0.204	0.204	15.800	0.275</							

CERTIFICATE OF ANALYSIS - NAG EXTRACT QA/QC RESULTS



PAGE: 7 of 9
 GLOBAL PROJECT NO: 1956 (B8)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

Phosphorous QA/QC

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21H1361											
21H1361_B1H1538-BLK1	Phosphor	<0.0050	mg/L	F	General	FSM 4500-P F	17-Aug-21	0.005	mg/L		
21H1361_B1H1538-BS1	Phosphor	109	%	F	General	FSM 4500-P F	17-Aug-21	1	%	115	85

Dissolved Metals by ICP-MS:

Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Reference Material	Lower	Upper	Method Blank Spike	Lower	Upper
NAG Extract - Dissolved Metals:												
Aluminum Dissolved	2872122		4.39	4.32	1.6%	< 0.001	80%	70%	130%	94%	85%	115%
Antimony Dissolved	2872122		<0.0001	<0.0001	NA	< 0.0001	99%	70%	130%	103%	85%	115%
Arsenic Dissolved	2872122		0.0043	0.0046	6.7%	< 0.0002	102%	70%	130%	94%	85%	115%
Barium Dissolved	2872122		0.0711	0.0723	1.7%	< 0.0002	101%	70%	130%	106%	85%	115%
Beryllium Dissolved	2872122		0.0010	0.0010	0.3%	< 0.0001	96%	70%	130%	101%	85%	115%
Bismuth Dissolved	2872122		<0.0001	<0.0001	NA	< 0.0001				102%	85%	115%
Boron Dissolved	2872122		0.01	0.01	NA	< 0.01	89%	70%	130%	102%	85%	115%
Calcium Dissolved	2872122		224	225	0.2%	< 0.05	99%	70%	130%	103%	85%	115%
Cadmium Dissolved	2872122		0.0482	0.0484	0.5%	< 0.00001	97%	70%	130%	101%	85%	115%
Chromium Dissolved	2872122		0.0106	0.0110	3.6%	< 0.0005	94%	70%	130%	99%	85%	115%
Cobalt Dissolved	2872122		0.211	0.213	1.0%	< 0.0001	114%	70%	130%	112%	85%	115%
Copper Dissolved	2872122		0.233	0.235	1.2%	< 0.0005	97%	70%	130%	99%	85%	115%
Iron Dissolved	2872122		27.0	26.8	0.5%	< 0.01				102%	85%	115%
Lead Dissolved	2872122		3.09	3.08	0.3%	< 0.0005	107%	70%	130%	108%	85%	115%
Lithium Dissolved	2872122		0.0067	0.0070	4.4%	< 0.0005				103%	85%	115%
Magnesium Dissolved	2872122		65.2	65.4	0.3%	< 0.005	95%	70%	130%	93%	85%	115%
Manganese Dissolved	2872122		14.2	14.1	0.7%	< 0.0002	82%	70%	130%	86%	85%	115%
Molybdenum Dissolved	2872122		0.0001	0.0001	NA	< 0.0001				100%	85%	115%
Nickel Dissolved	2872122		0.133	0.134	1.3%	< 0.0005	97%	70%	130%	93%	85%	115%
Potassium Dissolved	2872122		8.83	8.69	1.7%	< 0.05	90%	70%	130%	92%	85%	115%
Phosphorus Dissolved	2872122		<0.05	<0.05	NA	< 0.05	107%	70%	130%	105%	85%	115%
Selenium Dissolved	2872122		0.0368	0.0353	4.2%	< 0.0005	106%	70%	130%	101%	85%	115%
Silicon Dissolved	2872122		5.36	5.35	0.2%	< 0.05				91%	85%	115%
Silver Dissolved	2872122		0.00385	0.00368	4.5%	< 0.00008				101%	85%	115%
Sodium Dissolved	2872122		3.75	3.69	1.6%	< 0.02				98%	85%	115%
Sulphur Dissolved	2872122		370	368	0.5%	< 0.5				106%	85%	115%
Strontium Dissolved	2872122		2.42	2.43	0.4%	< 0.0002	86%	70%	130%	87%	85%	115%
Tellurium Dissolved	2872122		0.0027	0.0025	7.7%	< 0.0002				106%	85%	115%
Thallium Dissolved	2872122		0.00107	0.00111	3.7%	< 0.00005	103%	70%	130%	102%	85%	115%
Thorium Dissolved	2872122		0.0019	0.0017	11.1%	< 0.0001				103%	85%	115%
Titanium Dissolved	2872122		0.0031	0.0030	3.3%	< 0.0005				105%	85%	115%
Tin Dissolved	2872122		0.0009	<0.0005	NA	< 0.0005				101%	85%	115%
Tungsten Dissolved	2872122		0.0001	<0.0001	NA	< 0.0001				101%	85%	115%
Uranium Dissolved	2872122		0.00354	0.00359	1.4%	< 0.00005	106%	70%	130%	106%	85%	115%
Vanadium Dissolved	2872122		<0.001	<0.001	NA	< 0.001	98%	70%	130%	102%	85%	115%
Zinc Dissolved	2872122		15.8	15.7	0.6%	< 0.001	101%	70%	130%	90%	85%	115%
Zirconium Dissolved	2872122		0.0004	0.0003	NA	< 0.0001				93%	85%	115%
Mercury Dissolved	2864069		<0.00001	<0.00001	NA	< 0.00001	107%	70%	130%	96%	80%	120%

NOTES:

Job No: 21V790351
 Greyed data does not belong to this report.
 RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Abbreviations & Descriptions:

Method Blank (Blk): A blank sample that undergoes sample processing identical to that carried out for the test samples.
 Method Blank results are used to assess contamination from the laboratory environment and reagents.

Duplicate (Dup): An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process.
 Duplicates provide a measure of the analytical method's precision (reproducibility).

Blank Spike (BS): A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS).
 Blank spikes provide a measure of the analytical method's accuracy.

Matrix Spike (MS): A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process.
 Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.

Standard Reference Material (SRM): A homogenous material of similar matrix to the samples, certified for the parameter(s) listed.
 Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples.

For all types of QC, specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

EQL = Estimated Quantitation Limits
 PQL = Practical Quantitation Limits
 UCL = Upper Control Limit
 LCL = Lower Control Limit
 BLK = Blank
 BS = Blank Spike
 MS = Matrix Spike
 DUP = Duplicate
 SRM = Standard Reference Materials

CERTIFICATE OF ANALYSIS - MEND-SHAKE FLASK EXTRACTION RESULTS



PAGE: 8a of 9
GLOBAL PROJECT NO: 1956 (B8)
CLIENT: First Mining G
PROJECT NAME: Springpole
PROJECT NO: ONS2104
REPORT VERSION: 3

Parameter	Method	Unit	RDL	3	6	6 R	9	14	22	28	30	32
				Sample ID								
				W-003	W-006	W-006 (Rep)	W-009	W-014	W-022	W-028	W-030	W-032
Weight of dry sample used	Weighing Scale	g	0.01	250	250	N/A	250	250	250	250	250	250
Volume of DI water used	Graduated Cylinder	mL	0.50	750	750	N/A	750	750	750	750	750	750
On filtered samples (using 0.45 µm filter paper):												
pH	Meter	pH units	0.01	8.0	7.3		7.3	7.0	6.8	6.7	6.8	7.4
EC	Meter	mV	1.0	133	117		132	361	172	60	120	145
Acidity (to pH 8.3)	Titration	mg CaCO ₃ /L	0.5	2.3	6.4		6.2	11.5	5.9	4.8	6.1	5.2
Total Alkalinity (to pH 4.5)	Titration	mg CaCO ₃ /L	0.5	23.5	21.5		36.7	68.3	9.7	12.4	9.3	25.5
Sulphate	Colourimetry	mg/L	0.5	39.5	16.3		18.4	55.2	52.0	10.9	26.2	50.3
Phosphorus Dissolved	IC	mg/L	0.0050	0.0075	0.0198		0.0085	0.0184	0.0103	0.0171	0.0083	0.0082
Dissolved Metals Analysis by ICP-MS:												
Dissolved Hardness (CaCO ₃)	ICP-MS	mg/L	0.1	42.6	29.1		50.0	56.9	53.3	20.8	23.2	57.0
Aluminum Dissolved	ICP-MS	mg/L	0.001	0.204	0.175	0.18	0.0612	0.0234	0.359	0.0402	0.0096	0.279
Antimony Dissolved	ICP-MS	mg/L	0.00005	0.0122	0.00417	0.00413	0.00122	0.00293	0.000421	0.00357	0.00405	0.00402
Arsenic Dissolved	ICP-MS	mg/L	0.00005	0.00443	0.0215	0.022	0.00201	0.00945	0.00405	0.00198	0.00591	0.014
Barium Dissolved	ICP-MS	mg/L	0.0001	0.675	0.102	0.101	0.025	0.0241	0.0199	0.251	0.0676	0.00317
Beryllium Dissolved	ICP-MS	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000015	0.000011	0.000021	<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	<0.000010
Boron Dissolved	ICP-MS	mg/L	0.005	<0.0050	<0.0050	0.0037	<0.0050	<0.0050	0.0136	0.0088	<0.0050	0.0066
Cadmium Dissolved	ICP-MS	mg/L	0.000002	0.0000149	0.0000344	0.000032	0.0000118	0.000129	0.0000051	0.0000061	0.0000279	0.0000036
Calcium Dissolved	ICP-MS	mg/L	0.04	15.9	10.3	10.3	16.4	18.2	17.1	7.5	7.3	17.6
Chromium Dissolved	ICP-MS	mg/L	0.0001	<0.00010	0.0001	<0.00010	<0.00010	<0.00010	0.0002	0.0001	<0.00010	<0.00010
Cobalt Dissolved	ICP-MS	mg/L	0.000005	0.0000309	0.00171	0.00168	0.0000602	0.00173	0.00263	0.000188	0.0503	0.000212
Copper Dissolved	ICP-MS	mg/L	0.0001	0.00039	0.00297	0.00297	0.00039	0.0049	0.0164	0.00204	0.0233	0.00198
Iron Dissolved	ICP-MS	mg/L	0.002	0.0029	0.0229	0.0259	0.0065	0.0042	0.0166	0.0348	<0.0020	<0.0020
Lead Dissolved	ICP-MS	mg/L	0.00005	0.00108	<0.000050	<0.000050	<0.000050	0.00134	<0.000050	0.000234	<0.000050	<0.000050
Lithium Dissolved	ICP-MS	mg/L	0.00005	0.0043	0.0010	0.0009	0.0084	0.0162	0.0027	0.0011	0.0017	0.0032
Magnesium Dissolved	ICP-MS	mg/L	0.005	0.7	0.8	0.8	2.2	2.7	2.6	0.5	1.2	3.1
Manganese Dissolved	ICP-MS	mg/L	0.00005	0.00245	0.00449	0.00452	0.0213	0.00117	0.00374	0.00279	0.0277	0.00667
Mercury Dissolved	CVAF	mg/L	0.000005	<0.000005	0.0000173		0.0000065	<0.000005	<0.000005	0.0000066	0.00107	<0.000005
Molybdenum Dissolved	ICP-MS	mg/L	0.00001	0.0873	0.122	0.121	0.0128	0.0197	0.0132	0.00504	0.00904	0.00765
Nickel Dissolved	ICP-MS	mg/L	0.00004	0.00146	0.00435	0.00436	0.00137	0.0144	0.00477	0.00016	0.0506	0.00484
Phosphorus Dissolved	ICP-MS	mg/L	0.01	<0.010	0.014	0.014	<0.010	0.013	<0.010	<0.010	<0.010	<0.010
Potassium Dissolved	ICP-MS	mg/L	0.01	4.8	2.84	2.89	4.13	5.98	2.8	2.56	3.9	7.15
Selenium Dissolved	ICP-MS	mg/L	0.0001	0.00081	0.0032	0.00299	0.00188	0.00371	0.0007	0.00144	0.00127	0.00081
Silicon Dissolved	ICP-MS	mg/L	0.1	0.71	0.64	0.64	1.41	1.89	2.11	0.92	0.37	0.9
Silver Dissolved	ICP-MS	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	0.000018	<0.000010	0.000057	0.000048	0.000013
Sodium Dissolved	ICP-MS	mg/L	0.02	0.962	0.38	0.391	3.97	25.4	2.36	0.532	0.484	1.43
Strontium Dissolved	ICP-MS	mg/L	0.0001	12.5	0.251	0.253	0.875	0.571	0.352	0.333	0.326	0.0657
Sulphur Dissolved	ICP-MS	mg/L	1	11.9	6.0	6.2	7.1	17.1	17.3	4.8	8.0	17.0
Tellurium Dissolved	ICP-MS	mg/L	0.00005	0.000498	0.000429	0.000356	0.000201	0.00221	<0.000050	0.000324	0.000226	<0.000050
Thallium Dissolved	ICP-MS	mg/L	0.000004	0.0000567	0.000272	0.000268	0.00002	0.0000345	0.0000587	0.000026	0.000418	0.0000661
Thorium Dissolved	ICP-MS	mg/L	0.00001	<0.000010	<0.000010	0.000011	<0.000010	<0.000010	0.00007	0.000108	<0.000010	<0.000010
Tin Dissolved	ICP-MS	mg/L	0.00005	0.000059	0.000079	0.000081	<0.000050	0.000091	0.000082	<0.000050	<0.000050	<0.000050
Titanium Dissolved	ICP-MS	mg/L	0.0002	<0.00020	0.00063	<0.00020	<0.00020	<0.00020	0.00112	0.00054	<0.00020	<0.00020
Tungsten Dissolved	ICP-MS	mg/L	0.0002	0.00139	0.00253	0.00248	0.00094	0.023	0.00151	0.00596	0.00073	0.00109
Uranium Dissolved	ICP-MS	mg/L	0.000001	0.00187	0.00288	0.00283	0.00109	0.0019	0.0000554	0.000091	0.000912	0.000374
Vanadium Dissolved	ICP-MS	mg/L	0.0002	0.00064	0.00207	0.00198	0.00054	0.00046	0.00091	0.00036	0.00088	0.00098
Zinc Dissolved	ICP-MS	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	0.002	0.007	<0.0010
Zirconium Dissolved	ICP-MS	mg/L	0.00002	0.0001	0.0004	0.0004	0.0002	0.0011	0.0057	0.0005	0.0000	0.0000
Ion Balance:												
Major Anions	Calc.	meq/L		1.29	0.77	0.77	1.12	2.52	1.28	0.48	0.73	1.56
Major Cations	Calc.	meq/L		1.33	0.70	0.70	1.31	2.41	1.29	0.52	0.60	1.41
Difference	Calc.	meq/L		0.04	-0.07	-0.07	0.19	-0.11	0.01	0.04	-0.13	-0.15
Balance (%)	Calc.	%		1.5%	-4.9%	-4.6%	7.8%	-2.2%	0.4%	4.4%	-9.8%	-4.9%
<i>Shake Flask Extract ID:</i>				21G3912-01	21G3912-02	21G3912-02	21G3912-03	21G3912-04	21G3912-05	21H0858-01	21G3912-06	21G3912-07

NOTES:

Job No: 21G3912; 21G3906; 21H0858; 21H1142; 21H1362; 21H1755
Date of Analysis (24 h): July 27/28, 2021; July 28/29, 2021; August 5/6, 2021; August 9/10, 2021; August 11/12, 2021; August 12/13, 2021
 pH of DI water used (pH Units): 5.72; 5.64; 5.46; 5.08; 5.39; 5.41
 EC of DI water used (µS/cm): 0.72; 0.64; 0.39; 0.77; 0.70; 0.82

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 second split of the original client sample received).
 Calc. = Calculation
 EC = Electrical Conductivity
 IC = Ion Chromatography
 N/A = Not Applicable.
 mg/L = Milligrams per Litre

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; L: S; 750 mL DI H₂O; 250 g of homogenized as received material.

CERTIFICATE OF ANALYSIS - MEND-SHAKE FLASK EXTRACTION RESULTS

old Corp.

33	35	41	42	46	50	52	53	54	55	59	60	60D	63	65
Sample ID												Sample ID		
W-033	W-035	W-041	W-042	W-046	W-050	W-052	W-053	W-054	W-055	W-059	W-060	W-060 (Dup)	W-063	W-065
250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
8.0	6.8	8.3	7.9	7.3	8.1	7.6	7.3	8.0	7.1	7.9	7.6	7.5	8.0	7.4
49	80	86	65	74	86	160	155	134	138	99	150	137	80	156
2.1	6.2	1.1	3.5	6.2	2.2	5.3	6.0	3.1	6.4	3.7	5.1	4.4	3.8	5.9
30.7	7.4	32.1	36.4	34.9	43.6	38.6	21.7	40.7	25.1	36.1	33.7	32.7	36.6	28.1
<0.5	14.4	1.0	<0.5	1.0	<0.5	41.0	45.3	27.4	30.1	10.9	29.7	31.6	6.2	40.6
0.0116	0.0082	0.0087	0.0085	0.0171	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0111	<0.0050	<0.0050
19.8	15.4	16.0	26.1	19.8	28.9	60.8	49.8	48.3	57.0	40.3	52.2	52.7	32.7	60.4
0.556	0.0357	0.32	0.417	0.221	0.439	0.177	0.188	0.268	0.0964	0.435	0.24	0.199	0.511	0.136
0.00167	0.00764	0.00239	0.0145	0.000369	0.00634	0.0131	0.00269	0.0128	0.00222	0.026	0.00401	0.00397	0.0201	0.00396
0.00154	0.00332	0.00819	0.000339	0.000801	0.00777	0.00214	0.00279	0.00198	0.00438	0.0144	0.00505	0.00505	0.00396	0.00291
0.00731	0.153	0.02	0.00114	0.00115	0.0042	0.00775	0.12	0.0245	0.244	0.00202	0.00226	0.00254	0.00113	0.00938
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
0.009	<0.0050	<0.0050	0.0076	<0.0050	0.0059	0.005	0.0057	<0.0050	0.0077	<0.0050	0.006	0.0062	<0.0050	<0.0050
<0.0000020	0.0000426	0.0000116	<0.0000020	0.0000032	0.0000068	0.0000039	0.0000287	0.0000037	0.000014	<0.0000020	0.0000027	0.0000024	<0.0000020	0.0000068
6.9	4.7	4.4	7.3	6.6	7.7	15.7	13.3	13.7	17.3	13.7	13.1	13.8	11.8	14.9
0.0002	0.0001	<0.00010	<0.00010	0.0001	<0.00010	0.0001	0.0001	<0.00010	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
0.0000098	0.00456	0.0000399	0.0000864	0.00047	0.00012	0.000178	0.000692	0.0000529	0.00225	0.000892	0.000168	0.000209	0.000211	0.000628
0.00017	0.00529	0.00019	0.0005	0.0444	0.00034	0.00029	0.00402	0.00027	0.0086	0.00027	<0.00010	0.00052	0.00065	0.00084
<0.0020	0.0036	0.0029	<0.0020	0.021	0.0172	0.0042	0.0333	0.0023	0.0242	0.0045	0.0076	0.0028	0.004	0.0049
<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.00162	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
0.0002	0.0011	0.0021	0.0009	0.0008	0.0013	0.0045	0.0041	0.0022	0.0033	0.0005	0.0023	0.0026	0.0006	0.0030
0.6	0.9	1.2	1.9	0.8	2.4	5.2	4.0	3.4	3.3	1.5	4.7	4.4	0.8	5.6
0.00211	0.0214	0.00165	0.00129	0.024	0.00826	0.0801	0.214	0.031	0.0109	0.0202	0.0373	0.0402	0.0139	0.0821
<0.000005	0.0000245	<0.000005	<0.000005	0.0000569	<0.000005	<0.000005	0.0000091	<0.000005	0.000185	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005
0.000291	0.0102	0.0895	0.000247	0.00208	0.00182	0.00194	0.00602	0.00489	0.0216	0.000363	0.0116	0.0138	0.000275	0.0236
0.000914	0.0148	0.000117	0.00374	0.00422	0.00199	0.0052	0.00972	0.00223	0.00677	0.0179	0.0016	0.00167	0.00948	0.00883
0.011	<0.010	<0.010	<0.010	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2.93	2.65	7.44	3.09	3.05	8.89	8.78	10.2	8.86	3.87	3.33	10.2	10.7	2.98	6.08
0.00022	0.00031	0.0002	<0.00010	0.00033	0.00019	0.0004	0.00101	0.00093	0.00155	0.00012	0.00052	0.00047	0.00019	0.00035
1.25	0.51	1.12	0.68	1.36	0.96	0.76	1.2	0.87	1.49	0.74	0.82	0.81	0.73	0.64
<0.000010	0.000128	<0.000010	<0.000010	<0.000010	<0.000010	0.000016	0.000042	0.000013	0.000023	<0.000010	<0.000010	<0.000010	<0.000010	0.000016
1.9	0.327	1.33	1.24	3.33	1.42	1.48	1.71	1.24	1.18	1.1	1.51	1.51	1.07	1.6
0.0495	0.228	0.0502	0.0333	0.146	0.0658	0.128	1.51	0.191	0.387	0.136	0.107	0.122	0.0777	0.0742
<1.00	4.6	<1.00	<1.00	1.1	<1.00	17.1	15.8	11.8	11.3	5.0	15.4	13.9	2.3	17.3
0.000083	<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
0.0000104	0.000075	0.0000555	0.0000296	0.0000256	0.0000602	0.0000507	0.000117	0.0000458	0.00005	0.0000319	0.0000583	0.0000615	0.0000476	0.0000692
<0.000010	0.000028	<0.000010	<0.000010	<0.000010	0.000026	<0.000010	0.000021	<0.000010	0.000082	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
<0.000050	0.000062	<0.000050	<0.000050	0.000051	<0.000050	<0.000050	<0.000050	<0.000050	0.000061	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
<0.00020	<0.00020	0.00024	<0.00020	0.00024	<0.00020	<0.00020	0.0009	<0.00020	0.00318	<0.00020	0.00028	<0.00020	<0.00020	<0.00020
0.00045	0.0023	<0.0002	0.00038	0.00104	0.001	0.0017	0.00086	0.00182	0.0195	0.00111	0.00062	0.00055	0.00117	0.0005
0.0000033	0.00078	0.0000238	0.0000035	0.0000327	0.000032	0.000103	0.000596	0.000655	0.000334	0.0000169	0.0000524	0.00004	0.0000088	0.0000541
0.00118	0.00161	0.00266	0.00047	0.00045	0.00069	<0.00020	<0.00020	0.00023	0.00056	0.00065	0.00029	0.00042	0.00077	<0.00020
<0.0010	0.008	<0.0010	<0.0010	0.001	0.001	<0.0010	0.001	<0.0010	0.011	<0.0010	<0.0010	<0.0010	<0.0010	0.001
<0.000020	0.0007	0.0002	<0.000020	0.0003	0.0000	<0.000020	0.0007	0.0000	0.0047	0.0000	0.0004	0.0002	<0.000020	<0.000020
0.61	0.45	0.66	0.73	0.72	0.87	1.63	1.38	1.39	1.13	0.95	1.29	1.31	0.86	1.41
0.62	0.40	0.60	0.70	0.65	0.92	1.53	1.40	1.28	1.31	0.99	1.40	1.42	0.84	1.45
0.00	-0.05	-0.06	-0.03	-0.07	0.04	-0.10	0.02	-0.10	0.18	0.04	0.11	0.11	-0.02	0.04
0.1%	-5.3%	-4.6%	-1.8%	-5.2%	2.5%	-3.1%	0.7%	-3.9%	7.4%	2.1%	4.0%	3.9%	-1.3%	1.6%
21H0858-02	21G3912-08	21G3912-09	21G3912-10	21G3912-11	21G3906-01	21G3906-02	21G3906-03	21G3906-04	21G3906-05	21G3906-06	21G3906-07	21H0858-03	21G3906-08	21G3906-09

PAGE: 8b of 9
 GLOBAL PROJECT NO: 1956 (B8)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

67	70	70 R	72	73	77	79	79 R	81	82	82D	86	88	88 R	91
Sample ID														
W-067	W-070	W-070 (Rep)	W-072	W-073	W-077	W-079	W-079 (Rep)	W-081	W-082	W-082 (D)	W-086	W-088	W-088 (Rep)	W-091
250	250	N/A	250	250	250	250	N/A	250	250	250	250	250	N/A	250
750	750	N/A	750	750	750	750	N/A	750	750	750	750	750	N/A	750
8.0	8.4		7.0	7.7	7.9	7.8		7.9	7.8	7.7	7.7	6.8		7.3
98	89		147	150	94	102		76	75	75	110	164		85
3.7	0.0		5.4	3.4	3.3	3.7		3.3	3.6	3.8	3.1	15.5		14.7
47.2	36.3		11.2	37.5	48.0	47.6		40.5	36.7	36.1	33.4	39.3		43.5
4.9	12.2		55.5	31.7	4.9	8.4		4.3	4.9	5.4	20.9	30.9		7.3
<0.0050	<0.0050		0.0126	0.0096	0.0102	0.0107		0.0104	0.0099	0.0102	0.0097	0.0113		0.0135
43.6	24.9		53.0	57.2	37.2	38.5		26.2	27.0	28.4	38.3	45.7		29.3
0.274	0.482	0.497	0.0334	0.166	0.317	0.366	0.365	0.593	0.309	0.302	0.301	0.0835	0.0835	0.319
0.0326	0.0191	0.0193	0.00185	0.00095	0.00987	0.00271	0.00265	0.0144	0.000703	0.000665	0.00126	0.00119	0.00117	0.00196
0.000925	0.0233	0.0242	0.00346	0.000529	0.0129	0.018	0.0177	0.0053	0.00229	0.00204	0.00434	0.00458	0.00459	0.0502
0.00752	0.0215	0.0216	0.13	0.0109	0.00173	0.00322	0.00327	0.00119	0.00908	0.00976	0.14	0.0142	0.0144	0.00331
<0.000010	<0.000010	<0.000010	0.00025	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000044	0.000051	<0.000010
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000013	0.000011	<0.000010
0.0069	<0.0050	0.0046	<0.0050	<0.0050	0.0072	<0.0050	0.0047	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0029	<0.0050
<0.0000020	<0.0000020	<0.0000020	0.000636	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000066	0.0000384	0.0000352	<0.0000020
12.6	8.5	8.3	16.6	14.6	10.2	11.0	11.0	7.3	8.5	9.1	12.8	15.7	15.1	9.7
<0.00010	<0.00010	0.0001	<0.00010	0.0015	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	0.0006	0.0006	0.0002
0.000341	0.000183	0.000196	0.0643	0.00014	0.000284	0.000579	0.000565	0.000182	0.000751	0.000965	0.000207	0.00237	0.00234	0.0000605
0.00221	0.00075	0.0008	0.00217	0.00061	0.00056	0.00087	0.00085	0.00069	0.00645	0.0061	0.00393	0.0388	0.0381	0.00097
0.0064	0.0039	0.0044	<0.0020	0.0117	<0.0020	0.0026	0.0033	0.0127	0.0026	0.0054	0.0093	0.196	0.195	0.0024
<0.000050	<0.000050	<0.000050	0.0116	<0.000050	0.000242	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000075	0.00227	0.00222	<0.000050
0.0020	0.0038	0.0038	0.0096	0.0027	0.0011	0.0024	0.0024	0.0017	0.0010	0.0010	0.0048	0.0027	0.0028	0.0008
2.9	0.9	0.9	2.8	5.0	2.9	2.7	2.7	2.0	1.4	1.4	1.6	1.6	1.6	1.2
0.0109	0.0127	0.0129	0.872	0.0374	0.0123	0.0372	0.0366	0.0107	0.0121	0.0168	0.0212	0.0191	0.0191	0.0121
<0.000005	<0.000005		<0.000005	<0.000005	<0.000005	<0.000005		<0.000005	<0.000005	<0.000005	<0.000005	0.0000146	0.0000141	<0.000005
0.00682	0.00373	0.00379	0.00131	0.00111	0.0029	0.00427	0.00413	0.000385	0.00169	0.00175	0.0252	0.00404	0.00398	0.0023
0.0131	0.00532	0.00544	0.123	0.00346	0.00439	0.00753	0.00744	0.00183	0.0043	0.00505	0.00401	0.0177	0.018	0.00565
<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2.53	9.12	9.37	9.39	8.86	8.94	10.7	10.6	8.78	6.5	5.48	10.3	6.05	6.13	5.4
0.00031	0.00061	0.00057	0.00169	0.00028	0.00013	0.00013	0.0001	<0.00010	<0.00010	<0.00010	0.00577	0.00158	0.00146	0.00024
0.82	1.39	1.44	0.73	0.66	0.8	1	0.86	1.67	1.2	1.04	1.56	1.18	1.3	0.69
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000043	0.000039	<0.000010
1.87	2.29	2.35	1.25	1.49	1.25	1.4	1.38	2.2	2.14	2.2	1.52	11.8	11.9	1.74
0.0212	0.148	0.151	3.11	0.132	0.0601	0.041	0.0403	0.0507	0.0848	0.0953	0.429	0.474	0.476	0.0673
1.0	6.0	5.1	18.3	14.8	2.0	4.7	4.4	1.6	1.8	2.1	9.4	15.3	17.4	2.5
<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000052	<0.000050	0.000055	<0.000050	<0.000050	<0.000050	0.000086	0.000453	0.000448	0.000054
0.0000409	0.0000559	0.0000553	0.000547	0.000553	0.00065	0.000574	0.000568	0.000324	0.000386	0.000324	0.000588	0.000527	0.000527	0.0000309
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000017	0.000016	<0.000010
0.000057	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000094	0.000096	0.000235
<0.00020	<0.00020	0.00023	<0.00020	<0.00020	0.00024	0.00024	<0.00020	0.00054	<0.00020	0.00043	0.00026	0.00026	0.00027	<0.00020
0.00383	0.00058	0.00058	0.00039	0.00032	0.00035	0.001	0.00098	0.00149	0.00045	0.00038	0.00182	0.0158	0.0159	0.00037
0.0000436	0.000618	0.000612	0.00134	0.0000441	0.0000419	0.0000205	0.0000196	0.000162	0.000289	0.000335	0.0003	0.00214	0.00216	0.0000143
0.00022	0.00255	0.00264	<0.00020	<0.00020	0.00028	0.00027	0.00025	0.00198	0.00122	0.00124	0.00198	0.00053	0.00058	0.00079
<0.0010	<0.0010	<0.0010	0.052	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.003	0.003	<0.0010
0.0000	0.0000	0.0000	0.0001	<0.000020	<0.000020	<0.000020	<0.000020	0.0001	0.0000	0.0000	0.0001	0.0045	0.0043	0.0001
1.05	0.98	0.98	1.38	1.41	1.06	1.13	1.13	0.90	0.84	0.83	1.10	1.43	1.43	1.02
1.05	0.89	0.89	1.46	1.46	1.07	1.15	1.14	0.91	0.84	0.84	1.14	1.61	1.59	0.84
0.00	-0.09	-0.09	0.08	0.05	0.00	0.02	0.02	0.01	0.00	0.01	0.04	0.18	0.16	-0.18
0.1%	-4.9%	-4.8%	2.8%	1.6%	0.2%	1.0%	0.7%	0.7%	-0.1%	0.5%	1.8%	5.9%	5.3%	-9.9%
21G3906-10	21G3906-11	21G3906-11	21H0858-04	21H0858-05	21H0858-06	21H0858-07	21H0858-07	21H0858-08	21H0858-09	21H0858-10	21H0858-11	21H1142-01	21H1142-01	21H1142-02

ASK EXTRACTION RESULTS

CERTIFICATE OF

PAGE: 8c of 9
 GLOBAL PROJECT NO: 1956 (B8)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

102	105	112	126	127	137	139	139D	150	151	171	173	176	179	196
Sample ID														
W-102	W-105	W-112	W-126	W-127	W-137	W-139	W-139 (D)	W-150	W-151	W-171	W-173	W-176	W-179	W-196
250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
7.4	7.1	7.3	7.2	6.8	7.2	7.2	7.2	7.2	7.2	7.0	7.0	7.2	7.1	7.3
90	118	77	138	151	104	165	162	95	83	147	154	55	55	105
14.0	15.6	14.6	16.9	21.3	15.1	16.5	15.3	13.6	14.6	16.8	18.5	12.9	12.9	14.5
41.9	24.2	42.2	36.3	11.4	38.8	40.9	41.4	23.5	44.3	18.0	26.4	22.9	21.3	44.3
11.7	35.1	5.5	45.0	64.1	17.7	47.6	43.7	22.5	6.6	45.7	34.7	6.8	10.1	13.8
0.0066	0.0093	0.0073	0.0063	0.0060	0.0053	<0.0050	<0.0050	0.0099	0.0115	<0.0050	0.0641	0.0273	0.0072	0.0074
28.4	35.0	29.3	58.0	48.8	33.1	65.4	64.6	26.0	33.8	45.8	55.6	15.6	17.3	39.6
0.35	0.0631	0.286	0.114	0.0881	0.258	0.102	0.107	0.0848	0.102	0.0235	0.0755	0.0622	0.0617	0.307
0.0105	0.00103	0.000771	0.00106	0.00232	0.00225	0.00414	0.00437	0.000593	0.000796	0.000452	0.00194	0.000954	0.00102	0.00269
0.0193	0.00246	0.000788	0.000895	0.00583	0.00335	0.00112	0.00127	0.000658	0.00057	0.000271	0.00254	0.00367	0.00091	0.0109
0.18	0.00903	0.00621	0.0205	0.101	0.00642	0.0338	0.0338	0.0316	0.24	0.0182	0.0582	0.225	0.00648	0.0459
<0.000010	<0.000010	<0.000010	<0.000010	0.000699	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000071	0.00001	<0.000010	<0.000010
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000121	0.000048	<0.000010	<0.000010
<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0057	0.0061	<0.0050	<0.0050
<0.0000020	0.0000251	<0.0000020	0.0000076	0.0163	0.000003	0.0000035	0.0000027	0.0000316	0.0000032	0.000275	0.000605	0.000153	0.0000328	<0.0000020
9.5	12.5	7.9	15.8	14.5	9.1	18.0	18.0	7.4	10.0	10.5	16.1	3.9	4.2	12.1
<0.00010	0.0003	0.0002	<0.00010	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	0.0001	0.0008	0.0002	0.0001	<0.00010
0.000196	0.00469	0.000334	0.00101	0.236	0.0000392	0.000132	0.000179	0.000539	0.000312	0.00275	0.0109	0.00149	0.000935	0.0000679
0.00133	0.024	0.00165	0.00394	0.0884	0.00045	0.00018	0.00022	0.00695	0.0125	0.00458	0.0654	0.026	0.0234	0.00053
0.0033	0.0492	0.0124	0.0042	0.0625	0.0027	<0.0020	<0.0020	0.0501	0.0493	0.0131	0.179	0.0255	0.0158	0.0034
<0.000050	0.000222	<0.000050	<0.000050	0.000357	<0.000050	0.000728	0.000798	0.000648	0.000052	0.00013	0.0113	0.00174	0.000061	<0.000050
0.0034	0.0043	0.0007	0.0011	0.0080	0.0030	0.0021	0.0020	0.0050	0.0006	0.0108	0.0115	0.0008	0.0021	0.0021
1.1	0.9	2.3	4.5	3.1	2.5	4.9	4.8	1.8	2.1	4.8	3.7	1.4	1.7	2.3
0.00762	0.109	0.0201	0.167	0.25	0.0176	0.104	0.131	0.112	0.0187	1.85	0.27	0.015	0.0504	0.0255
<0.000005	<0.000005	<0.000005	<0.000005	0.0000214	<0.000005	<0.000005	<0.000005	0.0000105	0.0000155	<0.000005	0.0000122	<0.000005	<0.000005	<0.000005
0.000176	0.00325	0.000265	0.000504	0.00171	0.00254	0.00836	0.00822	0.00104	0.000759	0.00184	0.0133	0.00397	0.000454	0.00299
0.00105	0.0152	0.00154	0.0122	0.418	0.00186	0.0015	0.00224	0.0031	0.0034	0.0131	0.0226	0.00648	0.00511	0.00188
<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	0.011	<0.010	0.087	0.035	<0.010	<0.010
8.12	7.05	4.61	5.06	9.46	8.64	8.2	7.46	7.83	4.65	11.3	10.4	5.27	3.16	5.9
<0.00010	0.00029	<0.00010	0.00012	0.00062	0.00012	0.00418	0.00452	0.00577	0.00102	0.0036	0.00447	0.00431	0.00066	0.00017
1.09	0.88	0.95	0.67	0.65	0.86	0.57	0.52	0.91	1.58	1.13	0.76	0.72	0.91	1.01
<0.000010	0.000035	<0.000010	<0.000010	0.000119	<0.000010	<0.000010	<0.000010	0.000015	0.000026	0.000023	0.000046	0.000098	0.000012	<0.000010
0.807	4.1	1.67	1.3	0.359	1.79	1.41	1.38	2.43	1.85	2.32	1.75	0.898	2.39	2.58
5.12	0.324	0.0838	0.221	1.22	0.0617	0.315	0.296	0.154	0.196	0.159	0.379	0.165	0.0459	0.362
5.1	14.5	1.5	14.6	23.2	10.8	26.3	26.2	11.7	2.9	22.6	18.5	3.6	4.6	9.3
0.00007	<0.000050	<0.000050	<0.000050	0.000792	<0.000050	0.000065	<0.000050	<0.000050	<0.000050	0.000063	0.000854	0.000336	<0.000050	<0.000050
0.0000442	0.0000456	0.00002	0.0000552	0.000288	0.0000493	0.0000381	0.0000388	0.0000439	0.0000214	0.000107	0.0001	0.0000277	0.0000192	0.0000379
<0.000010	0.000023	<0.000010	<0.000010	0.00002	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000054	0.000037	0.000017	<0.000010
0.000062	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000221	<0.000050	0.000056	<0.000050	<0.000050
<0.00020	0.00133	0.00065	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00157	0.00049	0.00036	0.00189	<0.00020	<0.00020	<0.00020
<0.0002	0.00189	0.0005	0.00029	0.0008	0.00103	0.00031	0.0003	0.00032	0.00346	<0.0002	0.00121	0.0953	0.00217	0.0003
0.000527	0.000278	0.000124	0.000312	0.0129	0.0000476	0.000159	0.000162	0.000079	0.000132	0.0000525	0.0019	0.00072	0.0000323	0.000727
0.00034	0.00048	0.00023	<0.00020	<0.00020	0.00051	<0.00020	<0.00020	0.001	0.00035	<0.00020	0.00193	<0.00020	0.00029	0.00063
<0.0010	0.002	<0.0010	<0.0010	1.900	<0.0010	0.001	0.002	<0.0010	<0.0010	0.004	0.115	0.005	<0.0010	<0.0010
0.0001	0.0016	0.0003	0.0001	0.0023	0.0001	<0.000020	<0.000020	0.0004	0.0012	0.0004	0.0094	0.0055	0.0006	0.0001
1.08	1.22	0.96	1.66	1.56	1.15	1.81	1.74	0.94	1.02	1.31	1.25	0.60	0.64	1.17
0.97	1.08	0.81	1.37	1.38	0.99	1.60	1.56	0.84	0.90	1.38	1.48	0.50	0.54	1.10
-0.11	-0.14	-0.15	-0.29	-0.18	-0.16	-0.21	-0.17	-0.10	-0.13	0.07	0.23	-0.10	-0.10	-0.07
-5.5%	-6.0%	-8.3%	-9.7%	-6.3%	-7.3%	-6.2%	-5.3%	-5.4%	-6.7%	2.6%	8.5%	-8.7%	-8.1%	-3.3%
21H1142-03	21H1142-04	21H1142-05	21H1142-06	21H1142-07	21H1142-08	21H1142-09	21H1142-10	21H1142-11	21H1142-12	21H1142-13	21H1142-14	21H1142-15	21H1142-16	21H1142-17

ANALYSIS - MEND-SHAKE FLASK EXTRACTION RESULTS

PAGE: 8d of 9
 GLOBAL PROJECT NO: 1956 (B8)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

199	200	202	202D	202D R	206	207	208	211	215	217	220	221	222	233
Sample ID														
W-199	W-200	W-202	W-202 (D)	W-202 (D - Rep)	W-206	W-207	W-208	W-211	W-215	W-217	W-220	W-221	W-222	W-233
250	250	250	250	N/A	250	250	250	250	250	250	250	250	250	250
750	750	750	750	N/A	750	750	750	750	750	750	750	750	750	750
7.3	7.4	7.4	7.4		6.9	7.4	7.6	7.4	7.5	7.5	7.2	7.5	7.6	7.6
88	87	74	71		83	102	99	134	124	124	177	100	61	99
14.7	14.5	14.0	13.9		11.8	12.0	10.6	11.6	12.5	11.3	12.5	11.8	8.7	11.0
43.6	44.8	46.1	46.9		44.8	44.3	46.5	46.3	58.5	43.4	40.1	43.1	38.9	40.7
9.2	8.5	<0.5	<0.5		4.4	12.5	9.3	27.9	8.2	20.8	57.7	10.3	<0.5	11.7
0.0082	0.0088	0.0166	0.0172		0.008	0.006	0.010	0.008	0.010	0.010	0.005	0.011	0.005	0.0145
35.3	36.2	28.4	28.6		30.7	41.8	33.4	44.3	46.0	42.2	71.9	31.3	24.1	32.9
0.122	0.467	0.44	0.446	0.436	0.464	0.308	0.538	0.274	0.351	0.396	0.139	0.398	0.591	0.504
0.000662	0.0177	0.021	0.0237	0.0241	0.0192	0.00326	0.0107	0.00106	0.0104	0.0163	0.00191	0.0492	0.000933	0.014
0.00128	0.00743	0.00298	0.00326	0.00318	0.0167	0.00411	0.0252	0.00349	0.00499	0.0151	0.00133	0.0271	0.00259	0.0258
0.0921	0.00325	0.00275	0.0026	0.00273	0.00348	0.00305	0.00324	0.00794	0.0077	0.0115	0.00246	0.145	0.0232	0.195
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
<0.0050	<0.0050	<0.0050	<0.0050	0.0041	0.0075	0.0062	0.0077	0.0053	<0.0050	<0.0050	0.0082	0.0055	0.0056	0.0053
0.0000094	0.0000024	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000039	<0.0000020	0.000006	0.0000029	0.0000055
11.9	12.4	9.1	9.0	9.1	9.9	10.2	11.1	14.5	11.0	13.4	17.1	10.5	8.4	12.1
0.0001	0.0002	0.0001	0.0001	0.0001	<0.00010	<0.00010	0.0001	<0.00010	<0.00010	0.0002	<0.00010	<0.00010	0.0002	0.0001
0.000115	0.0000389	0.0000505	0.0000508	0.0000601	0.000195	0.0000559	0.000706	0.000036	0.0000992	0.000222	0.000153	0.000206	0.0000296	0.000103
0.007	0.0016	0.0018	0.0019	0.00191	0.00044	0.00026	0.00205	0.00019	0.00139	0.00222	0.00053	0.00131	0.00031	0.00486
0.0192	0.027	0.009	0.0131	0.0129	0.0062	0.0026	0.0126	<0.0020	0.005	0.0061	<0.0020	0.0024	0.0025	0.008
0.00011	0.000055	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000808	<0.000050	0.000159
0.0007	0.0005	0.0002	0.0003	0.0002	0.0021	0.0032	0.0037	0.0060	0.0035	0.0021	0.0036	0.0028	0.0003	0.0024
1.3	1.3	1.4	1.5	1.5	1.5	4.0	1.4	1.9	4.5	2.1	7.1	1.2	0.8	0.7
0.0372	0.0163	0.00787	0.00742	0.0075	0.0257	0.0172	0.029	0.0388	0.0496	0.0519	0.0539	0.0573	0.00402	0.0169
0.0000084	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005
0.000621	0.00321	0.00666	0.00846	0.0086	0.00238	0.00245	0.00269	0.00572	0.00405	0.0047	0.0029	0.0214	0.000202	0.0123
0.00313	0.00462	0.00477	0.00557	0.00566	0.00292	0.000539	0.0106	0.000311	0.00255	0.00238	0.00113	0.00125	0.000254	0.00101
0.013	0.011	0.019	0.014	0.02	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
4.36	3.27	4.89	4.79	4.66	8.84	6.59	10.8	7.29	8.68	9.97	7.08	9.36	2.38	7.15
0.00103	0.0002	0.00016	0.00018	0.00016	0.0001	0.00024	0.00021	<0.00010	0.00309	0.00021	<0.00010	0.00136	0.00013	0.00068
1.37	1.21	1.19	1.25	1.1	1.28	0.9	1.43	1.11	1.18	1.4	0.77	1.47	1.04	1.77
0.000024	0.000018	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000016	<0.000010	<0.000010	<0.000010	<0.000010	0.00001
1.21	1.7	1.33	1.27	1.25	0.268	0.518	0.338	4.54	3.57	0.832	1.23	1.01	1.21	1.43
0.19	0.0424	0.0328	0.0345	0.0349	0.0544	0.0365	0.0456	0.124	0.164	0.182	0.0374	0.82	0.0506	2.74
5.3	4.3	1.1	<1.00	1.0	1.4	5.2	3.9	6.8	3.7	12.7	18.8	5.3	<1.00	4.3
0.000054	0.000062	0.000061	0.000063	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000069	<0.000050	0.000094
0.0000379	0.0000245	0.0000336	0.0000326	0.0000336	0.0000802	0.0000697	0.000127	0.0000393	0.0000649	0.000056	0.0000719	0.0000928	0.000021	0.0000387
<0.000010	0.000013	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.00002
<0.000050	0.00007	<0.000050	<0.000050	<0.000050	<0.000050	0.000052	0.000057	<0.000050	0.000053	0.000057	<0.000050	0.000057	<0.000050	0.000062
<0.00020	0.00038	0.00061	0.00049	0.00059	<0.00020	<0.00020	0.00024	<0.00020	0.00053	<0.00020	<0.00020	<0.00020	<0.00020	0.00021
0.0017	0.00072	0.0007	0.00068	0.00068	0.00518	0.00078	0.00184	0.00095	0.00163	0.0014	0.00027	0.00098	<0.0002	0.00081
0.0000726	0.000266	0.0000199	0.0000284	0.0000281	0.000259	0.00013	0.00057	0.00013	0.000267	0.00318	0.0006	0.00252	0.000082	0.00164
0.00067	0.00289	0.00185	0.00201	0.00201	0.0006	0.00049	0.00175	0.00145	0.00098	0.00076	0.00022	0.00088	0.0012	0.00092
0.002	<0.0010	0.002	<0.0010	<0.0010	0.004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002	<0.0010	<0.0010
0.0005	0.0014	0.0003	0.0005	0.0004	0.0001	<0.000020	0.0006	0.0000	0.0002	0.0001	0.0000	0.0002	0.0000	0.0011
1.06	1.07	0.92	0.94	0.94	0.99	1.15	1.12	1.51	1.34	1.30	2.00	1.08	0.78	1.06
0.89	0.93	0.80	0.80	0.80	0.91	1.06	1.02	1.30	1.34	1.18	1.69	0.98	0.66	1.03
-0.17	-0.14	-0.12	-0.14	-0.14	-0.08	-0.09	-0.10	-0.21	0.00	-0.12	-0.31	-0.10	-0.12	-0.03
-9.0%	-7.0%	-7.0%	-8.0%	-8.2%	-4.3%	-3.9%	-4.8%	-7.3%	0.0%	-4.7%	-8.5%	-4.9%	-8.1%	-1.5%
21H1142-18	21H1142-19	21H1142-20	21H1142-21	21H1142-21	21H1362-01	21H1362-02	21H1362-03	21H1362-04	21H1362-05	21H1362-06	21H1362-07	21H1362-08	21H1362-09	21H1362-10

CERTIFICATE OF ANALYSIS - MEND-SHAKE FLASK EXTRACTION RESULTS

PAGE: 8e of 9
 GLOBAL PROJECT NO: 1956 (B8)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

233D	234	237	241	243	245	253	257	261	263	266	266 R	266D	267	272
Sample ID												Sample ID		
W-233 (D)	W-234	W-237	W-241	W-243	W-245	W-253	W-257	W-261	W-263	W-266	W-266 (Rep)	W-266 (D)	W-267	W-272
250	250	250	250	250	250	250	250	250	250	250	N/A	250	250	250
750	750	750	750	750	750	750	750	750	750	750	N/A	750	750	750
7.5	7.6	7.5	7.6	7.5	7.5	7.5	7.3	6.9	7.4	7.3		7.3	7.5	7.3
114	94	85	88	86	74	126	121	62	169	116		121	77	133
11.0	10.7	10.8	10.1	10.3	10.2	11.2	13.8	10.6	11.5	11.5		11.6	10.1	11.2
45.7	49.9	40.7	53.7	48.8	40.6	45.1	60.5	36.0	45.8	44.3		44.8	44.2	40.6
14.7	5.0	10.6	1.0	1.0	5.2	19.5	4.9	<0.5	50.7	17.0		17.0	6.3	26.3
	<0.0050	0.0060	0.0088	0.0067	0.0072	0.0264	0.0480	0.0093	0.0062	0.0081			0.0105	0.0071
35.7	33.4	31.9	30.1	26.9	24.2	46.5	65.1	25.8	63.2	40.6		42.3	31.3	43.4
0.47	0.389	0.408	0.417	0.423	0.364	0.336	0.282	0.458	0.297	0.0303	0.0308	0.0299	0.389	0.226
0.0124	0.000529	0.000888	0.00541	0.00563	0.0119	0.00805	0.0012	0.000461	0.00119	0.00399	0.00397	0.00375	0.00109	0.00883
0.0219	0.00122	0.00121	0.00122	0.00526	0.00591	0.193	0.00363	0.0024	0.000723	0.00459	0.00458	0.00461	0.00462	0.0027
0.237	0.00805	0.00728	0.00519	0.00562	0.00437	0.00846	0.0323	0.00368	0.0262	0.0376	0.037	0.0526	0.00335	0.17
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
0.0056	0.0065	<0.0050	0.0061	0.0066	0.0058	0.011	0.0238	0.0062	<0.0050	<0.0050	0.0046	<0.0050	<0.0050	<0.0050
0.0000061	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000025	<0.0000020	0.0000025	0.0000227	0.0000225	0.0000257	<0.0000020	0.0000229
13.3	11.0	10.5	7.2	6.6	5.7	14.9	20.0	9.6	22.3	12.5	12.6	13.2	8.1	15.3
0.0001	0.0005	<0.00010	0.0001	0.0002	0.0001	0.0001	0.0020	0.0002	0.0001	0.0001	0.0001	0.0001	<0.00010	0.0001
0.0000717	0.000587	0.000506	0.000183	0.000229	0.000334	0.0000482	0.00294	0.0000514	0.000329	0.000161	0.000163	0.000198	0.000422	0.0000407
0.00377	0.0102	0.00344	0.00072	0.00251	0.00082	0.00193	0.0707	0.00203	0.00362	0.00258	0.00268	0.00314	0.00144	0.00033
0.0064	0.0138	0.003	0.0046	0.0125	0.0103	0.0028	0.471	0.0029	0.0037	0.0072	0.0074	0.0117	0.0034	0.0025
0.00012	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000964	<0.000050	<0.000050	0.000087	0.000085	0.000136	<0.000050	0.00957
0.0027	0.0006	0.0008	0.0028	0.0032	0.0025	0.0058	0.0005	0.0006	0.0009	0.0210	0.0209	0.0224	0.0012	0.0039
0.6	1.5	1.4	3.0	2.5	2.4	2.3	3.7	0.5	1.8	2.3	2.2	2.3	2.7	1.2
0.0413	0.0218	0.0212	0.0121	0.0104	0.0118	0.0217	0.183	0.00578	0.0457	0.0124	0.0124	0.015	0.0211	0.0559
0.000065	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	0.0000061	0.0000072	<0.000005	<0.000005	<0.000005	0.000034	0.000031	<0.000005	0.0000082
0.0108	0.00108	0.0012	0.000199	0.00105	0.00172	0.00303	0.00273	0.000789	0.000342	0.0133	0.0136	0.0133	0.00241	0.0161
0.000924	0.00536	0.00388	0.00112	0.0012	0.00116	0.0012	0.023	0.000471	0.00201	0.0019	0.00191	0.00213	0.00264	0.000415
<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.041	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
9.32	4.47	3.12	9.95	11.3	8.56	7.05	3.34	1.92	7.84	4.94	4.88	5.07	3.79	9.27
0.00065	0.00028	0.00016	<0.00010	<0.00010	<0.00010	0.00025	0.0006	<0.00010	<0.00010	0.00154	0.00145	0.00151	0.00011	0.0164
1.82	1.17	1.09	1.51	1.65	1.22	1.19	0.87	1.09	1.06	1.78	1.75	1.8	1.23	1.1
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000025	0.000044	<0.000010	<0.000010	0.000037	0.00004	0.000055	<0.000010	0.000063
1.95	3.94	2.42	1.3	1.17	0.529	1.67	1.48	0.972	2.08	2.98	2.95	3.15	1.11	0.563
3.03	0.0586	0.0818	0.0553	0.0758	0.0856	0.0999	0.0341	0.0174	0.186	0.382	0.384	0.4	0.0995	0.985
5.2	<1.00	4.1	<1.00	<1.00	<1.00	10.8	2.2	<1.00	16.1	7.2	6.9	7.3	1.4	14.1
0.000084	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000221	0.000232	0.000231	0.000231	<0.000050	0.000568
0.0000465	0.0000315	0.0000184	0.0000736	0.000103	0.0000549	0.0000401	0.0000077	0.000009	0.0000459	<0.0000040	<0.0000040	<0.0000040	0.0000322	0.0000472
0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.00206	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
<0.000050	0.000064	0.000056	<0.000050	0.000053	0.000051	<0.000050	0.000083	0.00006	0.000062	0.000056	0.000056	<0.000050	<0.000050	<0.000050
<0.00020	<0.00020	<0.00020	0.00043	0.00091	0.00049	0.00022	0.0139	<0.00020	0.00033	<0.00020	<0.00020	0.0002	<0.00020	<0.00020
0.00087	0.00186	0.00044	0.00087	0.00101	0.00059	0.00055	0.144	0.00021	0.00042	0.00652	0.0067	0.00674	0.00037	0.0004
0.00142	0.0000313	0.0000437	0.0000637	0.0000779	0.000135	0.000467	0.000699	0.0000099	0.000218	0.00236	0.00241	0.00253	0.000117	0.000683
0.00095	0.0016	0.00124	0.00138	0.00252	0.00143	0.0014	0.00204	0.00112	0.00094	0.0013	0.00127	0.00145	0.00088	<0.00020
<0.0010	<0.0010	<0.0010	0.005	<0.0010	<0.0010	<0.0010	0.006	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
0.0007	0.0002	0.0001	0.0000	0.0001	0.0001	0.0001	0.0096	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	<0.000020
1.22	1.10	1.04	1.09	1.00	0.92	1.31	1.31	0.72	1.97	1.24	1.24	1.25	1.02	1.36
1.17	1.00	0.87	0.96	0.93	0.77	1.23	1.49	0.66	1.59	1.08	1.08	1.13	0.82	1.18
-0.06	-0.10	-0.17	-0.13	-0.07	-0.15	-0.08	0.18	-0.06	-0.38	-0.16	-0.16	-0.12	-0.20	-0.18
-2.3%	-4.9%	-8.7%	-6.5%	-3.6%	-9.0%	-3.1%	6.4%	-4.5%	-10.6%	-6.9%	-6.9%	-5.2%	-10.9%	-7.1%
21H1362-11	21H1362-12	21H1362-13	21H1362-14	21H1362-15	21H1362-16	21H1362-17	21H1362-18	21H1362-19	21H1362-20	21H1362-21	21H1362-21	21H1362-22	21H1362-23	21H1362-24

CERTIFICATE OF ANALYSIS - MEND-SHAKE FLASK EXTRACTION RESULTS

PAGE: 8f of 9
 GLOBAL PROJECT NO: 1956 (B8)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

278	280	283	290	299	300	301	306	306D	308	309	312	314	324	325
Sample ID														
W-278	W-280	W-283	W-290	W-299	W-300	W-301	W-306	W-306 (D)	W-308	W-309	W-312	W-314	W-324	W-325
250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
7.4	6.8	7.5	7.5	7.3	7.6	7.5	7.6	7.5	7.5	7.3	7.5	7.4	7.5	7.4
134	118	83	90	133	88	96	69	68	83	122	112	156	81	143
11.5	11.0	10.0	10.5	12.0	10.6	11.1	10.0	9.6	10.8	11.7	10.2	11.3	10.4	11.3
44.2	28.5	39.8	47.1	32.6	40.5	42.5	39.5	38.2	42.0	36.5	37.4	32.8	40.4	34.4
23.8	23.3	6.3	5.7	30.1	7.9	9.3	<0.5	<0.5	5.2	23.0	15.8	47.6	5.8	32.2
0.0064	0.0098	0.0058	0.0059	0.0065	0.0056	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.0056	<0.0050	<0.0050
49.7	41.1	29.2	33.5	51.3	31.3	35.3	25.0	24.6	28.9	46.6	37.4	52.1	31.5	47.2
0.273	0.208	0.345	0.438	0.181	0.395	0.278	0.49	0.488	0.438	0.0554	0.268	0.325	0.417	0.188
0.00345	0.00286	0.00212	0.00766	0.0101	0.00267	0.0131	0.0288	0.0291	0.00105	0.000906	0.00195	0.0321	0.00149	0.00235
0.00226	0.000858	0.000879	0.00182	0.00925	0.00151	0.0178	0.00116	0.00122	0.000751	0.00266	0.00402	0.0103	0.0015	0.00155
0.0025	0.00282	0.00275	0.0144	0.00641	0.00675	0.00297	0.00049	0.00048	0.00314	0.0644	0.00263	0.0132	0.00146	0.181
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
<0.0050	<0.0050	0.0056	<0.0050	<0.0050	<0.0050	0.005	0.0052	0.0055	0.0063	<0.0050	0.0053	<0.0050	<0.0050	<0.0050
0.0000032	0.0000032	<0.0000020	<0.0000020	0.0000049	0.0000023	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000026	<0.0000020	0.0000107	<0.0000020	0.0000035
12.4	9.5	10.0	9.2	13.5	8.6	9.2	6.4	7.6	13.3	9.6	16.9	8.8	14.7	
0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
0.0000341	0.0000203	0.0000116	0.0000322	0.000363	0.0000202	0.000134	0.0000194	0.0000174	0.0000253	0.0000781	0.0000677	0.0000464	0.0000232	0.0000152
0.00024	0.00115	0.00032	0.00018	0.00025	0.00015	0.00016	0.00015	0.00021	0.00017	0.00065	0.00021	0.00026	0.00011	0.00028
<0.0020	0.002	0.0026	<0.0020	0.0025	<0.0020	<0.0020	0.0022	0.0023	0.0023	0.0034	0.0033	<0.0020	<0.0020	<0.0020
0.000088	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000056	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
0.0045	0.0019	0.0006	0.0010	0.0018	0.0013	0.0030	0.0005	0.0005	0.0012	0.0051	0.0022	0.0082	0.0005	0.0024
4.6	4.2	1.0	2.6	4.3	2.4	3.0	2.2	2.1	2.4	3.3	3.3	2.4	2.3	2.5
0.033	0.0286	0.0217	0.0148	0.0757	0.012	0.0175	0.00783	0.00733	0.0164	0.0358	0.0219	0.0288	0.0104	0.0212
<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	0.000028	<0.000005	0.0000053	<0.000005	0.00001	<0.000005	<0.000005
0.00527	0.00528	0.0021	0.000362	0.00202	0.00954	0.00197	0.000562	0.000579	0.000349	0.00455	0.00861	0.0356	0.000372	0.00457
0.000283	0.000875	0.000084	0.000418	0.00294	0.00027	0.000702	0.000149	0.000183	0.000227	0.00152	0.000597	0.00218	0.00007	0.000211
<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
4.86	4.35	3.47	5.57	3.5	5.14	5.76	4.44	4.99	7.41	5.89	7.93	9.29	3.62	7.25
0.00102	0.00034	0.00015	0.0003	0.00106	0.00018	0.00023	<0.00010	<0.00010	<0.00010	0.00028	0.00055	0.00125	0.00032	0.00472
1.03	0.88	0.83	1.13	0.92	1.43	0.85	1.09	1.17	0.97	0.94	0.89	1.49	0.95	1.51
0.000026	<0.000010	<0.000010	<0.000010	0.000018	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000017	0.000015	0.000014	<0.000010	<0.000010
2.89	3.64	1.69	1.82	2.08	1.73	1.43	1.74	1.95	1.38	0.899	1.09	0.707	1.51	2.06
0.0388	0.0703	0.0467	0.115	0.141	0.269	0.0687	0.0412	0.0342	0.0716	0.0789	0.0836	0.117	0.0607	1.87
9.9	9.1	2.2	1.3	12.4	2.4	4.0	<1.00	<1.00	1.9	7.9	6.5	15.8	1.9	11.1
<0.000050	0.000053	<0.000050	<0.000050	0.000056	<0.000050	<0.000050	0.00006	<0.000050	<0.000050	0.000112	<0.000050	0.000057	<0.000050	0.000381
0.0000481	0.0000264	0.000017	0.0000368	0.0000224	0.0000396	0.0000439	0.0000319	0.0000356	0.0000318	0.0000419	0.000124	0.000136	0.0000543	0.0000495
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
<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
<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
0.00063	0.00074	0.00029	0.00114	0.00033	0.00126	0.00067	0.00069	0.00073	0.00101	0.00537	0.00344	0.00074	0.00137	0.00122
0.0000489	0.0000287	0.000004	0.0000643	0.000479	0.000594	0.000699	0.0000058	0.0000046	0.0000226	0.000973	0.0000445	0.00123	0.0000042	0.000583
0.00083	0.00049	0.0005	0.0007	0.0003	0.00115	0.00057	0.00063	0.0007	0.00055	0.00076	0.00046	0.00107	0.00066	0.00165
<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
<0.000020	0.0000	<0.000020	<0.000020	<0.000020	0.0002	0.0001	<0.000020	<0.000020	<0.000020	<0.000020	0.0001	<0.000020	<0.000020	<0.000020
1.38	1.06	0.93	1.06	1.28	0.97	1.04	0.79	0.76	0.95	1.21	1.08	1.65	0.93	1.36
1.28	1.12	0.78	0.94	1.23	0.88	0.95	0.74	0.76	0.88	1.13	1.03	1.35	0.83	1.28
-0.10	0.06	-0.14	-0.12	-0.05	-0.09	-0.10	-0.05	-0.01	-0.07	-0.08	-0.05	-0.30	-0.09	-0.08
-3.9%	2.8%	-8.5%	-5.9%	-2.0%	-5.0%	-4.9%	-3.0%	-0.4%	-3.9%	-3.3%	-2.3%	-9.9%	-5.4%	-2.9%
21H1362-25	21H1755-01	21H1755-02	21H1755-03	21H1755-04	21H1755-05	21H1755-06	21H1755-07	21H1755-08	21H1755-09	21H1755-10	21H1755-11	21H1755-12	21H1755-13	21H1755-14

Method Blank - 1	Method Blank - 2	Method Blank - 3	Method Blank - 4
N/A	N/A	N/A	N/A
750	750	750	750
5.5	5.4	5.7	5.5
1.6	1.8	2.2	1.8
3.0	6.6	5.0	
0.3	0.5	0.6	
<0.5	<0.5	<0.5	<0.5
<0.100	<0.100	<0.100	<0.100
<0.0010	<0.0010	<0.0010	<0.0010
<0.000050	<0.000050	<0.000050	<0.000050
<0.000050	<0.000050	<0.000050	<0.000050
<0.00010	<0.00010	<0.00010	<0.00010
<0.000010	<0.000010	<0.000010	<0.000010
<0.000010	<0.000010	<0.000010	<0.000010
<0.000010	<0.000010	<0.000010	<0.000010
<0.0050	<0.0050	<0.0050	<0.0050
<0.0000020	<0.0000020	<0.0000020	<0.0000020
<0.040	<0.040	<0.040	<0.040
<0.00010	<0.00010	<0.00010	<0.00010
<0.0000050	<0.0000050	<0.0000050	<0.0000050
<0.00010	<0.00010	<0.00010	<0.00010
<0.0020	<0.0020	<0.0020	<0.0020
<0.000050	<0.000050	<0.000050	<0.000050
<0.000050	<0.000050	<0.000050	<0.000050
<0.0050	<0.0050	<0.0050	<0.0050
<0.000050	<0.000050	<0.000050	<0.000050
<0.000005	<0.000005	<0.000005	<0.000005
<0.000010	<0.000010	<0.000010	<0.000010
<0.000040	<0.000040	<0.000040	<0.000040
<0.010	<0.010	<0.010	<0.010
<0.010	<0.010	<0.010	<0.010
<0.00010	<0.00010	<0.00010	<0.00010
<0.10	<0.10	<0.10	<0.10
<0.000010	<0.000010	0.000114	0.000037
<0.020	<0.020	<0.020	<0.020
<0.00010	<0.00010	<0.00010	<0.00010
<1.00	<1.00	<1.00	<1.00
<0.000050	<0.000050	<0.000050	<0.000050
<0.0000040	<0.0000040	<0.0000040	<0.0000040
<0.000010	<0.000010	<0.000010	<0.000010
<0.000050	<0.000050	<0.000050	<0.000050
<0.00020	<0.00020	<0.00020	<0.00020
<0.0002	<0.0002	<0.0002	<0.0002
<0.0000010	<0.0000010	<0.0000010	<0.0000010
<0.00020	<0.00020	<0.00020	<0.00020
<0.0010	<0.0010	<0.0010	<0.0010
<0.000020	<0.000020	<0.000020	<0.000020
21G3906-12	21H1142-22	21H1362-26	21H1362-26

CERTIFICATE OF ANALYSIS - MEND-SFE QA/QC RESULTS



PAGE: 9 of 9
 GLOBAL PROJECT NO: 1956 (B8)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

Sulphate:

Certified Reference Material:	Parameter: Sulphate	% Recovery	Matrix Spike % Recovery	Units	QC Limits (%)
STD Mineral Water (28.5 mg/L)	27.50	96.5%		%	80 - 120
STD Mineral Water (28.5 mg/L)	27.00	94.7%		%	80 - 120
Spiked Blank (19.61 mg/L)	19.10		97.4%	%	80 - 120
Spiked Blank (19.61 mg/L)	20.30		103.5%	%	80 - 120

Dissolved Metals by ICP-MS:

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21G3912_B1H0341-BLK1	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	5-Aug-21	0.005	ug/L		
21G3912_B1H0341-SRM1	Mercury dissolved	95	%	F	metals	EPA 245.7*	5-Aug-21	1	%	130	70
21G3912_B1H0422-BLK1	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	5-Aug-21	0.005	ug/L		
21G3912_B1H0422-BLK2	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	5-Aug-21	0.005	ug/L		
21G3912_B1H0422-SRM1	Mercury dissolved	107	%	F	metals	EPA 245.7*	5-Aug-21	1	%	130	70
21G3912_B1H0422-SRM2	Mercury dissolved	94	%	F	metals	EPA 245.7*	5-Aug-21	1	%	130	70
21G3912_B1H0558-BLK1	Aluminum dissolved	<0.0010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3912_B1H0558-BLK1	Antimony dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK1	Arsenic dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK1	Barium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3912_B1H0558-BLK1	Beryllium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3912_B1H0558-BLK1	Bismuth dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3912_B1H0558-BLK1	Boron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.002	mg/L		
21G3912_B1H0558-BLK1	Cadmium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00002	mg/L		
21G3912_B1H0558-BLK1	Calcium dissolved	<0.040	mg/L	F	metals	EPA 6020B	6-Aug-21	0.04	mg/L		
21G3912_B1H0558-BLK1	Chromium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3912_B1H0558-BLK1	Cobalt dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK1	Copper dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3912_B1H0558-BLK1	Iron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.002	mg/L		
21G3912_B1H0558-BLK1	Lead dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK1	Lithium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK1	Magnesium dissolved	<0.0050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.005	mg/L		
21G3912_B1H0558-BLK1	Manganese dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK1	Molybdenum dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3912_B1H0558-BLK1	Nickel dissolved	<0.000040	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00004	mg/L		
21G3912_B1H0558-BLK1	Phosphorus dissolved	<0.010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.01	mg/L		
21G3912_B1H0558-BLK1	Potassium dissolved	<0.010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.01	mg/L		
21G3912_B1H0558-BLK1	Selenium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3912_B1H0558-BLK1	Silicon dissolved	<0.10	mg/L	F	metals	EPA 6020B	6-Aug-21	0.1	mg/L		
21G3912_B1H0558-BLK1	Silver dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3912_B1H0558-BLK1	Sodium dissolved	<0.020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.02	mg/L		
21G3912_B1H0558-BLK1	Strontium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3912_B1H0558-BLK1	Sulfur dissolved	<1.00	mg/L	F	metals	EPA 6020B	6-Aug-21	1	mg/L		
21G3912_B1H0558-BLK1	Tellurium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK1	Thallium dissolved	<0.0000040	mg/L	F	metals	EPA 6020B	6-Aug-21	0.000004	mg/L		
21G3912_B1H0558-BLK1	Thorium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3912_B1H0558-BLK1	Tin dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK1	Titanium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0002	mg/L		
21G3912_B1H0558-BLK1	Uranium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.000001	mg/L		
21G3912_B1H0558-BLK1	Vanadium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0002	mg/L		
21G3912_B1H0558-BLK1	Zinc dissolved	<0.0010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3912_B1H0558-BLK1	Zirconium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00002	mg/L		
21G3912_B1H0558-BLK2	Tungsten dissolved	<0.20	ug/L	F	metals	EPA 6020B	6-Aug-21	0.2	ug/L		
21G3912_B1H0558-BLK2	Aluminum dissolved	<0.0010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3912_B1H0558-BLK2	Antimony dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK2	Arsenic dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK2	Barium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3912_B1H0558-BLK2	Beryllium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3912_B1H0558-BLK2	Bismuth dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3912_B1H0558-BLK2	Boron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.002	mg/L		
21G3912_B1H0558-BLK2	Cadmium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00002	mg/L		
21G3912_B1H0558-BLK2	Calcium dissolved	<0.040	mg/L	F	metals	EPA 6020B	6-Aug-21	0.04	mg/L		
21G3912_B1H0558-BLK2	Chromium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3912_B1H0558-BLK2	Cobalt dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK2	Copper dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3912_B1H0558-BLK2	Iron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.002	mg/L		
21G3912_B1H0558-BLK2	Lead dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK2	Lithium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK2	Magnesium dissolved	<0.0050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.005	mg/L		
21G3912_B1H0558-BLK2	Manganese dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK2	Molybdenum dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3912_B1H0558-BLK2	Nickel dissolved	<0.000040	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00004	mg/L		
21G3912_B1H0558-BLK2	Phosphorus dissolved	<0.010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.01	mg/L		
21G3912_B1H0558-BLK2	Potassium dissolved	<0.010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.01	mg/L		
21G3912_B1H0558-BLK2	Selenium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3912_B1H0558-BLK2	Silicon dissolved	<0.10	mg/L	F	metals	EPA 6020B	6-Aug-21	0.1	mg/L		
21G3912_B1H0558-BLK2	Silver dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3912_B1H0558-BLK2	Sodium dissolved	<0.020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.02	mg/L		
21G3912_B1H0558-BLK2	Strontium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3912_B1H0558-BLK2	Sulfur dissolved	<1.00	mg/L	F	metals	EPA 6020B	6-Aug-21	1	mg/L		
21G3912_B1H0558-BLK2	Tellurium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3912_B1H0558-BLK2	Thallium dissolved	<0.0000040	mg/L	F	metals	EPA 6020B	6-Aug-21	0.000004	mg/L		
21G3912_B1H0558-BLK2	Thorium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3912_B1H0558-BLK2	Tin dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21G3912_B1H0558-BLK2	Titanium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0002	mg/L		
21G3912_B1H0558-BLK2	Uranium dissolved	<0.0000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.000001	mg/L		
21G3912_B1H0558-BLK2	Vanadium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0002	mg/L		
21G3912_B1H0558-BLK2	Zinc dissolved	<0.0010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3912_B1H0558-BLK2	Zirconium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00002	mg/L		
21G3912_B1H0558-BLK2	Tungsten dissolved	<0.20	ug/L	F	metals	EPA 6020B	6-Aug-21	0.2	ug/L		
21G3912_B1H0558-BS1	Aluminum dissolved	107	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Antimony dissolved	99	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Arsenic dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Barium dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Beryllium dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Bismuth dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Boron dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Cadmium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Calcium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Chromium dissolved	94	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Cobalt dissolved	94	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Copper dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Iron dissolved	99	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Lead dissolved	108	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Lithium dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Magnesium dissolved	103	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Manganese dissolved	90	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Molybdenum dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Nickel dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Phosphorus dissolved	85	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Potassium dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Selenium dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Silicon dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Silver dissolved	94	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Sodium dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Strontium dissolved	91	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Sulfur dissolved	84	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Tellurium dissolved	94	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Thallium dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Thorium dissolved	85	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Tin dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Titanium dissolved	106	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Tungsten dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Uranium dissolved	87	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Vanadium dissolved	94	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Zinc dissolved	109	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS1	Zirconium dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Aluminum dissolved	119	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Antimony dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Arsenic dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Barium dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Beryllium dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Bismuth dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Boron dissolved	111	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Cadmium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Calcium dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Chromium dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Cobalt dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Copper dissolved	94	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Iron dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Lead dissolved	110	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Lithium dissolved	93	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Magnesium dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Manganese dissolved	90	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Molybdenum dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Nickel dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Phosphorus dissolved	86	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Potassium dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Selenium dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Silicon dissolved	81	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Silver dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Sodium dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Strontium dissolved	94	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Sulfur dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Tellurium dissolved	90	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Thallium dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Thorium dissolved	86	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Tin dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Titanium dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Tungsten dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Uranium dissolved	88	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Vanadium dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Zinc dissolved	108	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-BS2	Zirconium dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3912_B1H0558-SRM1	Aluminum dissolved	92	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Antimony dissolved	106	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Arsenic dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Barium dissolved	103	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Beryllium dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Boron dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Cadmium dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Calcium dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Chromium dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Cobalt dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Copper dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21G3912_B1H0558-SRM1	Iron dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Lead dissolved	108	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Lithium dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Magnesium dissolved	106	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Manganese dissolved	91	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Molybdenum dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Nickel dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Phosphorus dissolved	84	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Potassium dissolved	106	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Selenium dissolved	110	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Sodium dissolved	107	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Strontium dissolved	93	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Thallium dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Uranium dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Vanadium dissolved	94	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM1	Zinc dissolved	107	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Aluminum dissolved	92	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Antimony dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Arsenic dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Barium dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Beryllium dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Boron dissolved	93	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Cadmium dissolved	99	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Calcium dissolved	106	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Chromium dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Cobalt dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Copper dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Iron dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Lead dissolved	111	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Lithium dissolved	93	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Magnesium dissolved	103	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Manganese dissolved	91	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Molybdenum dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Nickel dissolved	99	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Phosphorus dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Potassium dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Selenium dissolved	109	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Sodium dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Strontium dissolved	92	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Thallium dissolved	99	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Uranium dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Vanadium dissolved	94	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3912_B1H0558-SRM2	Zinc dissolved	106	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
WO-21G3906											
21G3906_B1H0341-BLK1	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	5-Aug-21	0.005	ug/L		
21G3906_B1H0341-SRM1	Mercury dissolved	95	%	F	metals	EPA 245.7*	5-Aug-21	1	%	130	70
21G3906_B1H0554-BLK1	Aluminum dissolved	<0.0010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3906_B1H0554-BLK1	Antimony dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK1	Arsenic dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK1	Barium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3906_B1H0554-BLK1	Beryllium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK1	Bismuth dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK1	Boron dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3906_B1H0554-BLK1	Cadmium dissolved	<0.0000020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.000002	mg/L		
21G3906_B1H0554-BLK1	Calcium dissolved	<0.040	mg/L	F	metals	EPA 6020B	6-Aug-21	0.04	mg/L		
21G3906_B1H0554-BLK1	Chromium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3906_B1H0554-BLK1	Cobalt dissolved	<0.0000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.000005	mg/L		
21G3906_B1H0554-BLK1	Copper dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3906_B1H0554-BLK1	Iron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.002	mg/L		
21G3906_B1H0554-BLK1	Lead dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK1	Lithium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK1	Magnesium dissolved	<0.0050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.005	mg/L		
21G3906_B1H0554-BLK1	Manganese dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK1	Molybdenum dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK1	Nickel dissolved	<0.000020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00002	mg/L		
21G3906_B1H0554-BLK1	Phosphorus dissolved	<0.010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.01	mg/L		
21G3906_B1H0554-BLK1	Potassium dissolved	<0.010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.01	mg/L		
21G3906_B1H0554-BLK1	Selenium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3906_B1H0554-BLK1	Silicon dissolved	<0.10	mg/L	F	metals	EPA 6020B	6-Aug-21	0.1	mg/L		
21G3906_B1H0554-BLK1	Silver dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK1	Sodium dissolved	<0.010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.01	mg/L		
21G3906_B1H0554-BLK1	Strontium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3906_B1H0554-BLK1	Sulfur dissolved	<0.50	mg/L	F	metals	EPA 6020B	6-Aug-21	0.5	mg/L		
21G3906_B1H0554-BLK1	Tellurium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK1	Thallium dissolved	<0.0000040	mg/L	F	metals	EPA 6020B	6-Aug-21	0.000004	mg/L		
21G3906_B1H0554-BLK1	Thorium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK1	Tin dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK1	Titanium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0002	mg/L		
21G3906_B1H0554-BLK1	Uranium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK1	Vanadium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0002	mg/L		
21G3906_B1H0554-BLK1	Zinc dissolved	<0.0010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3906_B1H0554-BLK1	Zirconium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00002	mg/L		
21G3906_B1H0554-BLK1	Tungsten dissolved	<0.20	ug/L	F	metals	EPA 6020B	6-Aug-21	0.2	ug/L		
21G3906_B1H0554-BLK2	Aluminum dissolved	<0.0010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3906_B1H0554-BLK2	Antimony dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK2	Arsenic dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK2	Barium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3906_B1H0554-BLK2	Beryllium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK2	Bismuth dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK2	Boron dissolved	<0.0010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3906_B1H0554-BLK2	Cadmium dissolved	<0.0000020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.000002	mg/L		

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21G3906_B1H0554-BLK2	Calcium dissolved	<0.040	mg/L	F	metals	EPA 6020B	6-Aug-21	0.04	mg/L		
21G3906_B1H0554-BLK2	Chromium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3906_B1H0554-BLK2	Cobalt dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.000005	mg/L		
21G3906_B1H0554-BLK2	Copper dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3906_B1H0554-BLK2	Iron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.002	mg/L		
21G3906_B1H0554-BLK2	Lead dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK2	Lithium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK2	Magnesium dissolved	<0.0050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.005	mg/L		
21G3906_B1H0554-BLK2	Manganese dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK2	Molybdenum dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK2	Nickel dissolved	<0.000020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00002	mg/L		
21G3906_B1H0554-BLK2	Phosphorus dissolved	<0.010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.01	mg/L		
21G3906_B1H0554-BLK2	Potassium dissolved	<0.010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.01	mg/L		
21G3906_B1H0554-BLK2	Selenium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3906_B1H0554-BLK2	Silicon dissolved	<0.10	mg/L	F	metals	EPA 6020B	6-Aug-21	0.1	mg/L		
21G3906_B1H0554-BLK2	Silver dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK2	Sodium dissolved	<0.010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.01	mg/L		
21G3906_B1H0554-BLK2	Strontium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0001	mg/L		
21G3906_B1H0554-BLK2	Sulfur dissolved	<0.50	mg/L	F	metals	EPA 6020B	6-Aug-21	0.5	mg/L		
21G3906_B1H0554-BLK2	Tellurium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK2	Thallium dissolved	<0.0000040	mg/L	F	metals	EPA 6020B	6-Aug-21	0.000004	mg/L		
21G3906_B1H0554-BLK2	Thorium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK2	Tin dissolved	<0.000050	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00005	mg/L		
21G3906_B1H0554-BLK2	Titanium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0002	mg/L		
21G3906_B1H0554-BLK2	Uranium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00001	mg/L		
21G3906_B1H0554-BLK2	Vanadium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.0002	mg/L		
21G3906_B1H0554-BLK2	Zinc dissolved	<0.0010	mg/L	F	metals	EPA 6020B	6-Aug-21	0.001	mg/L		
21G3906_B1H0554-BLK2	Zirconium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	6-Aug-21	0.00002	mg/L		
21G3906_B1H0554-BLK2	Tungsten dissolved	<0.20	ug/L	F	metals	EPA 6020B	6-Aug-21	0.2	ug/L		
21G3906_B1H0554-BS1	Aluminum dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Antimony dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Arsenic dissolved	99	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Barium dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Beryllium dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Bismuth dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Boron dissolved	109	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Cadmium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Calcium dissolved	107	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Chromium dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Cobalt dissolved	99	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Copper dissolved	99	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Iron dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Lead dissolved	108	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Lithium dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Magnesium dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Manganese dissolved	93	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Molybdenum dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Nickel dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Phosphorus dissolved	90	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Potassium dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Selenium dissolved	106	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Silicon dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Silver dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Sodium dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Strontium dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Sulfur dissolved	80	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Tellurium dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Thallium dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Thorium dissolved	84	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Tin dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Titanium dissolved	115	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Tungsten dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Uranium dissolved	87	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Vanadium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Zinc dissolved	111	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS1	Zirconium dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Aluminum dissolved	115	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Antimony dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Arsenic dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Barium dissolved	112	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Beryllium dissolved	103	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Bismuth dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Boron dissolved	107	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Cadmium dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Calcium dissolved	111	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Chromium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Cobalt dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Copper dissolved	107	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Iron dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Lead dissolved	109	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Lithium dissolved	103	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Magnesium dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Manganese dissolved	95	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Molybdenum dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Nickel dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Phosphorus dissolved	91	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Potassium dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Selenium dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Silicon dissolved	114	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Silver dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Sodium dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21G3906_B1H0554-BS2	Strontium dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Sulfur dissolved	111	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Tellurium dissolved	99	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Thallium dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Thorium dissolved	85	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Tin dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Titanium dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Tungsten dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Uranium dissolved	88	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Vanadium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Zinc dissolved	112	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-BS2	Zirconium dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	120	80
21G3906_B1H0554-SRM1	Aluminum dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Antimony dissolved	108	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Arsenic dissolved	108	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Barium dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Beryllium dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Boron dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Cadmium dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Calcium dissolved	113	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Chromium dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Cobalt dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Copper dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Iron dissolved	103	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Lead dissolved	111	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Lithium dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Magnesium dissolved	110	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Manganese dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Molybdenum dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Nickel dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Phosphorus dissolved	126	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Potassium dissolved	110	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Selenium dissolved	110	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Sodium dissolved	112	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Strontium dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Thallium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Uranium dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Vanadium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM1	Zinc dissolved	111	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Aluminum dissolved	92	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Antimony dissolved	108	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Arsenic dissolved	106	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Barium dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Beryllium dissolved	103	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Boron dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Cadmium dissolved	103	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Calcium dissolved	111	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Chromium dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Cobalt dissolved	102	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Copper dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Iron dissolved	101	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Lead dissolved	112	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Lithium dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Magnesium dissolved	109	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Manganese dissolved	96	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Molybdenum dissolved	104	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Nickel dissolved	105	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Phosphorus dissolved	109	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Potassium dissolved	108	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Selenium dissolved	111	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Sodium dissolved	110	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Strontium dissolved	97	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Thallium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Uranium dissolved	98	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Vanadium dissolved	100	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
21G3906_B1H0554-SRM2	Zinc dissolved	111	%	F	metals	EPA 6020B	6-Aug-21	1	%	130	70
WO-21H0858											
21H0858_B1H1009-BLK1	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	11-Aug-21	0.005	ug/L		
21H0858_B1H1009-BLK2	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	11-Aug-21	0.005	ug/L		
21H0858_B1H1009-SRM1	Mercury dissolved	101	%	F	metals	EPA 245.7*	11-Aug-21	1	%	130	70
21H0858_B1H1009-SRM2	Mercury dissolved	88	%	F	metals	EPA 245.7*	11-Aug-21	1	%	130	70
21H0858_B1H1100-BLK1	Aluminum dissolved	<0.0010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.001	mg/L		
21H0858_B1H1100-BLK1	Antimony dissolved	<0.000050	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK1	Arsenic dissolved	<0.000050	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK1	Barium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.0001	mg/L		
21H0858_B1H1100-BLK1	Beryllium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00001	mg/L		
21H0858_B1H1100-BLK1	Bismuth dissolved	<0.000010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00001	mg/L		
21H0858_B1H1100-BLK1	Boron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	11-Aug-21	0.002	mg/L		
21H0858_B1H1100-BLK1	Cadmium dissolved	<0.0000020	mg/L	F	metals	EPA 6020B	11-Aug-21	0.000002	mg/L		
21H0858_B1H1100-BLK1	Calcium dissolved	<0.040	mg/L	F	metals	EPA 6020B	11-Aug-21	0.04	mg/L		
21H0858_B1H1100-BLK1	Chromium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.0001	mg/L		
21H0858_B1H1100-BLK1	Cobalt dissolved	<0.0000050	mg/L	F	metals	EPA 6020B	11-Aug-21	0.000005	mg/L		
21H0858_B1H1100-BLK1	Copper dissolved	<0.00010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.0001	mg/L		
21H0858_B1H1100-BLK1	Iron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	11-Aug-21	0.002	mg/L		
21H0858_B1H1100-BLK1	Lead dissolved	<0.000050	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK1	Lithium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK1	Magnesium dissolved	<0.0050	mg/L	F	metals	EPA 6020B	11-Aug-21	0.005	mg/L		
21H0858_B1H1100-BLK1	Manganese dissolved	<0.000050	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK1	Molybdenum dissolved	<0.000010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00001	mg/L		
21H0858_B1H1100-BLK1	Nickel dissolved	<0.000040	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00004	mg/L		
21H0858_B1H1100-BLK1	Phosphorus dissolved	<0.010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.01	mg/L		

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21H0858_B1H1100-BLK1	Potassium dissolved	<0.010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.01	mg/L		
21H0858_B1H1100-BLK1	Selenium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.0001	mg/L		
21H0858_B1H1100-BLK1	Silicon dissolved	<0.10	mg/L	F	metals	EPA 6020B	11-Aug-21	0.1	mg/L		
21H0858_B1H1100-BLK1	Silver dissolved	<0.000010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00001	mg/L		
21H0858_B1H1100-BLK1	Sodium dissolved	<0.020	mg/L	F	metals	EPA 6020B	11-Aug-21	0.02	mg/L		
21H0858_B1H1100-BLK1	Strontium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.0001	mg/L		
21H0858_B1H1100-BLK1	Sulfur dissolved	<0.50	mg/L	F	metals	EPA 6020B	11-Aug-21	0.5	mg/L		
21H0858_B1H1100-BLK1	Tellurium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK1	Thallium dissolved	<0.0000040	mg/L	F	metals	EPA 6020B	11-Aug-21	0.000004	mg/L		
21H0858_B1H1100-BLK1	Thorium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00001	mg/L		
21H0858_B1H1100-BLK1	Tin dissolved	<0.000050	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK1	Titanium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	11-Aug-21	0.0002	mg/L		
21H0858_B1H1100-BLK1	Uranium dissolved	<0.0000010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.000001	mg/L		
21H0858_B1H1100-BLK1	Vanadium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	11-Aug-21	0.0002	mg/L		
21H0858_B1H1100-BLK1	Zinc dissolved	<0.0010	mg/L	F	metals	EPA 6020B	11-Aug-21	0.001	mg/L		
21H0858_B1H1100-BLK1	Zirconium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	11-Aug-21	0.00002	mg/L		
21H0858_B1H1100-BLK1	Tungsten dissolved	<0.20	ug/L	F	metals	EPA 6020B	11-Aug-21	0.2	ug/L		
21H0858_B1H1100-BLK2	Aluminum dissolved	<0.0010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.001	mg/L		
21H0858_B1H1100-BLK2	Antimony dissolved	<0.000050	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK2	Arsenic dissolved	<0.000050	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK2	Barium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.0001	mg/L		
21H0858_B1H1100-BLK2	Beryllium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00001	mg/L		
21H0858_B1H1100-BLK2	Bismuth dissolved	<0.000010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00001	mg/L		
21H0858_B1H1100-BLK2	Boron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	12-Aug-21	0.002	mg/L		
21H0858_B1H1100-BLK2	Cadmium dissolved	<0.0000020	mg/L	F	metals	EPA 6020B	12-Aug-21	0.000002	mg/L		
21H0858_B1H1100-BLK2	Calcium dissolved	<0.040	mg/L	F	metals	EPA 6020B	12-Aug-21	0.04	mg/L		
21H0858_B1H1100-BLK2	Chromium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.0001	mg/L		
21H0858_B1H1100-BLK2	Cobalt dissolved	<0.0000050	mg/L	F	metals	EPA 6020B	12-Aug-21	0.000005	mg/L		
21H0858_B1H1100-BLK2	Copper dissolved	<0.00010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.0001	mg/L		
21H0858_B1H1100-BLK2	Iron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	12-Aug-21	0.002	mg/L		
21H0858_B1H1100-BLK2	Lead dissolved	<0.000050	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK2	Lithium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK2	Magnesium dissolved	<0.0050	mg/L	F	metals	EPA 6020B	12-Aug-21	0.005	mg/L		
21H0858_B1H1100-BLK2	Manganese dissolved	<0.000050	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK2	Molybdenum dissolved	<0.000010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00001	mg/L		
21H0858_B1H1100-BLK2	Nickel dissolved	<0.000040	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00004	mg/L		
21H0858_B1H1100-BLK2	Phosphorus dissolved	<0.010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.01	mg/L		
21H0858_B1H1100-BLK2	Potassium dissolved	<0.010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.01	mg/L		
21H0858_B1H1100-BLK2	Selenium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.0001	mg/L		
21H0858_B1H1100-BLK2	Silicon dissolved	<0.10	mg/L	F	metals	EPA 6020B	12-Aug-21	0.1	mg/L		
21H0858_B1H1100-BLK2	Silver dissolved	<0.000010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00001	mg/L		
21H0858_B1H1100-BLK2	Sodium dissolved	<0.020	mg/L	F	metals	EPA 6020B	12-Aug-21	0.02	mg/L		
21H0858_B1H1100-BLK2	Strontium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.0001	mg/L		
21H0858_B1H1100-BLK2	Sulfur dissolved	<0.50	mg/L	F	metals	EPA 6020B	12-Aug-21	0.5	mg/L		
21H0858_B1H1100-BLK2	Tellurium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK2	Thallium dissolved	<0.0000040	mg/L	F	metals	EPA 6020B	12-Aug-21	0.000004	mg/L		
21H0858_B1H1100-BLK2	Thorium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00001	mg/L		
21H0858_B1H1100-BLK2	Tin dissolved	<0.000050	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00005	mg/L		
21H0858_B1H1100-BLK2	Titanium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	12-Aug-21	0.0002	mg/L		
21H0858_B1H1100-BLK2	Uranium dissolved	<0.0000010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.000001	mg/L		
21H0858_B1H1100-BLK2	Vanadium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	12-Aug-21	0.0002	mg/L		
21H0858_B1H1100-BLK2	Zinc dissolved	<0.0010	mg/L	F	metals	EPA 6020B	12-Aug-21	0.001	mg/L		
21H0858_B1H1100-BLK2	Zirconium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	12-Aug-21	0.00002	mg/L		
21H0858_B1H1100-BLK2	Tungsten dissolved	<0.20	ug/L	F	metals	EPA 6020B	12-Aug-21	0.2	ug/L		
21H0858_B1H1100-BS1	Aluminum dissolved	87	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Antimony dissolved	89	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Arsenic dissolved	90	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Barium dissolved	92	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Beryllium dissolved	100	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Bismuth dissolved	93	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Boron dissolved	99	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Cadmium dissolved	90	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Calcium dissolved	95	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Chromium dissolved	94	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Cobalt dissolved	93	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Copper dissolved	91	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Iron dissolved	92	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Lead dissolved	104	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Lithium dissolved	99	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Magnesium dissolved	105	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Manganese dissolved	88	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Molybdenum dissolved	88	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Nickel dissolved	93	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Phosphorus dissolved	92	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Potassium dissolved	98	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Selenium dissolved	93	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Silicon dissolved	110	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Silver dissolved	88	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Sodium dissolved	103	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Strontium dissolved	82	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Sulfur dissolved	89	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Tellurium dissolved	91	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Thallium dissolved	90	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Thorium dissolved	89	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Tin dissolved	91	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Titanium dissolved	120	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Tungsten dissolved	91	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Uranium dissolved	89	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Vanadium dissolved	98	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Zinc dissolved	92	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS1	Zirconium dissolved	94	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21H0858_B1H1100-BS2	Aluminum dissolved	89	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Antimony dissolved	90	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Arsenic dissolved	92	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Barium dissolved	90	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Beryllium dissolved	100	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Bismuth dissolved	93	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Boron dissolved	97	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Cadmium dissolved	91	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Calcium dissolved	96	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Chromium dissolved	96	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Cobalt dissolved	93	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Copper dissolved	92	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Iron dissolved	91	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Lead dissolved	103	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Lithium dissolved	99	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Magnesium dissolved	105	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Manganese dissolved	89	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Molybdenum dissolved	89	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Nickel dissolved	94	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Phosphorus dissolved	94	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Potassium dissolved	98	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Selenium dissolved	87	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Silicon dissolved	110	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Silver dissolved	88	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Sodium dissolved	103	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Strontium dissolved	85	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Sulfur dissolved	90	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Tellurium dissolved	92	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Thallium dissolved	89	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Thorium dissolved	88	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Tin dissolved	90	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Titanium dissolved	88	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Tungsten dissolved	92	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Uranium dissolved	88	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Vanadium dissolved	97	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Zinc dissolved	88	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-BS2	Zirconium dissolved	96	%	F	metals	EPA 6020B	12-Aug-21	1	%	120	80
21H0858_B1H1100-SRM1	Aluminum dissolved	105	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Antimony dissolved	114	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Arsenic dissolved	117	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Barium dissolved	106	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Beryllium dissolved	114	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Boron dissolved	108	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Cadmium dissolved	110	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Calcium dissolved	124	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Chromium dissolved	111	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Cobalt dissolved	113	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Copper dissolved	108	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Iron dissolved	112	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Lead dissolved	122	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Lithium dissolved	116	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Magnesium dissolved	110	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Manganese dissolved	102	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Molybdenum dissolved	109	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Nickel dissolved	114	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Phosphorus dissolved	113	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Potassium dissolved	122	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Selenium dissolved	114	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Sodium dissolved	125	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Strontium dissolved	107	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Thallium dissolved	106	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Uranium dissolved	103	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Vanadium dissolved	109	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM1	Zinc dissolved	114	%	F	metals	EPA 6020B	11-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Aluminum dissolved	115	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Antimony dissolved	115	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Arsenic dissolved	121	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Barium dissolved	111	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Beryllium dissolved	118	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Boron dissolved	110	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Cadmium dissolved	111	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Calcium dissolved	125	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Chromium dissolved	111	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Cobalt dissolved	113	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Copper dissolved	108	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Iron dissolved	114	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Lead dissolved	127	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Lithium dissolved	123	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Magnesium dissolved	112	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Manganese dissolved	103	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Molybdenum dissolved	112	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Nickel dissolved	113	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Phosphorus dissolved	112	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Potassium dissolved	126	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Selenium dissolved	111	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Sodium dissolved	127	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Strontium dissolved	109	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Thallium dissolved	110	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Uranium dissolved	106	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Vanadium dissolved	109	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70
21H0858_B1H1100-SRM2	Zinc dissolved	114	%	F	metals	EPA 6020B	12-Aug-21	1	%	130	70

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21H0858_B1H1129-BLK1	Phosphorus Total Dissolved	<0.0050	mg/L	F	General	Par SM 4500-P F (2	12-Aug-21	0.005	mg/L		
21H0858_B1H1129-BS1	Phosphorus Total Dissolved	102	%	F	General	Par SM 4500-P F (2	12-Aug-21	1	%	115	85
21H0858_B1H1210-BLK1	Phosphorus Total Dissolved	<0.0050	mg/L	F	General	Par SM 4500-P F (2	13-Aug-21	0.005	mg/L		
21H0858_B1H1210-BLK2	Phosphorus Total Dissolved	<0.0050	mg/L	F	General	Par SM 4500-P F (2	13-Aug-21	0.005	mg/L		
21H0858_B1H1210-BS1	Phosphorus Total Dissolved	108	%	F	General	Par SM 4500-P F (2	13-Aug-21	1	%	115	85
21H0858_B1H1210-BS2	Phosphorus Total Dissolved	108	%	F	General	Par SM 4500-P F (2	13-Aug-21	1	%	115	85
21H0858_B1H1225-BLK1	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	12-Aug-21	0.005	ug/L		
21H0858_B1H1225-SRM1	Mercury dissolved	101	%	F	metals	EPA 245.7*	12-Aug-21	1	%	130	70
WO-21H1142											
21H1142_B1H1276-BLK1	Aluminum dissolved	<0.0010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.001	mg/L		
21H1142_B1H1276-BLK1	Antimony dissolved	<0.000050	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00005	mg/L		
21H1142_B1H1276-BLK1	Arsenic dissolved	<0.000050	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00005	mg/L		
21H1142_B1H1276-BLK1	Barium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.0001	mg/L		
21H1142_B1H1276-BLK1	Beryllium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00001	mg/L		
21H1142_B1H1276-BLK1	Bismuth dissolved	<0.000010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00001	mg/L		
21H1142_B1H1276-BLK1	Boron dissolved	<0.0010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.001	mg/L		
21H1142_B1H1276-BLK1	Cadmium dissolved	<0.0000020	mg/L	F	metals	EPA 6020B	13-Aug-21	0.000002	mg/L		
21H1142_B1H1276-BLK1	Calcium dissolved	<0.040	mg/L	F	metals	EPA 6020B	13-Aug-21	0.04	mg/L		
21H1142_B1H1276-BLK1	Chromium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.0001	mg/L		
21H1142_B1H1276-BLK1	Cobalt dissolved	<0.0000050	mg/L	F	metals	EPA 6020B	13-Aug-21	0.000005	mg/L		
21H1142_B1H1276-BLK1	Copper dissolved	<0.00010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.0001	mg/L		
21H1142_B1H1276-BLK1	Iron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	13-Aug-21	0.002	mg/L		
21H1142_B1H1276-BLK1	Lead dissolved	<0.000050	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00005	mg/L		
21H1142_B1H1276-BLK1	Lithium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00005	mg/L		
21H1142_B1H1276-BLK1	Magnesium dissolved	<0.0050	mg/L	F	metals	EPA 6020B	13-Aug-21	0.005	mg/L		
21H1142_B1H1276-BLK1	Manganese dissolved	<0.000050	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00005	mg/L		
21H1142_B1H1276-BLK1	Molybdenum dissolved	<0.000010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00001	mg/L		
21H1142_B1H1276-BLK1	Nickel dissolved	<0.000040	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00004	mg/L		
21H1142_B1H1276-BLK1	Phosphorus dissolved	<0.010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.01	mg/L		
21H1142_B1H1276-BLK1	Potassium dissolved	<0.010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.01	mg/L		
21H1142_B1H1276-BLK1	Selenium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.0001	mg/L		
21H1142_B1H1276-BLK1	Silicon dissolved	<0.10	mg/L	F	metals	EPA 6020B	13-Aug-21	0.1	mg/L		
21H1142_B1H1276-BLK1	Silver dissolved	<0.000010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00001	mg/L		
21H1142_B1H1276-BLK1	Sodium dissolved	<0.020	mg/L	F	metals	EPA 6020B	13-Aug-21	0.02	mg/L		
21H1142_B1H1276-BLK1	Strontium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.0001	mg/L		
21H1142_B1H1276-BLK1	Sulfur dissolved	<0.50	mg/L	F	metals	EPA 6020B	13-Aug-21	0.5	mg/L		
21H1142_B1H1276-BLK1	Tellurium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00005	mg/L		
21H1142_B1H1276-BLK1	Thallium dissolved	<0.0000040	mg/L	F	metals	EPA 6020B	13-Aug-21	0.000004	mg/L		
21H1142_B1H1276-BLK1	Thorium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00001	mg/L		
21H1142_B1H1276-BLK1	Tin dissolved	<0.000050	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00005	mg/L		
21H1142_B1H1276-BLK1	Titanium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	13-Aug-21	0.0002	mg/L		
21H1142_B1H1276-BLK1	Uranium dissolved	<0.0000010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.000001	mg/L		
21H1142_B1H1276-BLK1	Vanadium dissolved	<0.0000010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.000001	mg/L		
21H1142_B1H1276-BLK1	Vanadium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	13-Aug-21	0.0002	mg/L		
21H1142_B1H1276-BLK1	Zinc dissolved	<0.0010	mg/L	F	metals	EPA 6020B	13-Aug-21	0.001	mg/L		
21H1142_B1H1276-BLK1	Zirconium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	13-Aug-21	0.00002	mg/L		
21H1142_B1H1276-BLK2	Tungsten dissolved	<0.20	ug/L	F	metals	EPA 6020B	13-Aug-21	0.2	ug/L		
21H1142_B1H1276-BS1	Aluminum dissolved	114	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Antimony dissolved	92	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Arsenic dissolved	95	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Barium dissolved	92	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Beryllium dissolved	102	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Bismuth dissolved	95	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Boron dissolved	106	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Cadmium dissolved	94	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21H1142_B1H1276-BS1	Calcium dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Chromium dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Cobalt dissolved	96	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Copper dissolved	97	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Iron dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Lead dissolved	106	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Lithium dissolved	103	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Magnesium dissolved	110	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Manganese dissolved	95	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Molybdenum dissolved	91	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Nickel dissolved	96	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Phosphorus dissolved	104	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Potassium dissolved	105	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Selenium dissolved	97	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Silicon dissolved	119	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Silver dissolved	88	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Sodium dissolved	108	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Strontium dissolved	97	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Sulfur dissolved	106	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Tellurium dissolved	101	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Thallium dissolved	93	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Thorium dissolved	89	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Tin dissolved	95	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Titanium dissolved	109	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Tungsten dissolved	94	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Uranium dissolved	92	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Vanadium dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Zinc dissolved	101	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS1	Zirconium dissolved	97	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Aluminum dissolved	118	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Antimony dissolved	94	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Arsenic dissolved	96	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Barium dissolved	93	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Beryllium dissolved	99	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Bismuth dissolved	96	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Boron dissolved	115	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Cadmium dissolved	94	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Calcium dissolved	99	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Chromium dissolved	99	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Cobalt dissolved	96	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Copper dissolved	96	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Iron dissolved	99	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Lead dissolved	108	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Lithium dissolved	102	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Magnesium dissolved	113	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Manganese dissolved	95	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Molybdenum dissolved	91	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Nickel dissolved	97	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Phosphorus dissolved	103	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Potassium dissolved	104	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Selenium dissolved	96	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Silicon dissolved	113	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Silver dissolved	89	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Sodium dissolved	110	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Strontium dissolved	89	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Sulfur dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Tellurium dissolved	97	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Thallium dissolved	94	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Thorium dissolved	91	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Tin dissolved	96	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Titanium dissolved	105	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Tungsten dissolved	95	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Uranium dissolved	92	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Vanadium dissolved	100	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Zinc dissolved	97	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-BS2	Zirconium dissolved	100	%	F	metals	EPA 6020B	13-Aug-21	1	%	120	80
21H1142_B1H1276-SRM1	Aluminum dissolved	105	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Antimony dissolved	102	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Arsenic dissolved	106	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Barium dissolved	99	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Beryllium dissolved	105	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Boron dissolved	100	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Cadmium dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Calcium dissolved	105	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Chromium dissolved	100	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Cobalt dissolved	102	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Copper dissolved	100	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Iron dissolved	105	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Lead dissolved	110	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Lithium dissolved	107	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Magnesium dissolved	118	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Manganese dissolved	96	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Molybdenum dissolved	99	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Nickel dissolved	102	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Phosphorus dissolved	117	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Potassium dissolved	114	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Selenium dissolved	109	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Sodium dissolved	117	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Strontium dissolved	91	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Thallium dissolved	97	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Uranium dissolved	93	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21H1142_B1H1276-SRM1	Vanadium dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM1	Zinc dissolved	104	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Aluminum dissolved	107	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Antimony dissolved	100	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Arsenic dissolved	105	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Barium dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Beryllium dissolved	106	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Boron dissolved	103	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Cadmium dissolved	97	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Calcium dissolved	104	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Chromium dissolved	100	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Cobalt dissolved	102	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Copper dissolved	99	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Iron dissolved	103	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Lead dissolved	112	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Lithium dissolved	107	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Magnesium dissolved	116	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Manganese dissolved	96	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Molybdenum dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Nickel dissolved	102	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Phosphorus dissolved	105	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Potassium dissolved	112	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Selenium dissolved	103	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Sodium dissolved	116	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Strontium dissolved	90	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Thallium dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Uranium dissolved	94	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Vanadium dissolved	98	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1276-SRM2	Zinc dissolved	104	%	F	metals	EPA 6020B	13-Aug-21	1	%	130	70
21H1142_B1H1459-BLK1	Phosphorus Total Dissolved	<0.0050	mg/L	F	General	Par SM 4500-P F (2 16-Aug-21		0.005	mg/L		
21H1142_B1H1459-BLK2	Phosphorus Total Dissolved	<0.0050	mg/L	F	General	Par SM 4500-P F (2 16-Aug-21		0.005	mg/L		
21H1142_B1H1459-BS1	Phosphorus Total Dissolved	106	%	F	General	Par SM 4500-P F (2 16-Aug-21		1	%	115	85
21H1142_B1H1459-BS2	Phosphorus Total Dissolved	107	%	F	General	Par SM 4500-P F (2 16-Aug-21		1	%	115	85
21H1142_B1H1597-BLK1	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	17-Aug-21	0.005	ug/L		
21H1142_B1H1597-BLK2	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	17-Aug-21	0.005	ug/L		
21H1142_B1H1597-BLK3	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	17-Aug-21	0.005	ug/L		
21H1142_B1H1597-MS1	Mercury dissolved	0.199	ug/L	F	metals	EPA 245.7*	17-Aug-21	0.005	ug/L	130	70
21H1142_B1H1597-SRM1	Mercury dissolved	85	%	F	metals	EPA 245.7*	17-Aug-21	1	%	130	70
21H1142_B1H1597-SRM2	Mercury dissolved	84	%	F	metals	EPA 245.7*	17-Aug-21	1	%	130	70
21H1142_B1H1597-SRM3	Mercury dissolved	84	%	F	metals	EPA 245.7*	17-Aug-21	1	%	130	70
WO-21H1362											
21H1362_B1H1302-BLK1	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	13-Aug-21	0.005	ug/L		
21H1362_B1H1302-BLK2	Mercury dissolved	<0.0050	ug/L	F	metals	EPA 245.7*	13-Aug-21	0.005	ug/L		
21H1362_B1H1302-MS2	Mercury dissolved	0.255	ug/L	F	metals	EPA 245.7*	13-Aug-21	0.005	ug/L	130	70
21H1362_B1H1302-SRM1	Mercury dissolved	104	%	F	metals	EPA 245.7*	13-Aug-21	1	%	130	70
21H1362_B1H1302-SRM2	Mercury dissolved	105	%	F	metals	EPA 245.7*	13-Aug-21	1	%	130	70
21H1362_B1H1510-BLK1	Aluminum dissolved	<0.0010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.001	mg/L		
21H1362_B1H1510-BLK1	Antimony dissolved	<0.000050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00005	mg/L		
21H1362_B1H1510-BLK1	Arsenic dissolved	<0.000050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00005	mg/L		
21H1362_B1H1510-BLK1	Barium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.0001	mg/L		
21H1362_B1H1510-BLK1	Beryllium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00001	mg/L		
21H1362_B1H1510-BLK1	Bismuth dissolved	<0.000010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00001	mg/L		
21H1362_B1H1510-BLK1	Boron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	16-Aug-21	0.002	mg/L		
21H1362_B1H1510-BLK1	Cadmium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00002	mg/L		
21H1362_B1H1510-BLK1	Calcium dissolved	<0.040	mg/L	F	metals	EPA 6020B	16-Aug-21	0.04	mg/L		
21H1362_B1H1510-BLK1	Chromium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.0001	mg/L		
21H1362_B1H1510-BLK1	Cobalt dissolved	<0.000050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00005	mg/L		
21H1362_B1H1510-BLK1	Copper dissolved	<0.00010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.0001	mg/L		
21H1362_B1H1510-BLK1	Iron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	16-Aug-21	0.002	mg/L		
21H1362_B1H1510-BLK1	Lead dissolved	<0.000050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00005	mg/L		
21H1362_B1H1510-BLK1	Lithium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00005	mg/L		
21H1362_B1H1510-BLK1	Magnesium dissolved	<0.0050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.005	mg/L		
21H1362_B1H1510-BLK1	Manganese dissolved	<0.000050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00005	mg/L		
21H1362_B1H1510-BLK1	Mercury dissolved	<0.000020	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00002	mg/L		
21H1362_B1H1510-BLK1	Molybdenum dissolved	<0.000010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00001	mg/L		
21H1362_B1H1510-BLK1	Nickel dissolved	<0.000040	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00004	mg/L		
21H1362_B1H1510-BLK1	Phosphorus dissolved	<0.010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.01	mg/L		
21H1362_B1H1510-BLK1	Potassium dissolved	<0.010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.01	mg/L		
21H1362_B1H1510-BLK1	Selenium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.0001	mg/L		
21H1362_B1H1510-BLK1	Silicon dissolved	<0.10	mg/L	F	metals	EPA 6020B	16-Aug-21	0.1	mg/L		
21H1362_B1H1510-BLK1	Silver dissolved	<0.000010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00001	mg/L		
21H1362_B1H1510-BLK1	Sodium dissolved	<0.020	mg/L	F	metals	EPA 6020B	16-Aug-21	0.02	mg/L		
21H1362_B1H1510-BLK1	Strontium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.0001	mg/L		
21H1362_B1H1510-BLK1	Sulfur dissolved	<1.00	mg/L	F	metals	EPA 6020B	16-Aug-21	1	mg/L		
21H1362_B1H1510-BLK1	Tellurium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00005	mg/L		
21H1362_B1H1510-BLK1	Thallium dissolved	<0.0000040	mg/L	F	metals	EPA 6020B	16-Aug-21	0.000004	mg/L		
21H1362_B1H1510-BLK1	Thorium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00001	mg/L		
21H1362_B1H1510-BLK1	Tin dissolved	<0.000050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00005	mg/L		
21H1362_B1H1510-BLK1	Titanium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	16-Aug-21	0.0002	mg/L		
21H1362_B1H1510-BLK1	Uranium dissolved	<0.0000010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.000001	mg/L		
21H1362_B1H1510-BLK1	Vanadium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	16-Aug-21	0.0002	mg/L		
21H1362_B1H1510-BLK1	Zinc dissolved	<0.0010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.001	mg/L		
21H1362_B1H1510-BLK1	Zirconium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00002	mg/L		
21H1362_B1H1510-BLK1	Tungsten dissolved	<0.20	ug/L	F	metals	EPA 6020B	16-Aug-21	0.2	ug/L		
21H1362_B1H1510-BLK2	Aluminum dissolved	<0.0010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.001	mg/L		
21H1362_B1H1510-BLK2	Antimony dissolved	<0.000050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00005	mg/L		
21H1362_B1H1510-BLK2	Arsenic dissolved	<0.000050	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00005	mg/L		
21H1362_B1H1510-BLK2	Barium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.0001	mg/L		
21H1362_B1H1510-BLK2	Beryllium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00001	mg/L		
21H1362_B1H1510-BLK2	Bismuth dissolved	<0.000010	mg/L	F	metals	EPA 6020B	16-Aug-21	0.00001	mg/L		
21H1362_B1H1510-BLK2	Boron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	16-Aug-21	0.002	mg/L		

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21H1362_B1H1510-BS1	Silicon dissolved	109	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Silver dissolved	98	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Sodium dissolved	114	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Strontium dissolved	94	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Sulfur dissolved	99	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Tellurium dissolved	108	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Thallium dissolved	97	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Thorium dissolved	94	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Tin dissolved	98	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Titanium dissolved	91	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Tungsten dissolved	99	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Uranium dissolved	97	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Vanadium dissolved	100	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Zinc dissolved	110	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS1	Zirconium dissolved	100	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Aluminum dissolved	118	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Antimony dissolved	98	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Arsenic dissolved	100	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Barium dissolved	101	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Beryllium dissolved	102	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Bismuth dissolved	101	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Boron dissolved	102	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Cadmium dissolved	100	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Calcium dissolved	101	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Chromium dissolved	101	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Cobalt dissolved	100	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Copper dissolved	99	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Iron dissolved	101	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Lead dissolved	110	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Lithium dissolved	98	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Magnesium dissolved	113	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Manganese dissolved	97	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Mercury dissolved	116	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Molybdenum dissolved	96	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Nickel dissolved	102	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Phosphorus dissolved	97	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Potassium dissolved	101	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Selenium dissolved	103	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Silicon dissolved	101	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Silver dissolved	98	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Sodium dissolved	110	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Strontium dissolved	95	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Sulfur dissolved	106	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Tellurium dissolved	108	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Thallium dissolved	97	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Thorium dissolved	95	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Tin dissolved	99	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Titanium dissolved	111	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Tungsten dissolved	98	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Uranium dissolved	97	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Vanadium dissolved	101	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Zinc dissolved	106	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-BS2	Zirconium dissolved	102	%	F	metals	EPA 6020B	16-Aug-21	1	%	120	80
21H1362_B1H1510-SRM1	Aluminum dissolved	107	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Antimony dissolved	112	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Arsenic dissolved	118	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Barium dissolved	100	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Beryllium dissolved	113	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Boron dissolved	109	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Cadmium dissolved	110	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Calcium dissolved	116	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Chromium dissolved	111	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Cobalt dissolved	114	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Copper dissolved	110	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Iron dissolved	114	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Lead dissolved	121	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Lithium dissolved	110	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Magnesium dissolved	128	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Manganese dissolved	107	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Molybdenum dissolved	110	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Nickel dissolved	113	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Phosphorus dissolved	105	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Potassium dissolved	121	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Selenium dissolved	128	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Sodium dissolved	129	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Strontium dissolved	102	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Thallium dissolved	108	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Uranium dissolved	106	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Vanadium dissolved	108	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM1	Zinc dissolved	114	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Aluminum dissolved	101	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Antimony dissolved	108	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Arsenic dissolved	112	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Barium dissolved	96	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Beryllium dissolved	110	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Boron dissolved	108	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Cadmium dissolved	107	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Calcium dissolved	111	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Chromium dissolved	107	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Cobalt dissolved	110	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Copper dissolved	106	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21G3912											
21H1362_B1H1510-SRM2	Iron dissolved	108	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Lead dissolved	118	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Lithium dissolved	106	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Magnesium dissolved	122	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Manganese dissolved	103	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Molybdenum dissolved	106	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Nickel dissolved	109	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Phosphorus dissolved	105	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Potassium dissolved	111	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Selenium dissolved	115	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Sodium dissolved	122	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Strontium dissolved	99	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Thallium dissolved	106	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Uranium dissolved	103	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Vanadium dissolved	104	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1510-SRM2	Zinc dissolved	111	%	F	metals	EPA 6020B	16-Aug-21	1	%	130	70
21H1362_B1H1538-BLK1	Phosphorus Total Dissolved	<0.0050	mg/L	F	General Par SM 4500-P F	(2 17-Aug-21		0.005	mg/L		
21H1362_B1H1538-BS1	Phosphorus Total Dissolved	109	%	F	General Par SM 4500-P F	(2 17-Aug-21		1	%	115	85
21H1362_B1H1679-BLK1	Phosphorus Total Dissolved	<0.0050	mg/L	F	General Par SM 4500-P F	(2 18-Aug-21		0.005	mg/L		
21H1362_B1H1679-BLK2	Phosphorus Total Dissolved	<0.0050	mg/L	F	General Par SM 4500-P F	(2 18-Aug-21		0.005	mg/L		
21H1362_B1H1679-BS1	Phosphorus Total Dissolved	111	%	F	General Par SM 4500-P F	(2 18-Aug-21		1	%	115	85
21H1362_B1H1679-BS2	Phosphorus Total Dissolved	111	%	F	General Par SM 4500-P F	(2 18-Aug-21		1	%	115	85

NOTES:

Job No: 21G3912; 21G3906; 21H0858; 21H1142; 21H1362; 21H1755

Abbreviations & Descriptions:

Method Blank (Blk): A blank sample that undergoes sample processing identical to that carried out for the test samples.

Method Blank results are used to assess contamination from the laboratory environment and reagents.

Duplicate (Dup): An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process.

Duplicates provide a measure of the analytical method's precision (reproducibility).

Blank Spike (BS): A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS).

Blank spikes provide a measure of the analytical method's accuracy.

Matrix Spike (MS): A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process.

Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.

Standard Reference Material (SRM): A homogenous material of similar matrix to the samples, certified for the parameter(s) listed.

Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples.

For all types of QC, specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

EQL = Estimated Quantitation Limits

PQL = Practical Quantitation Limits

UCL = Upper Control Limit

LCL = Lower Control Limit

BLK = Blank

BS = Blank Spike

MS = Matrix Spike

DUP = Duplicate

SRM = Standard Reference Materials



CERTIFICATE OF ANALYSIS - SAMPLE DETAILS

PAGE: 2 of 9

GLOBAL PROJECT NO: 1956 (B9)

CLIENT: First Mining Gold Corp.

PROJECT NAME: Springpole

PROJECT NO: ONS2104

REPORT VERSION: 3

Sample List:

S. No.	Sample ID	Sample Type	Condition	Wt. of Sample Rec'd (Kg)	Global Notes - if any
1	M112005	Core	Dry	4.10	
2	M112010	Core	Dry	4.85	
3	M112016	Core	Dry	3.70	
4	M112013	Core	Dry	3.55	
5	M112031	Core	Dry	3.90	
6	M112049	Core	Dry	4.60	
7	M112041	Core	Dry	4.05	
8	M112065	Core	Dry	4.50	
9	M112057	Core	Damp	4.05	
10	M112051	Core	Dry	6.40	
11	M112068	Core	Dry	4.75	
12	M112074	Core	Dry	4.50	
13	M112078	Core	Dry	5.60	
14	M112086	Core	Dry	3.95	
15	M112089	Core	Dry	6.30	
16	M112092	Core	Dry	4.10	
17	M112105	Core	Dry	4.15	
18	M112103	Core	Dry	4.30	
19	M112108	Core	Dry	4.70	
20	M112119	Core	Dry	4.15	
21	M112122	Core	Dry	4.30	
22	M112128	Core	Dry	4.35	
23	M112133	Core	Dry	3.90	
24	M112139	Core	Dry	4.00	
25	M112149	Core	Dry	4.15	
26	M112153	Core	Dry	4.10	
27	M112158	Core	Dry	4.05	
28	M112163	Core	Dry	4.00	

Sample Receipt Info:	
Date Samples Rec'd:	29-Jul-21
No. of Samples Rec'd:	28
Samples Rec'd By:	Andy

Analytical Instructions:	
From:	Anna Klein via email/COC confirmation
Date:	22-Jul-21

Total wt of sample rec'd (kg): 123.05

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon	Total Inorganic C	CaCO ₃ Equivalents ¹	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	Ap ³	STD Sobek NP	NNP ⁴	NPR ⁵
		Units:		wt.%	wt %	kg CaCO ₃ /tonne	wt.%	wt %	wt %		kg CaCO ₃ /tonne		
		Reported Detection Limit:		0.02	0.02	1.7	0.01	0.01	0.01	0.3	0.5		
1	M112005	9.1	Strong	1.97	1.74	145.0	0.15	0.03	0.12	3.8	180.6	176.9	48.2
2	M112010	9.2	Moderate	1.89	1.34	111.7	1.05	0.02	1.03	32.2	120.4	88.2	3.7
3	M112016	9.5	Moderate	1.87	1.56	130.0	0.02	0.02	<0.01	<0.3	144.6	144.6	N/A
4	M112013	8.4	Strong	1.8	1.71	142.5	4.34	<0.01	4.34	135.6	143.3	7.7	1.1
5	M112031	9.0	Moderate	2.02	1.44	120.0	1.29	<0.01	1.29	40.3	162.0	121.7	4.0
6	M112049	9.0	Strong	1.63	1.52	126.7	2.78	0.02	2.76	86.3	137.5	51.3	1.6
7	M112041	9.4	Strong	1.53	1.37	114.2	0.43	<0.01	0.43	13.4	125.9	112.5	9.4
8	M112065	9.4	Moderate	4.79	4.58	381.7	0.8	0.04	0.76	23.8	398.0	374.3	16.8
9	M112057	9.6	Moderate	2.25	1.76	146.7	0.03	0.03	<0.01	<0.3	161.0	161.0	N/A
10	M112051	9.5	Moderate	2.29	1.82	151.7	<0.01	<0.01	<0.01	<0.3	166.0	166.0	N/A
11	M112068	9.3	Moderate	4.34	4.24	353.3	0.41	0.02	0.39	12.2	384.1	371.9	31.5
12	M112074	8.8	Moderate	4.24	4.11	342.5	1.67	0.02	1.65	51.6	367.8	316.2	7.1
13	M112078	9.5	Moderate	2.41	1.86	155.0	1.03	0.03	1.00	31.3	168.5	137.3	5.4
14	M112086	9.1	Moderate	1.43	0.88	73.3	0.62	<0.01	0.62	19.4	107.7	88.3	5.6
15	M112089	9.1	Moderate	1.38	0.84	70.0	0.09	0.02	0.07	2.2	100.2	98.0	45.8
16	M112092	8.5	Moderate	1.16	0.77	64.2	1.93	0.02	1.91	59.7	81.1	21.4	1.4
17	M112105	9.3	Moderate	1.51	1.12	93.3	0.11	0.03	0.08	2.5	114.4	111.9	45.8
18	M112103	9.3	Moderate	1.54	1.04	86.7	0.09	0.02	0.07	2.2	112.8	110.6	51.6
19	M112108	9.2	Moderate	1.44	1.07	89.2	0.28	0.03	0.25	7.8	111.3	103.5	14.2
20	M112119	9.2	Strong	2.28	1.97	164.2	0.4	<0.01	0.40	12.5	177.0	164.5	14.2
21	M112122	9.1	Strong	1.6	1.51	125.8	0.48	<0.01	0.48	15.0	131.7	116.7	8.8
22	M112128	8.9	Strong	1.99	1.88	156.7	0.17	<0.01	0.17	5.3	162.4	157.1	30.6
23	M112133	8.9	Strong	2.31	2.17	180.8	0.63	<0.01	0.63	19.7	183.8	164.1	9.3
24	M112139	9.3	Moderate	1.74	1.22	101.7	<0.01	0.01	<0.01	<0.3	144.6	144.6	N/A
25	M112149	9.0	Moderate	1.18	0.92	76.7	0.48	<0.01	0.48	15.0	96.3	81.3	6.4
26	M112153	9.0	Moderate	0.88	0.56	46.7	0.83	<0.01	0.83	25.9	74.8	48.9	2.9
27	M112158	9.1	Moderate	1.47	0.96	80.0	0.25	<0.01	0.25	7.8	116.4	108.6	14.9
28	M112163	9.0	Moderate	1.01	0.64	53.3	0.53	<0.01	0.53	16.6	76.8	60.2	4.6

S. No.	Sample ID	Paste pH	Fizz Rating	Total Carbon wt.%	Total Inorganic Carbon wt %	CaCO ₃ Equivalents ^{*1} kg CaCO ₃ /tonne	Total Sulphur wt.%	Sulphate Sulphur wt %	Sulphide Sulphur wt %	AP ^{*3}	STD Sobek NP kg CaCO ₃ /tonne	NNP ^{*4}	NPR ^{*5}
		Units:											
		Reported Detection Limit:											
QUALITY ASSURANCE / QUALITY CONTROL													
Replicates:													
1	M112005			1.97			0.15						
1 R	M112005 (Rep)			1.94			0.14						
8	M112065										398.0		
8 R	M112065 (Rep)										433.2		
10	M112051	9.5	Moderate					<0.01			166.0		
10 R	M112051 (Rep)	9.6	Moderate					<0.01			166.0		
11	M112068										384.1		
11 R	M112068 (Rep)										420.7		
12	M112074										367.8		
12 R	M112074 (Rep)										371.5		
20	M112119	9.2	Strong					<0.01			177.0		
20 R	M112119 (Rep)	9.1	Strong					<0.01			178.2		
21	M112122			1.60			0.48						
21 R	M112122 (Rep)			1.61			0.48						
Certified Reference Material (CRM) Analysis:													
Certified Reference Material	KZK-1			KZK-1	Calcium Carbonate		KZK-1	RTS-3a	KZK-1		1) KZK-1 (Slight) 2) KZK-1 (Moderate)		
CRM True Value	8.80			0.95	12.00		0.80	1.10	0.37		1) 59.0 2) 64.8		
Reference Material Results				0.92			0.76	1.07			1) 57.9 2) N/A		
Tolerance (+/-) or Acceptance Range	0.09			90% - 110%	90% - 110%		90% - 110%	0.99 - 1.21	0.33 - 0.41		1) 2.8 2) 5.8		
Method Blank Analysis:													
Method Blank Results				<0.02	<0.02		<0.01	<0.01					
GLOBAL SOP No. / Method:	ARD-004	ARD-005	LECO	HCl leach/ CO ₂ -Coulometer	Calc.	LECO	ARD-013 (Seq. HCl/HNO ₃ leach)	Calc.	ARD-007	Calc.	Calc.		

NOTES:

Acceptance criteria at Global ARD Testing for all CRMs is ±10 % of certified value.

Job No:

Date of Analysis:

pH of DI water used:

EC of DI water used:

METHODS:

Total Sulphur by Leco.

Total Inorganic Carbon (TIC): HCl leach, evolved gas (CO₂) analysed by CO₂ Coulometer.

Surface Rinse-pH (1 to 107 minus 10 & 33): was conducted on < 2mm, sieved from 1/4" crushed homogenized material. Solid: liquid ration used = 1:1 (i.e. 25-30 g sample: 25-30 mL DI water).

Note: for samples received as pulps (#10, 33, 108-153) - no Rinse-pH was conducted. This is indicate as N/A (Not Applicable) in the report.

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 split of the original client sample received. A duplicate pulp sample is prepared only at client request)

NP = Neutralization Potential

Calc. = Calculation

NR = Not Received

CALCULATIONS:

*1 CaCO₃ Equivalents: based on TIC

*2 Non-Extractable Sulphur: Total sulphur - (sulphate sulphur + sulphide 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:

Surface Rinse-pH: MEND Report 1.20.1, Version 0 (2009).

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

ABA: Dried below 40°C (if received wet), jaw-crushed if necessary, split by riffing and pulverized to 85% passing 200 mesh (75 µm).

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

Sulphur Speciation: Modified ASTM D2492-02 Method. The S extracted is determined by analysing the extract for SO₄ using UV-Vis Spectrophotometer (STD Method 4500-SO42- E).

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.

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

PAGE: 4 of 9
 GLOBAL PROJECT NO: 1956 (B9)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

S. No.	Sample ID	Method Analyte Unit MDL Sample Type	IMS-130																									
			Silver (Ag) ppm 0.01	Aluminum (Al) % 0.01	Arsenic (As) ppm 0.1	Gold (Au) ppm 0.005	Boron (B) ppm 10	Barium (Ba) ppm 10	Beryllium (Be) ppm 0.05	Bismuth (Bi) ppm 0.01	Calcium (Ca) % 0.01	Cadmium (Cd) ppm 0.01	Cerium (Ce) ppm 0.02	Cobalt (Co) ppm 0.1	Chromium (Cr) ppm 1	Cesium (Cs) ppm 0.05	Copper (Cu) ppm 0.2	Iron (Fe) % 0.01	Gallium (Ga) ppm 0.05	Germanium (Ge) ppm 0.05	Hafnium (Hf) ppm 0.02	Mercury (Hg) ppm 0.01	Indium (In) ppm 0.005	Potassium (K) % 0.01	Lanthanum (La) ppm 0.2	Lithium (Li) ppm 0.1	Magnesium (Mg) % 0.01	Manganese (Mn) ppm 5
1	M112005	Pulp	0.12	1.5	397.9	0.0141	15	94	0.67	0.02	4.01	0.04	41.66	22.4	37	17.97	41.3	6.08	4.55	0.10	1.38	0.03	0.010	1.27	18.5	12.0	1.12	1107
2	M112010	Pulp	0.22	0.9	66.6	0.0241	11	51	0.65	0.10	3.55	0.17	38.22	24.8	23	9.16	52.2	5.16	2.73	0.09	0.94	0.04	0.010	0.74	17.0	5.8	0.96	1129
3	M112016	Pulp	0.05	1.8	166.6	0.0026	19	84	0.66	0.03	3.46	0.03	50.35	23.2	32	20.10	38.3	6.19	6.42	0.12	0.73	0.02	0.014	1.65	22.6	12.6	1.84	996
4	M112013	Pulp	0.43	0.3	403.7	0.2799	<10	34	0.28	0.06	5.33	0.17	21.81	29.7	30	0.53	40.6	4.52	1.33	0.07	1.17	0.06	0.013	0.28	9.6	3.0	0.27	1272
5	M112031	Pulp	1.58	0.6	61.7	1.4887	22	91	0.66	0.42	4.15	1.07	53.62	7.7	28	3.01	22.4	2.31	2.41	0.09	1.72	0.51	0.013	0.50	22.9	10.4	1.73	1926
6	M112049	Pulp	0.99	1.1	267.6	0.1896	22	166	0.53	0.04	4.77	0.33	68.95	30.6	28	10.76	49.9	5.01	6.38	0.09	1.92	0.20	0.018	1.08	52.2	23.3	0.95	1940
7	M112041	Pulp	0.11	0.3	26.8	0.0917	<10	95	0.70	0.44	3.69	0.15	69.77	5.3	37	0.79	17.2	1.26	1.61	0.10	0.52	0.16	0.005	0.28	29.9	2.7	0.72	745
8	M112065	Pulp	0.18	3.0	957.7	0.0378	14	105	1.69	0.02	6.99	0.17	5.25	77.6	351	64.97	38.1	8.79	6.84	0.13	0.55	0.05	0.023	2.34	2.2	30.4	6.43	3875
9	M112057	Pulp	0.12	2.0	25.1	0.0015	10	216	0.77	0.04	3.85	0.07	53.05	25.1	66	66.46	81.5	5.39	7.24	0.12	0.72	0.05	0.017	1.91	24.5	22.9	3.41	1273
10	M112051	Pulp	0.07	1.8	27.5	0.004	17	96	0.79	0.02	3.88	0.06	57.18	27.2	62	65.89	84.9	5.44	6.72	0.13	2.00	0.07	0.017	1.76	26.5	23.9	3.2	1435
11	M112068	Pulp	0.18	3.5	1086.1	0.0196	13	128	2.08	0.02	5.33	0.09	7.01	93.0	517	56.11	38.5	9.52	8.50	0.25	0.45	0.04	0.028	2.18	2.9	27.6	8.44	3045
12	M112074	Pulp	0.10	3.7	1040.9	0.0197	<10	42	0.68	0.01	6.41	0.06	6.79	81.8	530	21.75	30.8	8.50	8.38	0.28	0.36	0.02	0.025	0.55	3.9	25.1	8.03	1857
13	M112078	Pulp	0.20	3.4	531.6	0.0413	11	245	0.84	0.04	4.04	0.1	8.69	54.8	178	71.32	68.7	8.57	8.72	0.11	0.85	0.04	0.025	2.67	3.5	26.5	5.17	1776
14	M112086	Pulp	0.23	0.5	46.0	0.018	11	200	0.40	0.30	2.90	0.09	55.13	8.9	24	5.34	22.1	2.25	2.22	0.10	2.62	0.08	0.005	0.47	24.5	5.1	0.92	1164
15	M112089	Pulp	0.10	1.1	62.8	0.0006	11	115	0.67	0.06	3.06	0.08	59	13.6	26	7.89	19.5	4.35	3.32	0.11	0.68	0.03	0.009	0.93	26.5	8.4	0.65	1153
16	M112092	Pulp	0.13	0.7	126.5	0.0212	<10	51	0.43	0.08	2.61	0.1	31.61	27.8	37	5.63	50.0	5.09	2.92	0.08	0.80	0.06	0.009	0.61	14.1	3.7	0.52	1056
17	M112105	Pulp	0.12	2.1	1254.3	0.0113	17	86	0.66	0.04	2.76	0.04	46.51	23.2	32	21.37	46.6	6.28	6.29	0.13	0.40	0.02	0.013	1.83	20.7	13.1	1.88	1009
18	M112103	Pulp	0.06	1.7	716.2	0.0064	<10	90	0.66	0.04	2.83	0.09	55.39	20.2	27	16.82	41.2	5.33	5.70	0.06	0.23	0.02	0.013	1.46	24.1	10.5	1.5	863
19	M112108	Pulp	0.06	1.4	639.3	0.0162	<10	62	0.50	0.07	2.53	0.1	43.35	19.3	28	15.43	40.7	4.54	4.70	<0.05	0.84	0.02	0.013	1.20	19.0	9.3	1.47	800
20	M112119	Pulp	0.15	0.4	34.5	0.0499	<10	112	0.54	0.48	4.62	0.27	56.74	6.2	19	2.21	17.2	1.58	1.89	0.05	1.51	0.09	<0.005	0.37	24.3	6.0	1.4	1318
21	M112122	Pulp	0.43	0.5	43.7	0.1378	<10	70	0.53	0.43	4.01	0.69	57.62	5.0	25	3.11	23.4	1.17	1.99	0.05	1.54	0.36	0.006	0.41	25.7	6.5	0.71	1194
22	M112128	Pulp	0.12	0.6	30.8	0.0662	<10	110	0.67	0.50	5.15	0.11	64.83	3.8	21	6.40	15.1	1.10	2.64	0.06	2.41	0.10	0.007	0.55	29.2	11.6	0.95	802
23	M112133	Pulp	0.18	0.5	32.1	0.0998	<10	108	0.51	0.34	5.29	0.21	58.21	5.7	26	2.08	18.5	1.41	2.00	<0.05	1.78	0.09	<0.005	0.40	27.3	8.9	1.07	1352
24	M112139	Pulp	0.04	2.6	10.5	0.0471	<10	293	0.85	<0.01	3.03	0.13	57.31	27.9	73	48.51	8.8	5.68	9.61	0.07	0.46	0.01	0.020	2.38	26.5	19.7	3.52	1133
25	M112149	Pulp	0.33	0.6	31.1	0.0822	<10	100	0.59	0.34	2.67	0.12	76.65	5.1	23	3.95	19.8	1.48	2.50	0.06	0.86	0.07	<0.005	0.51	32.6	11.7	0.77	1633
26	M112153	Pulp	0.59	0.5	50.9	0.2128	<10	138	0.40	0.44	2.06	0.14	49.72	5.2	30	2.47	19.3	1.52	1.96	<0.05	1.12	0.11	<0.005	0.41	22.1	7.2	0.58	1159
27	M112158	Pulp	0.28	0.4	32.8	0.0255	<10	96	0.45	0.30	2.82	0.1	68.55	5.0	27	3.60	17.1	1.56	2.14	0.06	1.75	0.09	0.005	0.39	29.2	6.5	0.96	1700
28	M112163	Pulp	0.45	0.5	66.4	0.112	<10	123	0.49	0.41	2.23	0.06	57.57	5.0	23	4.19	22.4	1.40	2.08	0.05	1.44	0.08	<0.005	0.42	24.8	8.5	0.67	1629

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

S. No.	Sample ID	Method Analyte Unit MDL Sample Type	Molybdenum	Sodium	Niobium	Nickel	Phosphorous	Lead	Rubidium	Rhenium	Sulphur	Antimony	Scandium	Selenium	Tin	Strontium	Tantalum	Tellurium	Thorium	Titanium	Thallium	Uranium	Vandium	Tungsten	Yttrium	Zinc	Zirconium
			(Mo) ppm 0.05	(Na) % 0.01	(Nb) ppm 0.05	(Ni) ppm 0.2	(P) ppm 10	(Pb) ppm 0.2	(Rb) ppm 0.1	(Re) ppm 0.001	(S) % 0.01	(Sb) ppm 0.05	(Sc) ppm 0.1	(Se) ppm 0.2	(Sn) ppm 0.2	(Sr) ppm 0.2	(Ta) ppm 0.01	(Te) ppm 0.01	(Th) ppm 0.2	(Ti) % 0.005	(Tl) ppm 0.02	(U) ppm 0.05	(V) ppm 1	(W) ppm 0.05	(Y) ppm 0.05	(Zn) ppm 2	(Zr) ppm 0.5
1	M112005	Pulp	1.35	0.02	0.18	28.1	1313	3.6	162.0	<0.001	0.20	4.27	3.7	<0.2	0.3	186	<0.01	0.04	3	0.196	5.04	0.56	45	4.83	9.83	65	74.7
2	M112010	Pulp	2.49	0.01	0.23	22.2	1285	6.3	86.9	<0.001	1.13	9.65	2.7	<0.2	0.2	161.1	0.03	0.03	2.9	0.093	2.92	0.55	30	1.56	8.57	87	57.2
3	M112016	Pulp	0.68	0.02	0.17	34.9	1378	6.0	175.6	<0.001	0.06	2.99	5.1	<0.2	0.4	151	<0.01	0.02	3.4	0.282	4.89	0.54	57	1.21	9.24	107	53.4
4	M112013	Pulp	15.33	<0.01	0.12	52.6	1175	10.1	15.5	<0.001	4.44	7.73	1.8	0.4	<0.2	171.9	<0.01	0.03	1.6	0.03	0.33	0.5	12	7.19	9.57	22	51.3
5	M112031	Pulp	35.00	0.02	0.13	14.5	1379	70.7	41.2	<0.001	1.53	9.39	0.9	1	<0.2	370.7	<0.01	0.48	6	0.016	1.01	4.91	16	1.16	8.67	219	105.0
6	M112049	Pulp	20.98	0.02	0.48	32.8	1397	23.1	133.1	0.003	2.92	8.00	5.8	<0.2	0.3	416.6	<0.01	0.08	2.1	0.175	3.91	0.87	65	21.14	12.75	114	76.3
7	M112041	Pulp	0.65	0.03	<0.05	8.2	1389	20.7	16.6	<0.001	0.55	4.97	0.9	<0.2	<0.2	393.4	<0.01	0.06	6.7	0.007	0.31	4.11	5	0.44	8.55	63	36.1
8	M112065	Pulp	2.12	0.02	<0.05	403.6	371	8.2	202.6	<0.001	0.96	6.53	10.4	1.1	0.2	262	<0.01	0.25	0.3	0.302	4.7	0.2	86	0.66	3.76	123	22.0
9	M112057	Pulp	0.49	0.04	0.07	22.3	1220	5.6	188.1	<0.001	0.07	2.92	8.3	<0.2	0.3	564.8	<0.01	0.04	4.6	0.274	4.29	0.9	90	0.44	8.47	78	50.9
10	M112051	Pulp	0.23	0.03	0.06	22.0	1252	4.5	193.0	<0.001	0.04	2.68	7.7	<0.2	0.3	439.7	<0.01	0.04	4.7	0.256	4.68	0.89	85	0.55	8.76	87	80.9
11	M112068	Pulp	1.60	0.02	<0.05	498.3	374	5.4	182.2	<0.001	0.48	2.65	13.3	0.6	0.3	207.8	<0.01	0.13	0.3	0.288	4.06	0.15	104	2.48	3.53	124	17.7
12	M112074	Pulp	3.46	<0.01	<0.05	475.1	385	5.9	50.5	<0.001	1.77	3.59	13.2	0.3	<0.2	513.7	<0.01	0.11	<0.2	0.079	1.22	0.08	103	0.10	3.39	78	14.4
13	M112078	Pulp	0.71	0.03	<0.05	194.6	556	8.9	244.4	<0.001	1.21	3.29	12.5	0.2	0.3	357.8	<0.01	0.09	0.6	0.389	5.86	0.23	118	0.38	3.75	140	35.3
14	M112086	Pulp	1.55	0.04	0.14	17.4	616	30.1	46.0	<0.001	0.70	4.11	1.2	<0.2	<0.2	209.8	<0.01	0.06	5.4	0.049	1.2	2.64	13	0.32	7.87	54	110.7
15	M112089	Pulp	3.50	0.02	0.24	19.2	946	4.6	85.5	<0.001	0.15	5.84	2.3	<0.2	0.2	164.9	<0.01	0.03	4.3	0.132	2.48	1.18	16	9.54	13.02	64	61.8
16	M112092	Pulp	6.00	0.01	0.26	52.4	1397	7.2	58.7	<0.001	1.94	7.18	2.7	<0.2	<0.2	115.8	<0.01	0.04	2.5	0.096	1.8	0.61	36	17.67	8.00	81	50.1
17	M112105	Pulp	1.23	0.02	0.14	28.4	1416	4.8	158.7	<0.001	0.16	4.98	5.1	<0.2	0.4	173.6	<0.01	0.01	3.5	0.294	3.54	0.55	62	1.07	8.47	106	35.8
18	M112103	Pulp	0.71	0.02	0.13	29.5	1555	4.8	132.7	<0.001	0.14	5.31	4	<0.2	0.4	209.2	0.03	0.02	4	0.219	2.95	0.59	41	1.28	9.42	100	23.8
19	M112108	Pulp	0.62	0.03	0.12	18.3	1166	5.0	106.6	<0.001	0.33	6.23	3.6	<0.2	0.3	172	<0.01	0.02	2.9	0.176	2.35	0.43	41	1.16	7.29	77	49.3
20	M112119	Pulp	0.48	0.02	0.07	9.0	1183	50.0	29.9	<0.001	0.48	7.70	0.7	<0.2	<0.2	477.5	<0.01	0.04	5.8	0.011	0.57	3.77	6	0.35	8.16	67	91.8
21	M112122	Pulp	1.99	0.02	0.07	6.9	1227	39.2	33.2	<0.001	0.58	6.26	0.7	<0.2	<0.2	402	<0.01	0.15	6	0.012	0.65	3.98	7	0.35	8.23	214	95.1
22	M112128	Pulp	1.50	0.02	0.11	5.3	1225	18.1	56.5	<0.001	0.23	4.44	0.8	<0.2	<0.2	694.2	<0.01	0.09	6.1	0.023	1.08	3.73	8	0.38	8.69	42	126.6
23	M112133	Pulp	2.85	0.02	0.07	9.7	1161	34.7	29.0	<0.001	0.70	11.85	0.7	<0.2	0.2	438.7	<0.01	0.05	5.6	0.01	0.46	3.81	6	0.37	8.09	57	106.7
24	M112139	Pulp	0.12	0.03	<0.05	27.0	1233	5.7	239.2	<0.001	0.04	1.70	8.6	<0.2	0.4	689.8	<0.01	0.06	4.8	0.299	5.22	0.86	90	0.42	8.18	81	36.3
25	M112149	Pulp	1.61	0.02	0.08	8.8	1348	22.4	41.1	<0.001	0.56	5.61	0.9	<0.2	<0.2	335.8	<0.01	0.11	9.1	0.019	0.79	5.06	7	1.33	9.96	46	85.5
26	M112153	Pulp	2.20	0.02	0.05	9.0	1315	43.7	29.2	<0.001	0.93	5.78	0.9	0.3	<0.2	316.3	<0.01	0.18	6.7	0.012	0.55	4.91	8	1.19	9.09	53	91.0
27	M112158	Pulp	0.46	0.02	0.05	13.0	1307	22.8	33.2	<0.001	0.32	4.03	0.9	<0.2	<0.2	365.7	<0.01	0.08	6.6	0.016	0.65	3.81	8	0.91	8.51	43	100.7
28	M112163	Pulp	1.47	0.02	0.07	9.3	1304	26.7	37.0	<0.001	0.62	4.86	0.8	0.3	<0.2	309.8	<0.01	0.2	6.8	0.014	0.73	4.2	7	1.58	8.88	32	98.8

S. No.	Sample ID	Method Analyte Unit MDL Sample Type	IMS-130																											
			Silver (Ag) ppm 0.01	Aluminum (Al) % 0.01	Arsenic (As) ppm 0.1	Gold (Au) ppm 0.005	Boron (B) ppm 10	Barium (Ba) ppm 10	Beryllium (Be) ppm 0.05	Bismuth (Bi) ppm 0.01	Calcium (Ca) % 0.01	Cadmium (Cd) ppm 0.01	Cerium (Ce) ppm 0.02	Cobalt (Co) ppm 0.1	Chromium (Cr) ppm 1	Cesium (Cs) ppm 0.05	Copper (Cu) ppm 0.2	Iron (Fe) % 0.01	Gallium (Ga) ppm 0.05	Germanium (Ge) ppm 0.05	Hafnium (Hf) ppm 0.02	Mercury (Hg) ppm 0.01	Indium (In) ppm 0.005	Potassium (K) % 0.01	Lanthanum (La) ppm 0.2	Lithium (Li) ppm 0.1	Magnesium (Mg) % 0.01	Manganese (Mn) ppm 5		
QUALITY ASSURANCE / QUALITY CONTROL																														
Pulp Replicates:																														
22	M112128	Pulp	0.12	0.58	30.8	0.066	<10	110	0.67	0.5	5.15	0.11	64.83	3.8	21	6.40	15.1	1.10	2.64	0.06	2.41	0.10	0.007	0.55	29.2	11.6	0.95	802		
22 R	M112128	Pulp-Rep	0.08	0.55	30.7	0.078	<10	106	0.61	0.49	5.00	0.09	61.88	3.9	20	6.22	14.7	1.08	2.56	0.05	2.57	0.09	<0.005	0.52	28.2	11.4	0.92	779		
Certified Reference Material:																														
STD OREAS 601			49.39	0.880	311.7	0.754	<10	101	0.63	20.24	1.10	7.82	44.2	4.80	46.0	1.93	1025.0	2.30	5.09	0.07	0.68	0.299	1.625	0.270	20.8	7.60	0.200	452		
True Value STD OREAS 601			49.40	0.826	305.0	0.774	<10	2714	0.62	20.60	1.07	7.81	44.8	4.70	44.2	1.98	1010.0	2.20	5.17	<0.1	<1	<3	1.680	0.251	21.2	7.95	0.195	450		
% Difference			0.0	6.5	2.2	-2.6		-96.3	1.6	-1.7	2.8	0.1	-1.3	2.1	4.1	-2.5	1.5	4.5	-1.5				-3.3	7.6	-1.9	-4.4	2.6	0.4		
Tolerance (%)			2.60	0.054	15.0	0.025	IND	NR	0.10	1.50	0.05	0.48	2.4	0.27	7.4	0.15	40.0	0.11	0.28	NR	IND	IND	0.10	0.021	1.50	0.76	0.016	20.0		
Method Blank:																														
Method Blank			<0.01	<0.01	<0.1	<0.0005	<10	<10	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.02	<0.005	<0.005	<0.01	<0.2	<0.1	<0.01	<5

NOTES:

Job No: YVR2110802

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 Certified 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).

S. No.	Sample ID	Method Analyte Unit MDL Sample Type	Molybdenum (Mo) ppm 0.05	Sodium (Na) % 0.01	Niobium (Nb) ppm 0.05	Nickel (Ni) ppm 0.2	Phosphorous (P) ppm 10	Lead (Pb) ppm 0.2	Rubidium (Rb) ppm 0.1	Rhenium (Re) ppm 0.001	Sulphur (S) % 0.01	Antimony (Sb) ppm 0.05	Scandium (Sc) ppm 0.1	Selenium (Se) ppm 0.2	Tin (Sn) ppm 0.2	Strontium (Sr) ppm 0.2	Tantalum (Ta) ppm 0.01	Tellurium (Te) ppm 0.01	Thorium (Th) ppm 0.2	Titanium (Ti) % 0.005	Thallium (Tl) ppm 0.02	Uranium (U) ppm 0.05	Vandium (V) ppm 1	Tungsten (W) ppm 0.05	Yttrium (Y) ppm 0.05	Zinc (Zn) ppm 2	Zirconium (Zr) ppm 0.5
QUALITY ASSURANCE / QUALITY CONTROL																											
<i>Pulp Replicates:</i>																											
22	M112128	Pulp	1.50	0.02	0.11	5.3	1225	18.1	56.5	<0.001	0.23	4.44	0.8	<0.2	<0.2	694.2	<0.01	0.09	6.1	0.023	1.08	3.73	8	0.38	8.69	42	126.6
22 R	M112128	Pulp-Rep	1.46	0.02	0.10	5.3	1183	17.0	54.6	<0.001	0.24	4.31	0.8	<0.2	<0.2	682.7	<0.01	0.09	6.0	0.022	1.04	3.6	8	0.36	8.48	39	130.4
<i>Certified Reference Material:</i>																											
STD OREAS 601																											
True Value STD OREAS 601																											
-0.8																											
0.0																											
Tolerance (%)																											
0.95																											
IND																											
IND																											
3.80																											
40.0																											
16.0																											
1.3																											
NR																											
0.06																											
2.30																											
0.19																											
1.1																											
0.21																											
2.1																											
NR																											
1.80																											
0.42																											
IND																											
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1.42																											
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0.40																											
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2.1																											
<i>Method Blank:</i>																											
Method Blank																											
<0.05																											
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<0.5																											

CERTIFICATE OF ANALYSIS - SINGLE ADDITION NAG RESULTS (EGi Method)



PAGE: 5 of 9
 GLOBAL PROJECT NO: 1956 (B9)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

S. No:	Sample ID	Pulp Sample Weight (g)	Vol. of 15% H ₂ O ₂ (mL)	NAG pH (pH Units)	NaOH to pH 4.5 (mL)	NaOH to pH 7.0 (mL)	NaOH Conc. (N)	NAG Acidity pH 4.5 (kg H ₂ SO ₄ /tonne)	NAG Acidity pH 7.0 (kg H ₂ SO ₄ /tonne)	% RPD		
										to pH 4.5	to pH 7.0	Acceptance Criteria
2	M112010	2.5	250	7.99	0.00	0.00	0.1	0.0	0.0			
8	M112065	2.5	250	7.86	0.00	0.00	0.1	0.0	0.0			
11	M112068	2.5	250	8.34	0.00	0.00	0.1	0.0	0.0			
14	M112086	2.5	250	7.95	0.00	0.00	0.1	0.0	0.0			
15	M112089	2.5	250	8.27	0.00	0.00	0.1	0.0	0.0			
17	M112105	2.5	250	8.12	0.00	0.00	0.1	0.0	0.0			
20	M112119	2.5	250	8.04	0.00	0.00	0.1	0.0	0.0			
23	M112133	2.5	250	8.09	0.00	0.00	0.1	0.0	0.0			
28	M112163	2.5	250	8.14	0.00	0.00	0.1	0.0	0.0			
QAQC:												
Replicates:												
28	M112163	2.5	250	8.14	0.00	0.00	0.1	0.0	0.0	0%	0%	10%
28 R	M112163 (Rep)	2.5	250	8.20	0.00	0.00	0.1	0.0	0.0			
Method Blank Analysis:												
	Method Blank (15% H ₂ O ₂ Solution)	N/A	250	5.45	0.00	8.40	0.1					
GLOBAL SOP NO:							ARD-017					

NOTES:

Date of Analysis: Aug 10 - 12, 2021

pH (pH Units) of DI water used to prepare 15% H₂O₂: 5.60

EC (µS/cm) of DI water used to prepare 15% H₂O₂: 0.54

pH (pH Units) of 15% H₂O₂ (buffered with 0.5 N NaOH): 5.45

EC (µS/cm) of 15% H₂O₂ (buffered with 0.5 N NaOH): 13.50

Solid:Liquid ratio used: 1:100; 2.5 g Pulp Sample: 250 mL 15% H₂O₂.

pH measurement of 15% H₂O₂ solution was conducted at room temperature & buffered with 0.5N NaOH solution to ensure a pH between 4 and 7.

NAG pH & method blank pH measurements were taken after digesting with peroxide solution and making up the solution to its original volume of 250 mL with DI water.

On client's request the NAG procedure is repeated using 1 g of pulp sample when the NAG value for pH 4.5 exceeds 25 kg H₂SO₄ per tonne.

ABBREVIATIONS:

R = Replicate (i.e. using a pulp sample from the same bag).

D = Duplicate (i.e. client sample is processed to produced a 2nd pulp bag & analyzed as a duplicate).

RPD = Relative Percent Difference.

Calc. = Calculation

REFERENCE:

Egi - Environmental Geochemistry International; Single Addition Net Acid Generation (NAG) Test Procedure; Miller et al; Revised Dec. 2006; Page 2 to 4.

CERTIFICATE OF ANALYSIS - SINGLE ADDITION NAG EXTRACT RESULTS



PAGE: 6 of 9
 GLOBAL PROJECT NO: 1956 (B9)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

Parameter	Method	Unit	RDL	2	28	Method Blank
				M112010	M112163	
Weight of pulp sample used	Weighing Scale	g	0.01	2.5	2.5	N/A
Volume of 15% H ₂ O ₂ used	Graduated Cylinder	mL	0.50	250	250	250
On filtered samples (using 0.45 µm filter paper):						
pH	Meter	pH units	0.01			
EC	Meter	mV	1.0			
Acidity (to pH 8.3)	Titration	mg CaCO ₃ /L	0.5			
Total Alkalinity (to pH 4.5)	Titration	mg CaCO ₃ /L	0.5			
Sulphate	Colourimetry	mg/L	0.5			
Phosphorus Dissolved	IC	mg/L	0.0050			
Dissolved Metals Analysis by ICP-MS:						
Dissolved Hardness (CaCO ₃)	ICP-MS	mg/L	0.5			
Aluminum Dissolved	ICP-MS	mg/L	0.001			
Antimony Dissolved	ICP-MS	mg/L	0.0001			
Arsenic Dissolved	ICP-MS	mg/L	0.0002			
Barium Dissolved	ICP-MS	mg/L	0.0002			
Beryllium Dissolved	ICP-MS	mg/L	0.0001			
Bismuth Dissolved	ICP-MS	mg/L	0.0001			
Boron Dissolved	ICP-MS	mg/L	0.01			
Cadmium Dissolved	ICP-MS	mg/L	0.00001			
Calcium Dissolved	ICP-MS	mg/L	0.05			
Chromium Dissolved	ICP-MS	mg/L	0.0005			
Cobalt Dissolved	ICP-MS	mg/L	0.0001			
Copper Dissolved	ICP-MS	mg/L	0.0005			
Iron Dissolved	ICP-MS	mg/L	0.02			
Lead Dissolved	ICP-MS	mg/L	0.0005			
Lithium Dissolved	ICP-MS	mg/L	0.0005			
Magnesium Dissolved	ICP-MS	mg/L	0.05			
Manganese Dissolved	ICP-MS	mg/L	0.0002			
Mercury Dissolved	ICP-MS	mg/L	0.0005			
Molybdenum Dissolved	ICP-MS	mg/L	0.0005			
Nickel Dissolved	ICP-MS	mg/L	0.0005			
Phosphorus Dissolved	ICP-MS	mg/L	0.05			
Potassium Dissolved	ICP-MS	mg/L	0.05			
Selenium Dissolved	ICP-MS	mg/L	0.0005			
Silicon Dissolved	ICP-MS	mg/L	0.05			
Silver Dissolved	ICP-MS	mg/L	0.00008			
Sodium Dissolved	ICP-MS	mg/L	0.02			
Strontium Dissolved	ICP-MS	mg/L	0.0002			
Sulphur Dissolved	ICP-MS	mg/L	0.5			
Tellurium Dissolved	ICP-MS	mg/L	0.0002			
Thallium Dissolved	ICP-MS	mg/L	0.00005			
Thorium Dissolved	ICP-MS	mg/L	0.0001			
Tin Dissolved	ICP-MS	mg/L	0.0005			
Titanium Dissolved	ICP-MS	mg/L	0.0005			
Tungsten Dissolved	ICP-MS	mg/L	0.0001			
Uranium Dissolved	ICP-MS	mg/L	0.00005			
Vanadium Dissolved	ICP-MS	mg/L	0.001			
Zinc Dissolved	ICP-MS	mg/L	0.001			
Zirconium Dissolved	ICP-MS	mg/L	0.0001			
Ion Balance:						
Major Anions	Calc.	meq/L		0.00	0.00	
Major Cations	Calc.	meq/L		1000.00	1000.00	
Difference	Calc.	meq/L		1000.00	1000.00	
Balance (%)	Calc.	%		100.0%	100.0%	
NAG Extract ID:				2872112	2872113	2872127

NOTES:

Job No:
 Date of Analysis: August 31, 2021
 All sample reacted slowly to completion.
 pH (pH Units) of DI water used to prepare 15% H₂O₂: 5.64
 EC (µS/cm) of DI water used to prepare 15% H₂O₂: 0.27
 pH (pH Units) of 15% H₂O₂ (buffered with 0.5 N NaOH): 5.54
 EC (µS/cm) of 15% H₂O₂ (buffered with 0.5 N NaOH): 8.1
 Solid:Liquid ratio used: 1:100; 2.5 g Pulp Sample: 250 mL 15% H₂O₂.
 pH measurement of 15% H₂O₂ solution was conducted at room temperature & buffered with 0.5N NaOH solution to ensure a pH between 4 and 7.
 NAG pH & method blank pH measurements were taken after digestion with peroxide solution was completed - and volume was made up to original 250 mL with DI water.
 On client's request the NAG procedure is repeated using 1 g of pulp sample when the NAG value for pH 4.5 exceeds 25 kg H₂SO₄ per tonne.

ABBREVIATIONS:

R / Rep = Replicate (which involves the analysis of the same NAG extract aliquot).
 D / Dup = Duplicate (which involves the analysis of a separate NAG extract, produced by digesting another split of the pulp sample).
 EC = Electrical Conductivity
 ORP = Oxidation Reduction Potential
 RDL = Reportable Detection Limit.
 SIE = Selective Ion Electrode
 IC = Ion Chromatography
 Calc. = Calculation

REFERENCE:

Egi - Environmental Geochemistry International; Single Addition Net Acid Generation (NAG) Test Procedure; Miller et al; Revised Dec. 2006; Page 2 to 4.



CERTIFICATE OF ANALYSIS - NAG EXTRACT QA/QC RESULTS

PAGE: 7 of 9
 GLOBAL PROJECT NO: 1956 (B9)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

Phosphorous QA/QC

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
WO-21H1361											

Dissolved Metals by ICP-MS:

Parameter	Batch	Sample ID	Dup #1	Dup #2	RPD	Method Blank	Reference Material	Lower	Upper	Method Blank Spike	Lower	Upper
NAG Extract - Dissolved Metals:												

NOTES:

Job No:
 Greyed data does not belong to this report.
 RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Abbreviations & Descriptions:

Method Blank (Blk): A blank sample that undergoes sample processing identical to that carried out for the test samples. Method Blank results are used to assess contamination from the laboratory environment and reagents.

Duplicate (Dup): An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).

Blank Spike (BS): A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.

Matrix Spike (MS): A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.

Standard Reference Material (SRM): A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples.

For all types of QC, specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

EQL = Estimated Quantitation Limits
 PQL = Practical Quantitation Limits
 UCL = Upper Control Limit
 LCL = Lower Control Limit
 BLK = Blank
 BS = Blank Spike
 MS = Matrix Spike
 DUP = Duplicate
 SRM = Standard Reference Materials

CERTIFICATE OF ANALYSIS - MEND-SHAKE FLASK EXTRACTION RESULTS



PAGE: 8 of 9
 GLOBAL PROJECT NO: 1956 (B9)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: CNS2104
 REPORT VERSION: 3

Parameter	Method	Unit	RDL	Sample ID																Method Blank																		
				1		1R		2		3		5		8		10		11			12		14		15		15D		17		20		23		26		28	
				M112005	M112005 (Rep)	M112010	M112016	M112031	M112065	M112051	M112068	M112074	M112086	M112089	M112089 (Dup)	M112105	M112119	M112133	M112153		M112163																	
Weight of dry sample used	Weighing Scale	g	0.01	250		250	250	250	250	250	250	250	250	250	250	250	250	250	250	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	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750			
On filtered samples (using 0.45 µm filter paper):																																						
pH	Meter	pH units	0.01	6.9		6.9	7.0	6.8	6.8	6.9	6.8	6.7	6.9	7.2	7.1	6.9	7.0	7.1	6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9		
EC	Meter	mV	1.0	86		86	71	82	74	83	67	87	82	71	85	66	79	72	84	70	72	84	70	72	84	70	72	84	70	72	84	70	72	84	70	72		
Acidity (to pH 8.3)	Titration	mg CaCO ₃ /L	0.5	3.3		4.8	3.2	3.5	3.9	2.7	2.9	3.7	3.6	1.7	3.8	2.8	3.0	2.4	2.4	3.1	2.5	3.1	2.5	3.1	2.5	3.1	2.5	3.1	2.5	3.1	2.5	3.1	2.5	3.1	2.5	3.1		
Total Alkalinity (to pH 4.5)	Titration	mg CaCO ₃ /L	0.5	34.3		38.9	37.1	27.3	33.8	33.2	28.7	29.0	30.6	36.1	42.4	32.6	33.0	31.8	25.6	26.9	29.0	31.8	25.6	26.9	29.0	31.8	25.6	26.9	29.0	31.8	25.6	26.9	29.0	31.8	25.6	26.9	29.0	
Sulphate	Colourimetry	mg/L	0.5	6.7		7.1	5.5	8.0	7.1	6.4	8.9	7.7	9.2	6.7	6.5	8.7	7.3	7.3	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	
Phosphorous	IC	mg/L	0.0050	<0.0050		0.0064	0.0077	0.0076	0.0342	0.0082	0.0411	0.0224	0.0091	0.0076	0.0064	0.0115	0.0097	0.0098	0.0107	0.0116																		
Dissolved Metals Analysis by ICP-MS:																																						
Dissolved Hardness (CaCO ₃)	ICP-MS	mg/L	0.1	29.5		30.9	25.5	30.3	29.6	21.2	23.7	30.0	28.3	27.0	30.2	22.8	28.1	28.6	24.0	24.7																		
Aluminum Dissolved	ICP-MS	mg/L	0.001	0.414		0.402	0.351	0.42	0.276	0.134	0.357	0.13	0.118	0.328	0.464	0.41	0.395	0.38	0.42	0.357																		
Antimony Dissolved	ICP-MS	mg/L	0.00005	0.00418		0.00404	0.0182	0.013	0.0131	0.0391	0.00285	0.0103	0.0101	0.0358	0.0021	0.00838	0.0385	0.0442	0.053	0.0184																		
Arsenic Dissolved	ICP-MS	mg/L	0.00005	0.00858		0.00849	0.00149	0.0116	0.00847	0.256	0.00504	0.247	0.128	0.024	0.00447	0.00449	0.0305	0.0279	0.0255	0.0188																		
Barium Dissolved	ICP-MS	mg/L	0.0001	0.00269		0.00256	0.00215	0.00312	0.00799	0.00314	0.00232	0.00405	0.00543	0.0028	0.0029	0.00264	0.00244	0.0208	0.0211	0.0273																		
Beryllium Dissolved	ICP-MS	mg/L	0.00001	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	0.000011	<0.000010	<0.000010	<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	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010																		
Cadmium Dissolved	ICP-MS	mg/L	0.005	0.0065		0.0066	0.0051	<0.0050	0.0067	<0.0050	0.0084	<0.0050	0.0077	<0.0050	0.0062	<0.0050	<0.0050	<0.0050	<0.0050	0.0064																		
Calcium Dissolved	ICP-MS	mg/L	0.04	8.8		8.5	6.6	8.1	6.6	5.0	5.3	6.6	7.7	8.4	9.3	5.6	7.4	8.4	7.4	7.2																		
Chromium Dissolved	ICP-MS	mg/L	0.0001	<0.00010		<0.00010	<0.00010	<0.00010	0.0002	<0.00010	0.0002	0.0003	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010																		
Cobalt Dissolved	ICP-MS	mg/L	0.000005	0.0000305		0.0000293	0.0000411	0.0000489	0.000023	0.0000164	0.000125	0.0000603	0.0000344	0.0000304	0.0000374	0.0000456	0.0000163	0.0000158	0.0000301	0.000032																		
Copper Dissolved	ICP-MS	mg/L	0.0001	0.0039		0.00398	0.00339	0.00335	0.004	0.0034	0.00225	0.0026	0.00037	0.00013	0.0014	0.0003	0.00016	0.00024	0.00023	0.00024																		
Iron Dissolved	ICP-MS	mg/L	0.002	0.0076		0.0068	0.0024	0.0053	<0.0020	<0.0020	0.0038	<0.0020	<0.0020	0.0028	0.0078	0.0052	0.0084	<0.0020	<0.0020	<0.0020																		
Lead Dissolved	ICP-MS	mg/L	0.00005	<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																		
Lithium Dissolved	ICP-MS	mg/L	0.0005	0.0025		0.0026	0.0022	0.0021	0.0019	0.0017	0.0029	0.0008	0.0003	0.002	0.0017	0.0025	0.0020	0.0022	0.0021	0.0025																		
Magnesium Dissolved	ICP-MS	mg/L	0.005	1.8		1.8	2.4	2.2	2.5	3.2	2.1	2.5	3.3	2.2	1.4	1.7	2.1	2.3	1.9	1.3																		
Manganese Dissolved	ICP-MS	mg/L	0.00005	0.014		0.0137	0.0216	0.0108	0.0221	0.0154	0.00846	0.00809	0.00624	0.0254	0.0203	0.0258	0.0174	0.0146	0.0168	0.0513																		
Mercury Dissolved	CVAF	mg/L	0.00001	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010																		
Molybdenum Dissolved	ICP-MS	mg/L	0.00001	0.000828		0.000766	0.00246	0.00386	0.0282	0.00125	0.00136	0.000386	0.00032	0.000527	0.00162	0.00227	0.000636	0.000186	0.0011	0.00112																		
Nickel Dissolved	ICP-MS	mg/L	0.00004	0.000118		0.000139	0.00017	0.00014	0.000225	0.000309	0.000213	0.000193	0.000217	0.0003	0.000122	0.000157	0.000161	0.000135	0.000199	0.000223																		
Phosphorus Dissolved	ICP-MS	mg/L	0.01	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010																		
Potassium Dissolved	ICP-MS	mg/L	0.01	0.01		0.96	9.86	9.59	5.46	6.87	8.18	7.97	3.17	5.95	5.92	10	7.86	7.43	4.67	3.4																		
Selenium Dissolved	ICP-MS	mg/L	0.0001	0.0001		<0.00010	0.00014	<0.00010	0.00182	0.00076	0.00025	0.00031	<0.00010	0.00011	0.0001	<0.00010	<0.00010	0.00013	0.00013	0.00025																		
Silicon Dissolved	ICP-MS	mg/L	0.1	0.88		0.92	0.88	0.98	0.86	0.7	1.17	0.58	0.55	0.96	1.01	1.13	0.98	1.09	1.14	1.01																		
Silver Dissolved	ICP-MS	mg/L	0.00001	0.00001		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010																		
Sodium Dissolved	ICP-MS	mg/L	0.02	0.896		0.883	0.441	0.531	0.567	0.23	0.868	0.385	0.291	2.16	0.476	0.622	0.573	1.04	0.801	1.03																		
Strontium Dissolved	ICP-MS	mg/L	0.0001	0.0391		0.0382	0.0318	0.0283	0.116	0.048</																												

CERTIFICATE OF ANALYSIS - MEND-SFE QA/QC RESULTS



PAGE: 9 of 9
 GLOBAL PROJECT NO: 1956 (B9)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

Sulphate:

Certified Reference Material:	Parameter: Sulphate	% Recovery	Matrix Spike %	Units	QC Limits (%)
STD Mineral Water (28.5 mg/L)	27.90	97.9%		%	80 - 120
Spiked Blank (19.61 mg/L)	22.20		113.2%	%	80 - 120

Dissolved Metals by ICP-MS:

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
21H2282_B1H2309-BLK1	Aluminum dissolved	<0.0010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.001	mg/L		
21H2282_B1H2309-BLK1	Antimony dissolved	<0.000050	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00005	mg/L		
21H2282_B1H2309-BLK1	Arsenic dissolved	<0.000050	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00005	mg/L		
21H2282_B1H2309-BLK1	Barium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.0001	mg/L		
21H2282_B1H2309-BLK1	Beryllium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00001	mg/L		
21H2282_B1H2309-BLK1	Bismuth dissolved	<0.000010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00001	mg/L		
21H2282_B1H2309-BLK1	Boron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	24-Aug-21	0.002	mg/L		
21H2282_B1H2309-BLK1	Cadmium dissolved	<0.0000020	mg/L	F	metals	EPA 6020B	24-Aug-21	0.000002	mg/L		
21H2282_B1H2309-BLK1	Calcium dissolved	<0.040	mg/L	F	metals	EPA 6020B	24-Aug-21	0.04	mg/L		
21H2282_B1H2309-BLK1	Chromium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.0001	mg/L		
21H2282_B1H2309-BLK1	Cobalt dissolved	<0.0000050	mg/L	F	metals	EPA 6020B	24-Aug-21	0.000005	mg/L		
21H2282_B1H2309-BLK1	Copper dissolved	<0.00010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.0001	mg/L		
21H2282_B1H2309-BLK1	Iron dissolved	<0.0020	mg/L	F	metals	EPA 6020B	24-Aug-21	0.002	mg/L		
21H2282_B1H2309-BLK1	Lead dissolved	<0.000050	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00005	mg/L		
21H2282_B1H2309-BLK1	Lithium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00005	mg/L		
21H2282_B1H2309-BLK1	Magnesium dissolved	<0.0050	mg/L	F	metals	EPA 6020B	24-Aug-21	0.005	mg/L		
21H2282_B1H2309-BLK1	Manganese dissolved	<0.000050	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00005	mg/L		
21H2282_B1H2309-BLK1	Molybdenum dissolved	<0.000010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00001	mg/L		
21H2282_B1H2309-BLK1	Nickel dissolved	<0.000040	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00004	mg/L		
21H2282_B1H2309-BLK1	Phosphorus dissolved	<0.010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.01	mg/L		
21H2282_B1H2309-BLK1	Potassium dissolved	<0.010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.01	mg/L		
21H2282_B1H2309-BLK1	Selenium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.0001	mg/L		
21H2282_B1H2309-BLK1	Silicon dissolved	<0.10	mg/L	F	metals	EPA 6020B	24-Aug-21	0.1	mg/L		
21H2282_B1H2309-BLK1	Silver dissolved	<0.000010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00001	mg/L		
21H2282_B1H2309-BLK1	Sodium dissolved	<0.020	mg/L	F	metals	EPA 6020B	24-Aug-21	0.02	mg/L		
21H2282_B1H2309-BLK1	Strontium dissolved	<0.00010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.0001	mg/L		
21H2282_B1H2309-BLK1	Sulfur dissolved	<1.00	mg/L	F	metals	EPA 6020B	24-Aug-21	1	mg/L		
21H2282_B1H2309-BLK1	Tellurium dissolved	<0.000050	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00005	mg/L		
21H2282_B1H2309-BLK1	Thallium dissolved	<0.0000040	mg/L	F	metals	EPA 6020B	24-Aug-21	0.000004	mg/L		
21H2282_B1H2309-BLK1	Thorium dissolved	<0.000010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00001	mg/L		
21H2282_B1H2309-BLK1	Tin dissolved	<0.000050	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00005	mg/L		
21H2282_B1H2309-BLK1	Titanium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	24-Aug-21	0.0002	mg/L		
21H2282_B1H2309-BLK1	Uranium dissolved	<0.0000010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.000001	mg/L		
21H2282_B1H2309-BLK1	Vanadium dissolved	<0.00020	mg/L	F	metals	EPA 6020B	24-Aug-21	0.0002	mg/L		
21H2282_B1H2309-BLK1	Zinc dissolved	<0.0010	mg/L	F	metals	EPA 6020B	24-Aug-21	0.001	mg/L		
21H2282_B1H2309-BLK1	Zirconium dissolved	<0.000020	mg/L	F	metals	EPA 6020B	24-Aug-21	0.00002	mg/L		
21H2282_B1H2309-BLK1	Tungsten dissolved	<0.20	ug/L	F	metals	EPA 6020B	24-Aug-21	0.2	ug/L		
21H2282_B1H2309-BS1	Aluminum dissolved	108	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Antimony dissolved	95	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Arsenic dissolved	99	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Barium dissolved	96	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Beryllium dissolved	100	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Bismuth dissolved	99	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Boron dissolved	94	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Cadmium dissolved	98	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Calcium dissolved	101	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Chromium dissolved	99	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Cobalt dissolved	100	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Copper dissolved	104	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Iron dissolved	102	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Lead dissolved	110	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Lithium dissolved	99	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Magnesium dissolved	114	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Manganese dissolved	100	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Molybdenum dissolved	95	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Nickel dissolved	102	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Phosphorus dissolved	94	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Potassium dissolved	107	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Selenium dissolved	108	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Silicon dissolved	112	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Silver dissolved	94	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Sodium dissolved	112	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Strontium dissolved	91	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Sulfur dissolved	116	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Tellurium dissolved	99	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Thallium dissolved	96	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Thorium dissolved	95	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Tin dissolved	95	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Titanium dissolved	80	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Tungsten dissolved	96	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Uranium dissolved	97	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Vanadium dissolved	98	%	F	metals	EPA 6020B	24-Aug-21	1	%		

CERTIFICATE OF ANALYSIS - MEND-SFE QA/QC RESULTS



PAGE: 9 of 9
 GLOBAL PROJECT NO: 1956 (B9)
 CLIENT: First Mining Gold Corp.
 PROJECT NAME: Springpole
 PROJECT NO: ONS2104
 REPORT VERSION: 3

Sulphate:

Certified Reference Material:	Parameter: Sulphate	% Recovery	Matrix Spike %	Units	QC Limits (%)
STD Mineral Water (28.5 mg/L)	27.90	97.9%		%	80 - 120
Spiked Blank (19.61 mg/L)	22.20		113.2%	%	80 - 120

Dissolved Metals by ICP-MS:

Sample Code	Parameter	Result	Result Units	Total or Filtered	Method Type	Method Name	Date Analyzed	EQL	EQL Units	UCL	LCL
21H2282_B1H2309-BS1	Zinc dissolved	116	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-BS1	Zirconium dissolved	99	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2309-SRM1	Aluminum dissolved	115	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Antimony dissolved	108	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Arsenic dissolved	115	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Barium dissolved	105	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Beryllium dissolved	105	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Boron dissolved	100	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Cadmium dissolved	104	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Calcium dissolved	113	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Chromium dissolved	108	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Cobalt dissolved	110	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Copper dissolved	112	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Iron dissolved	115	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Lead dissolved	115	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Lithium dissolved	104	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Magnesium dissolved	124	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Manganese dissolved	107	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Molybdenum dissolved	106	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Nickel dissolved	110	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Phosphorus dissolved	119	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Potassium dissolved	121	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Selenium dissolved	112	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Sodium dissolved	124	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Strontium dissolved	98	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Thallium dissolved	100	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Uranium dissolved	97	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2309-SRM1	Vanadium dissolved	105	%	F	metals	EPA 6020B	24-Aug-21	1	%	130	70
21H2282_B1H2414-BLK2	Zinc dissolved	118	%	F	metals	EPA 6020B	24-Aug-21	1	%		
21H2282_B1H2414-BLK3	Phosphorus Total Dissol	<0.0050	mg/L	F	General Parameters	SM 4500-P F (2017)	25-Aug-21	0.005	mg/L		
21H2282_B1H2414-BS2	Phosphorus Total Dissol	<0.0050	mg/L	F	General Parameters	SM 4500-P F (2017)	25-Aug-21	0.005	mg/L	115	85
21H2282_B1H2414-BS3	Phosphorus Total Dissol	110	%	F	General Parameters	SM 4500-P F (2017)	25-Aug-21	1	%	115	85
21H2282_B1H2515-BLK1	Phosphorus Total Dissol	110	%	F	General Parameters	SM 4500-P F (2017)	25-Aug-21	1	%		
21H2282_B1H2515-BLK2	Mercury dissolved	<0.000010	mg/L	F	metals	EPA 245.7*	25-Aug-21	0.00001	mg/L		
21H2282_B1H2515-SRM1	Mercury dissolved	<0.000010	mg/L	F	metals	EPA 245.7*	25-Aug-21	0.00001	mg/L	130	70
21H2282_B1H2515-SRM2	Mercury dissolved	121	%	F	metals	EPA 245.7*	25-Aug-21	1	%	130	70
21H2282_B1H2515-SRM2	Mercury dissolved	116	%	F	metals	EPA 245.7*	25-Aug-21	1	%		

NOTES:

Job No: 21H2282

Abbreviations & Descriptions:

Method Blank (BLK): A blank sample that undergoes sample processing identical to that carried out for the test samples. Method Blank results are used to assess contamination from the laboratory environment and reagents.

Duplicate (Dup): An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).

Blank Spike (BS): A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.

Matrix Spike (MS): A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.

Standard Reference Material (SRM): A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples.

For all types of QC, specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

- EQL = Estimated Quantitation Limits
- PQL = Practical Quantitation Limits
- UCL = Upper Control Limit
- LCL = Lower Control Limit
- BLK = Blank
- BS = Blank Spike
- MS = Matrix Spike
- DUP = Duplicate
- SRM = Standard Reference Materials

QUANTITATIVE PHASE ANALYSIS OF FIFTEEN POWDER SAMPLES USING THE RIETVELD METHOD AND X-RAY POWDER DIFFRACTION DATA.

**Project: 1956 (B8)
COC/PO #: GL21-770**

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September 15, 2021

EXPERIMENTAL METHOD

The fifteen samples of **Project 1956 (B8)** were reduced to the optimum grain-size range for quantitative X-ray analysis (<10 μm) by grinding under ethanol in a vibratory McCrone XRD Mill (Retsch GmbH, Germany) for 10 minutes. Continuous-scan X-ray powder-diffraction data were collected over a range $3\text{-}80^\circ 2\theta$ with $\text{CoK}\alpha$ radiation on a Bruker D8 Advance Bragg-Brentano diffractometer equipped with an Fe filter 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 Results Sept 15 2021 – Proj 1956 (B8) - 15 samples.xlsx*). These amounts represent the relative amounts of crystalline phases normalized to 100%. The Rietveld refinement plots are shown in Figures 1 – 15. Ideal formulae for the minerals are given in Table 2.

The X-ray diffraction patterns of samples #1, #3, #5 and #14 show humps (marked with vertical lines) that were fitted with calculated peaks and are due to the presence of some unknown clays and/or amorphous/nanoscale material which cannot be analyzed. The results should be considered approximate.

Table 2. Ideal formulae of phases present in *Project: 1956 (B8)*

Mineral	Ideal Formula
Ankerite-Dolomite	$\text{Ca}(\text{Fe}^{2+}, \text{Mg}, \text{Mn})(\text{CO}_3)_2 - \text{CaMg}(\text{CO}_3)_2$
Biotite	$\text{K}(\text{Mg}, \text{Fe}^{2+})_3\text{AlSi}_3\text{O}_{10}(\text{OH})_2$
Calcite	CaCO_3
Calcite, magnesian	$(\text{Ca}, \text{Mg})\text{CO}_3$
Clinochlore	$(\text{Mg}, \text{Fe}^{2+})_5\text{Al}(\text{Si}_3\text{Al})\text{O}_{10}(\text{OH})_8$
Fluorite	CaF_2
Illite-Muscovite 2M1	$\text{K}_{0.65}\text{Al}_{2.0}\text{Al}_{0.65}\text{Si}_{3.35}\text{O}_{10}(\text{OH})_2 - \text{KAl}_2\text{AlSi}_3\text{O}_{10}(\text{OH})_2$
Ilmenite	$\text{Fe}^{2+}\text{TiO}_3$
Kaolinite	$\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$
K-feldspar (Microcline)	KAlSi_3O_8
Magnetite	$\text{Fe}^{2+}\text{Fe}^{3+}_2\text{O}_4$
Plagioclase (Albite)	$\text{NaAlSi}_3\text{O}_8 - \text{CaAl}_2\text{Si}_2\text{O}_8$
Pyrite	FeS_2
Quartz	SiO_2
Rutile	TiO_2
Siderite	$\text{Fe}^{2+}\text{CO}_3$

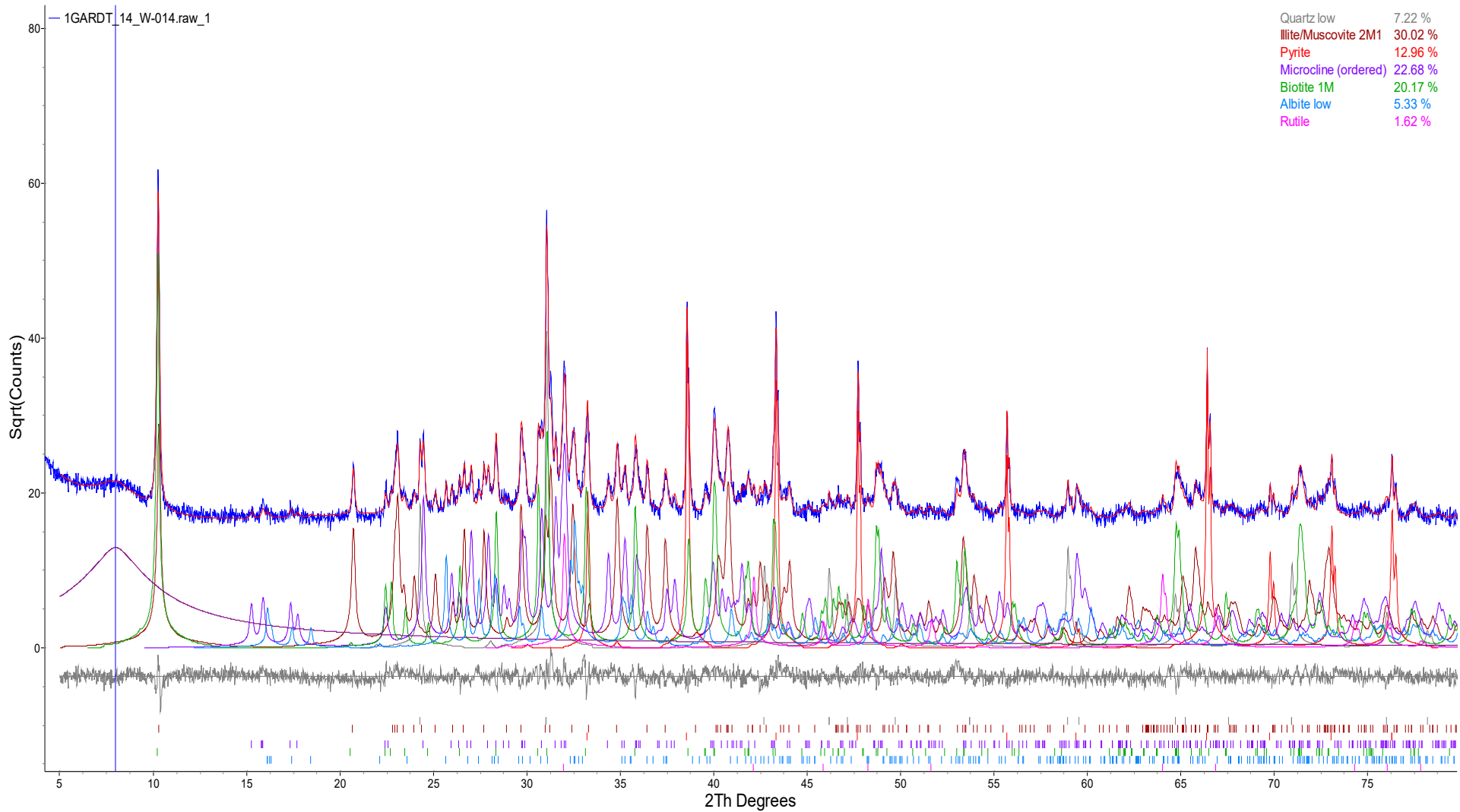


Figure 1. Rietveld refinement plot of sample **Global ARD Testing Services #14: W-014** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections; vertical blue lines - positions of peaks phases). Coloured lines are individual diffraction patterns of all phases.

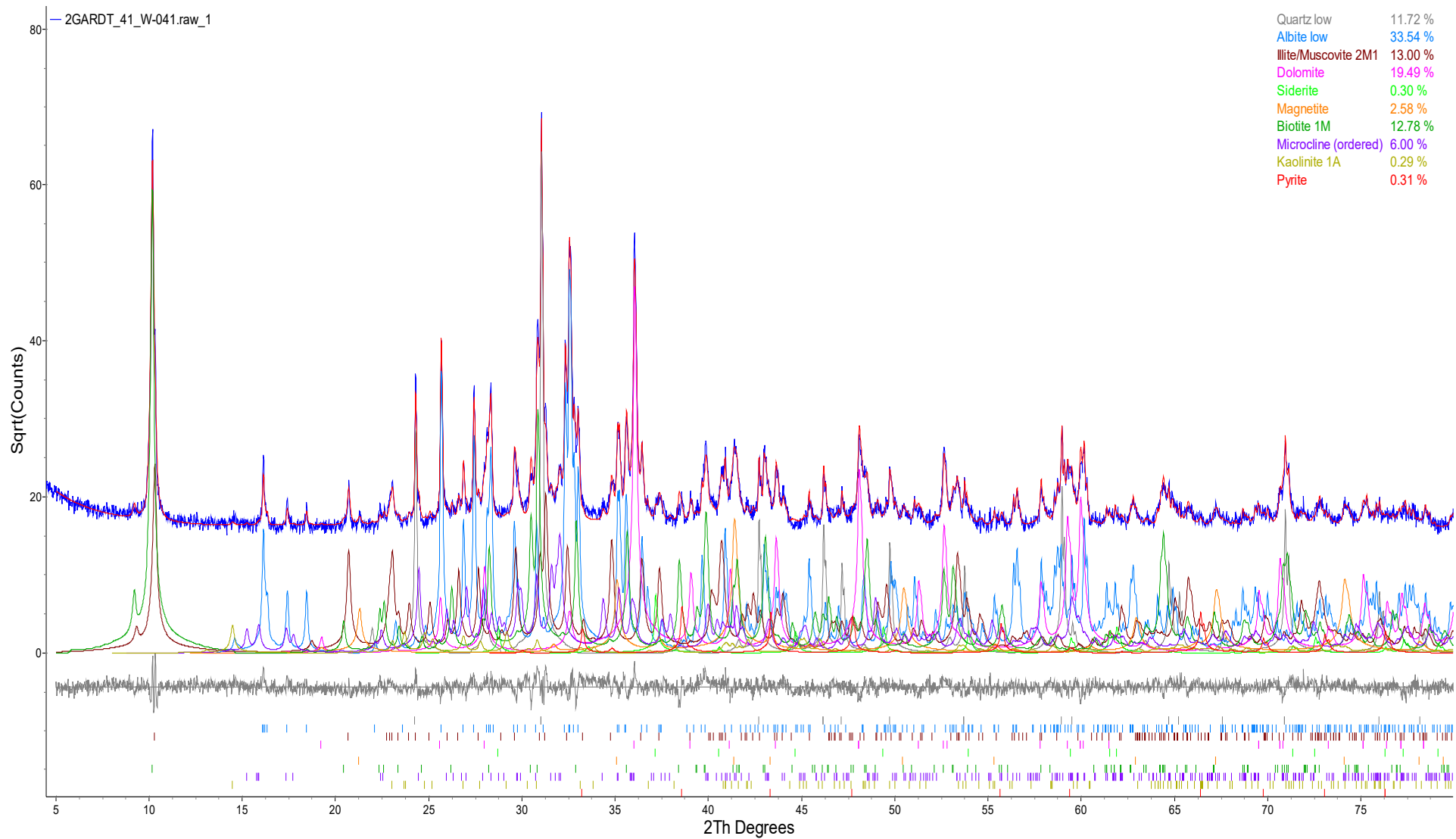


Figure 2. Rietveld refinement plot of sample **Global ARD Testing Services #41: W-041** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

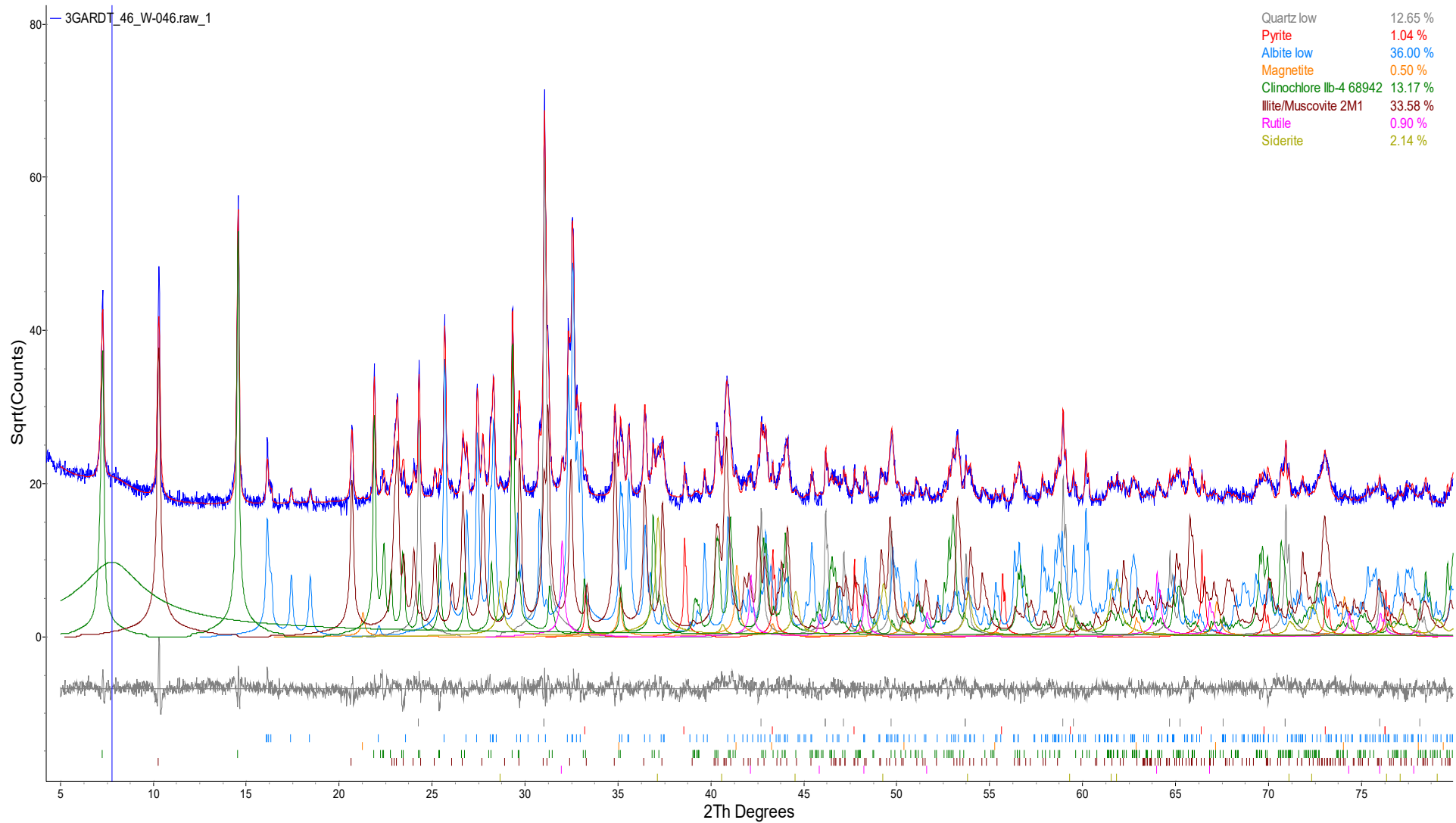


Figure 3. Rietveld refinement plot of sample **Global ARD Testing Services #46: W-046** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections; vertical blue lines - positions of peaks phases). Coloured lines are individual diffraction patterns of all phases.

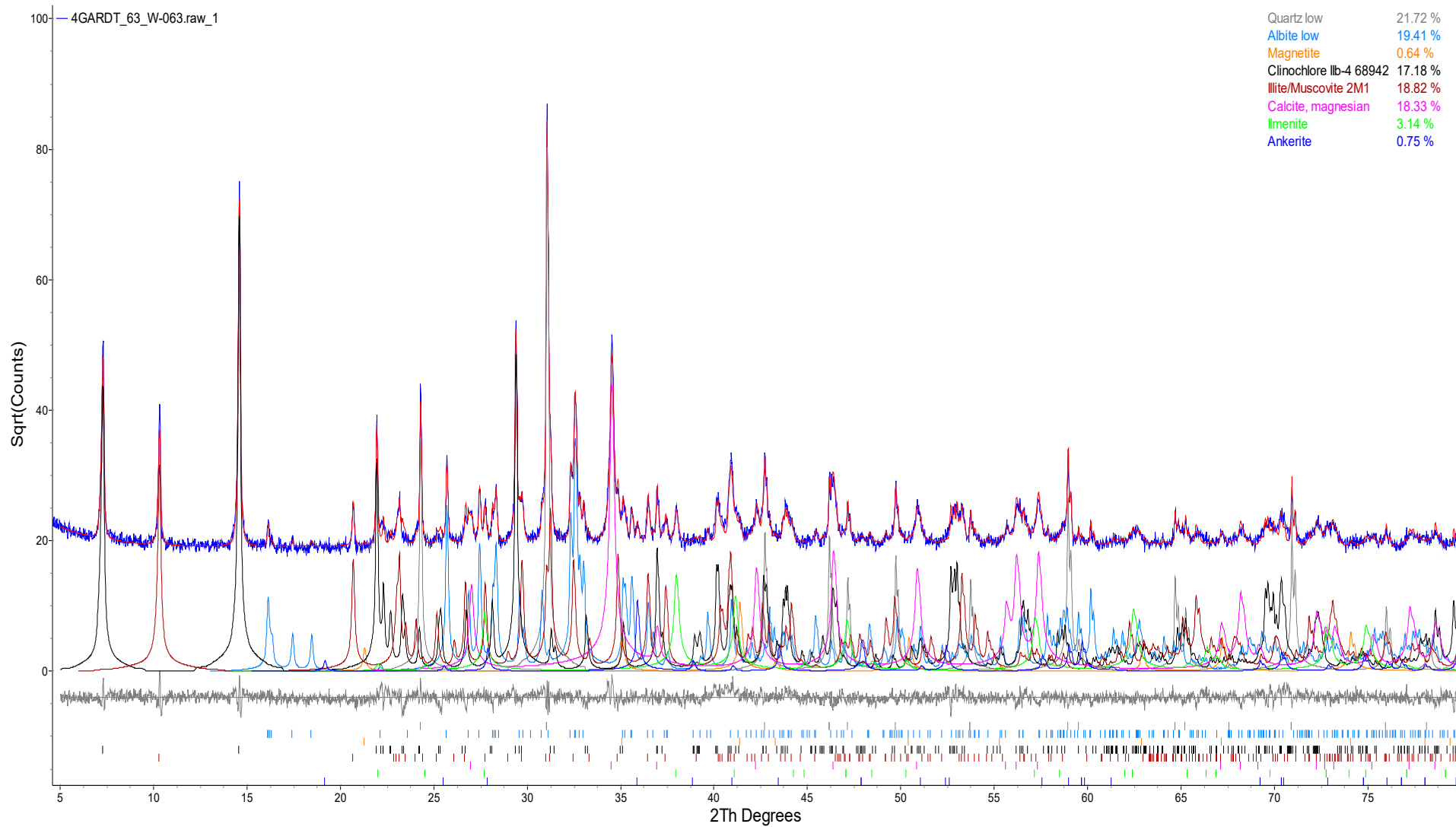


Figure 4. Rietveld refinement plot of sample **Global ARD Testing Services #63: W-063** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

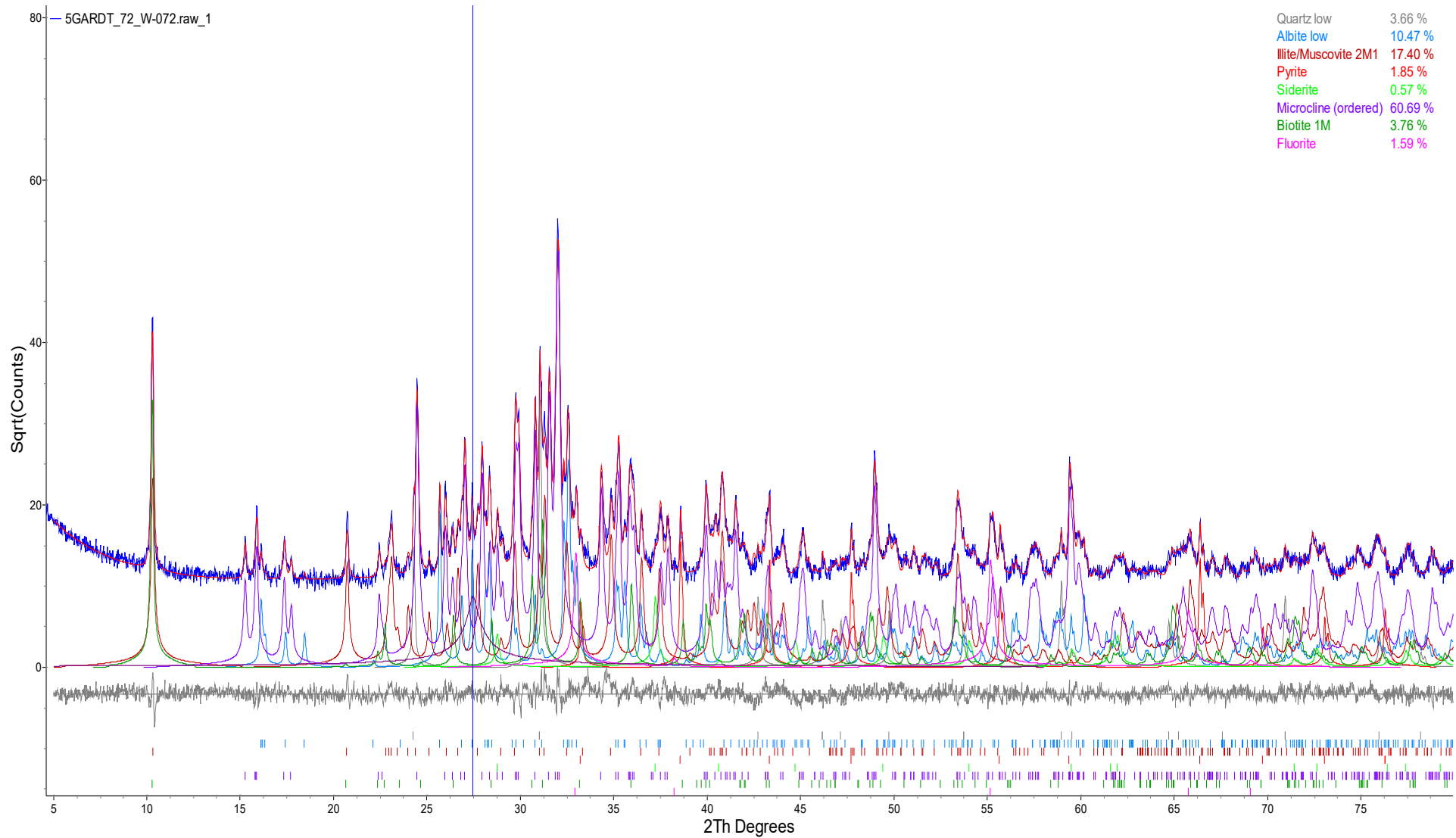


Figure 5. Rietveld refinement plot of sample **Global ARD Testing Services #72: W-072** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections; vertical blue lines - positions of peaks phases). Coloured lines are individual diffraction patterns of all phases.

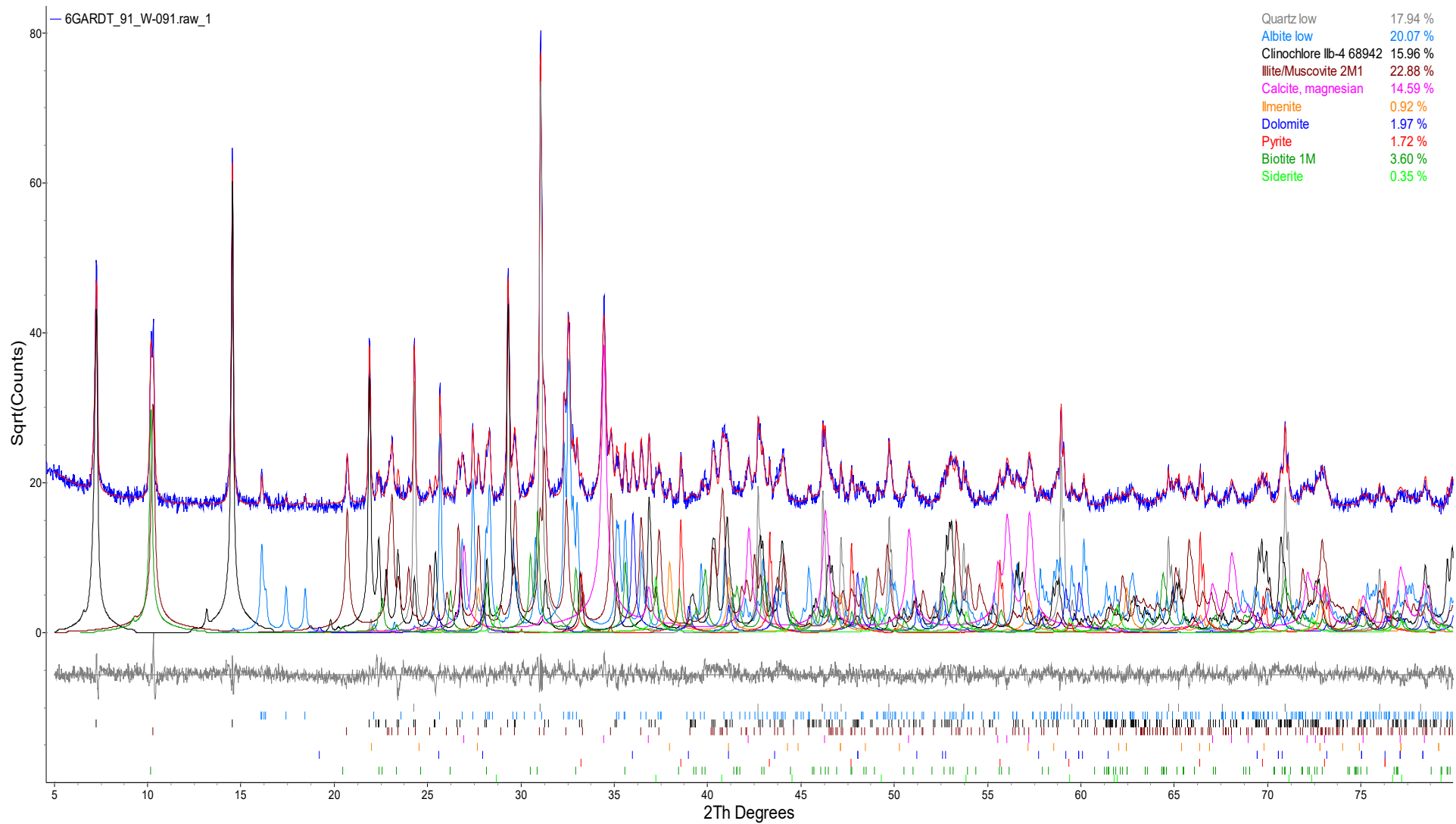


Figure 6. Rietveld refinement plot of sample **Global ARD Testing Services #91: W-091** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

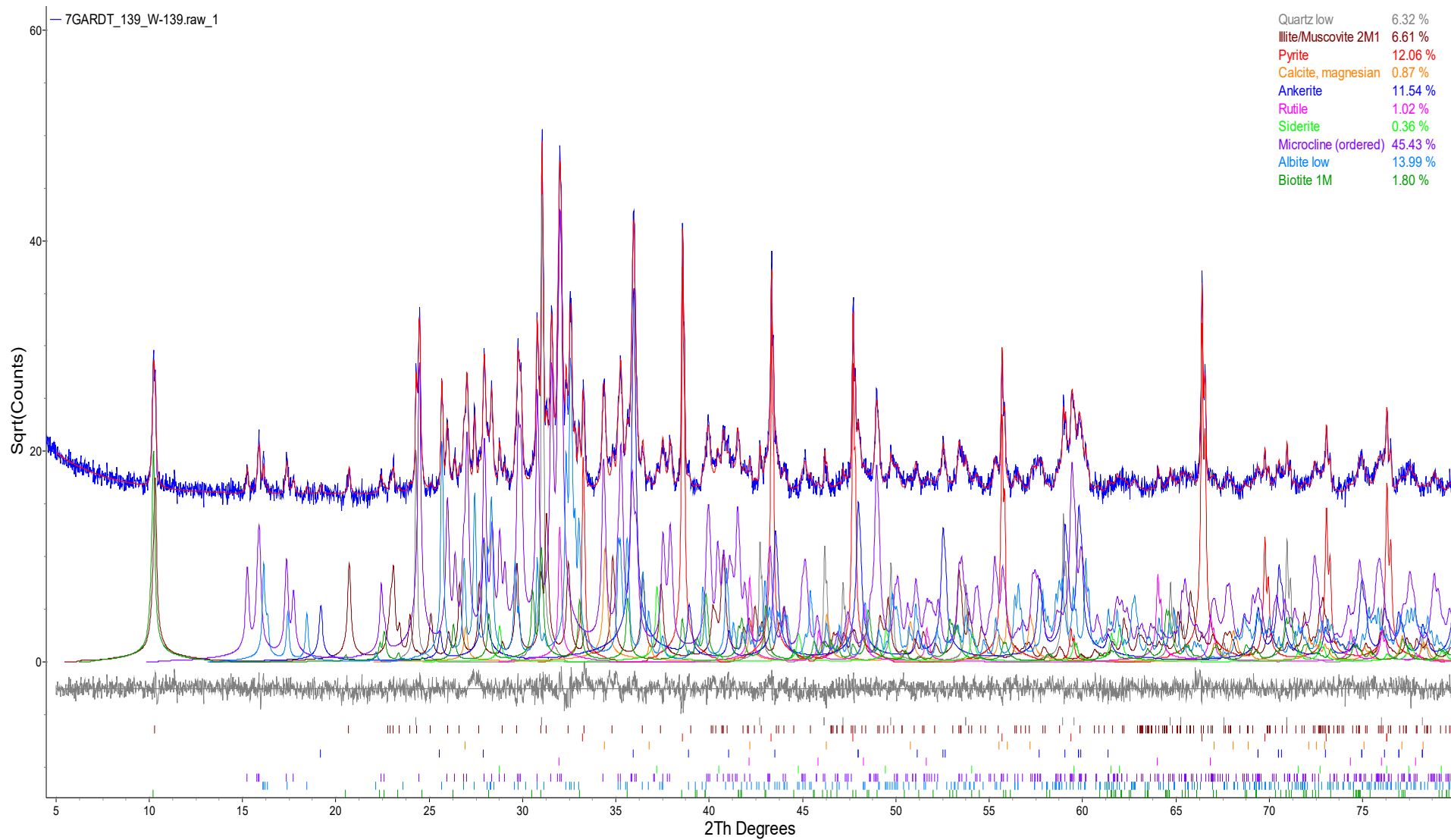


Figure 7. Rietveld refinement plot of sample **Global ARD Testing Services #139: W-139** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

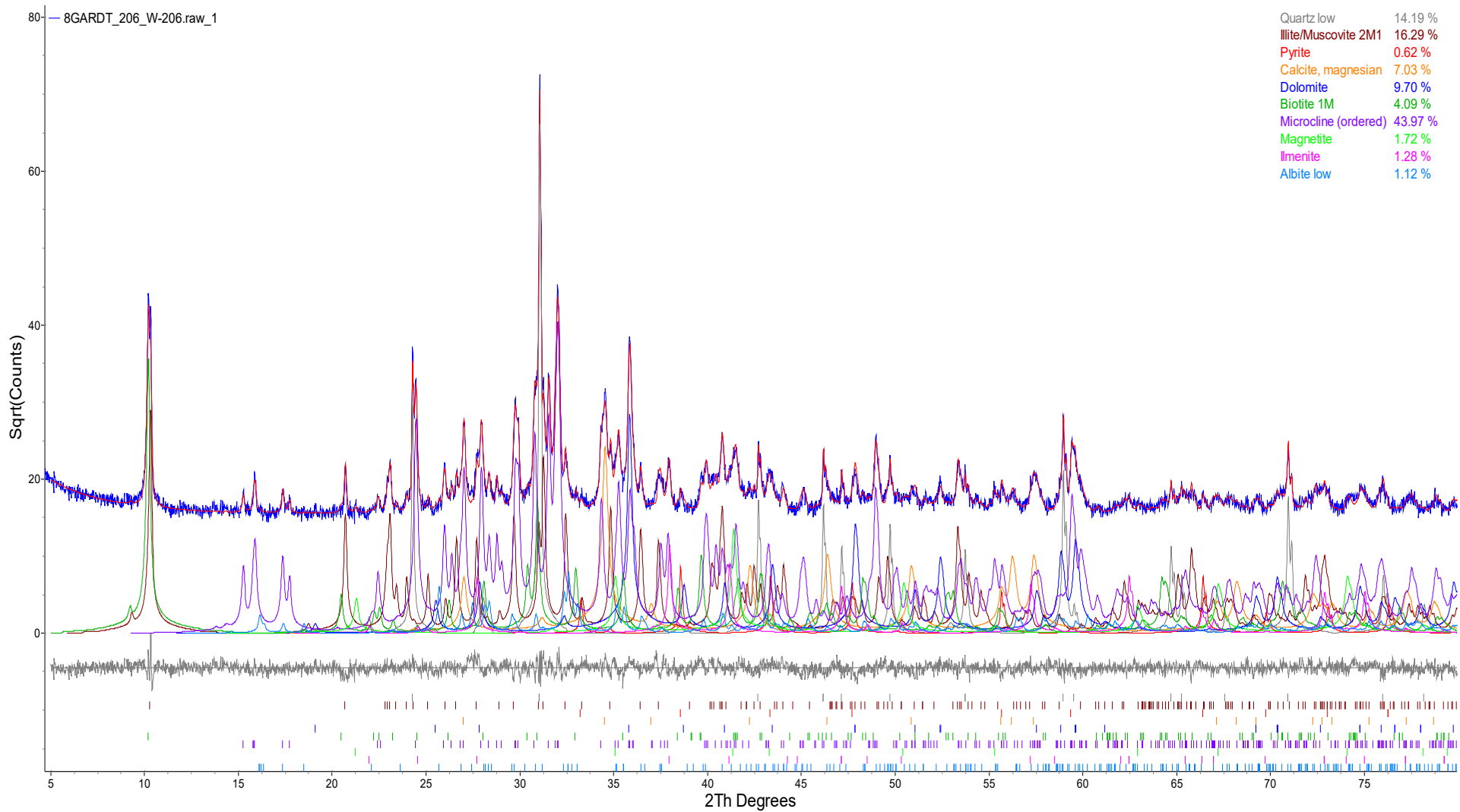


Figure 8. Rietveld refinement plot of sample **Global ARD Testing Services #206: W-206** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

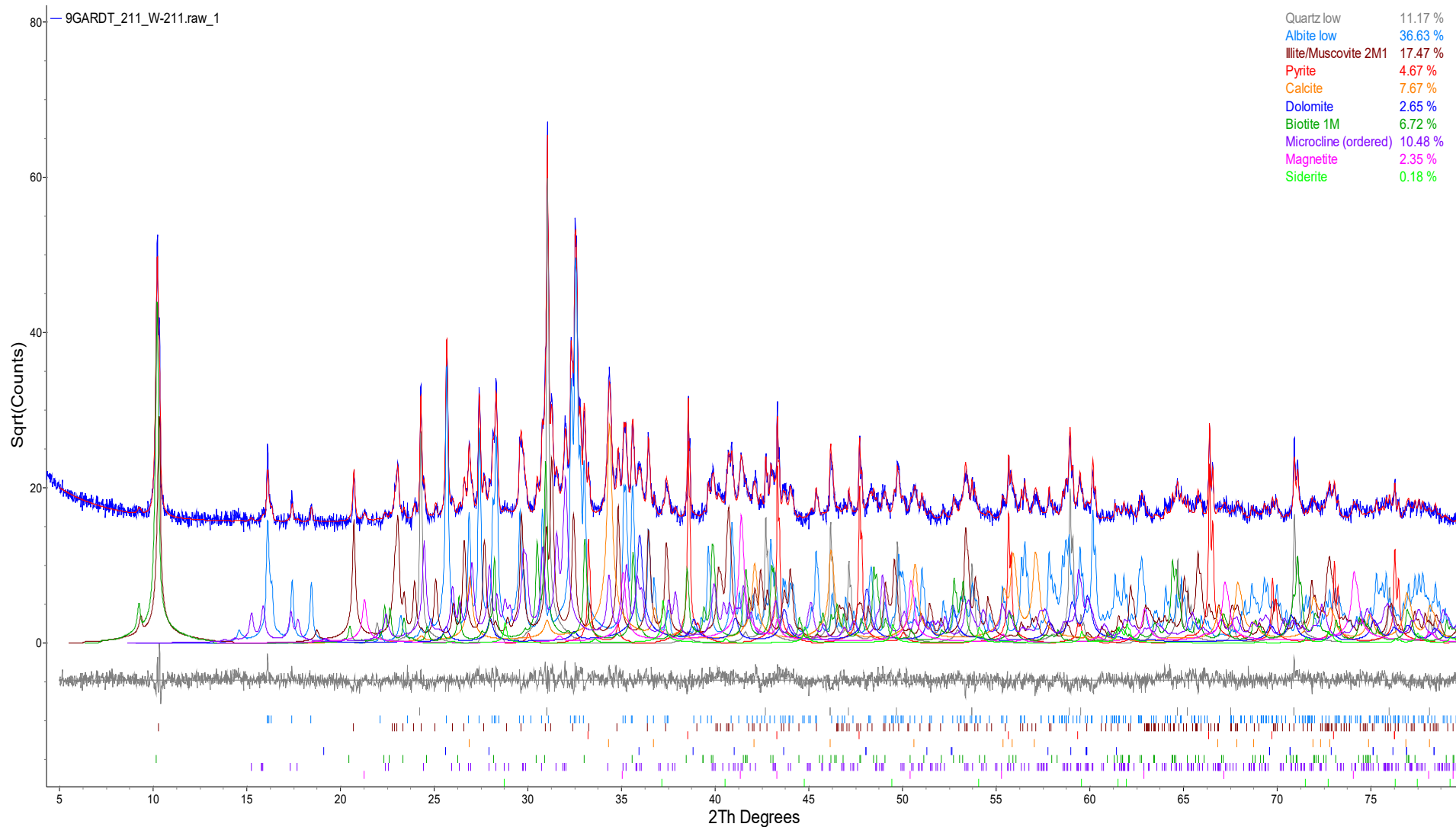


Figure 9. Rietveld refinement plot of sample **Global ARD Testing Services #211: W-211** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

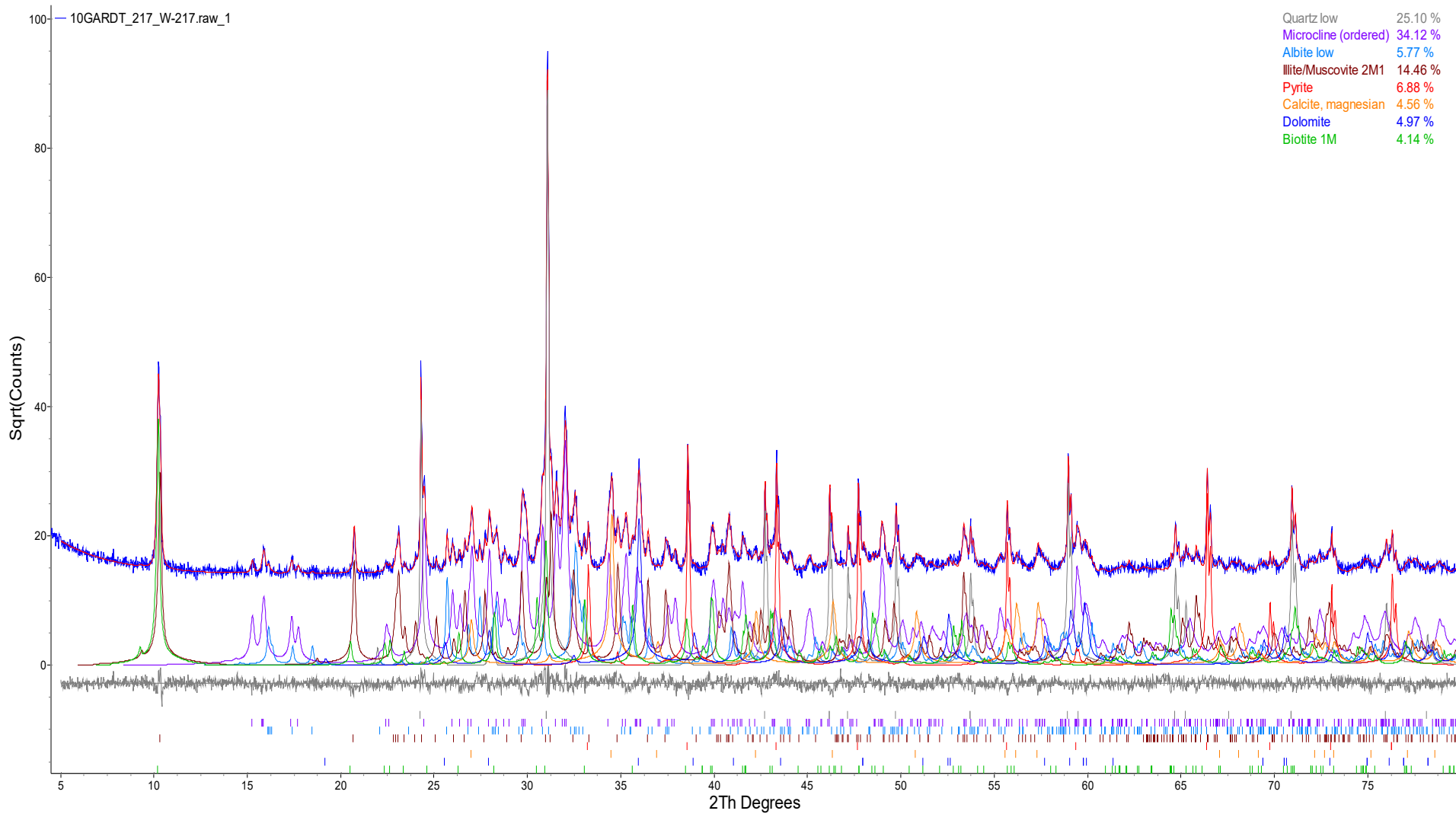


Figure 10. Rietveld refinement plot of sample **Global ARD Testing Services #217: W-217** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

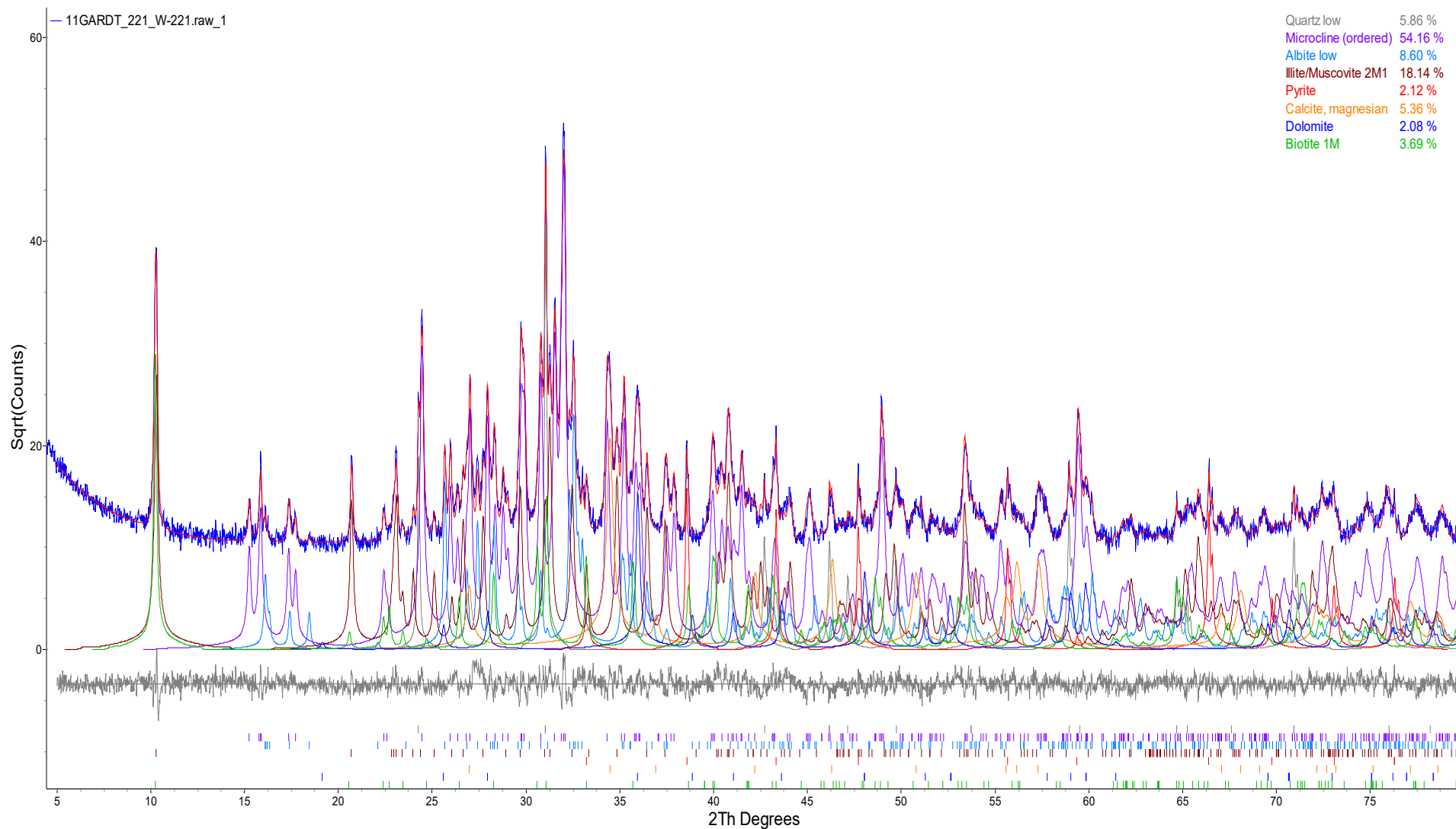


Figure 11. Rietveld refinement plot of sample **Global ARD Testing Services #221: W-221** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

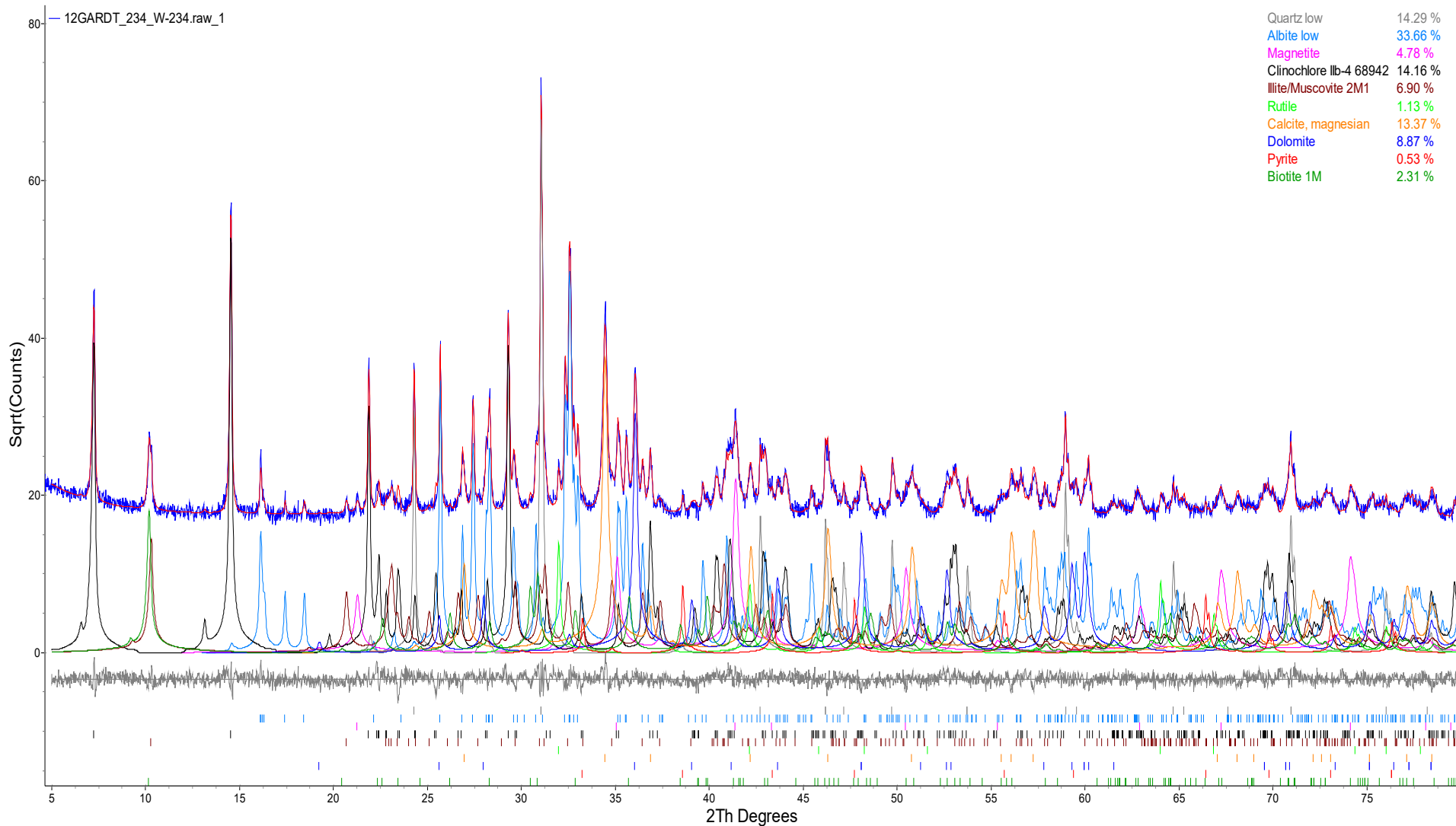


Figure 12. Rietveld refinement plot of sample **Global ARD Testing Services #234: W-234** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

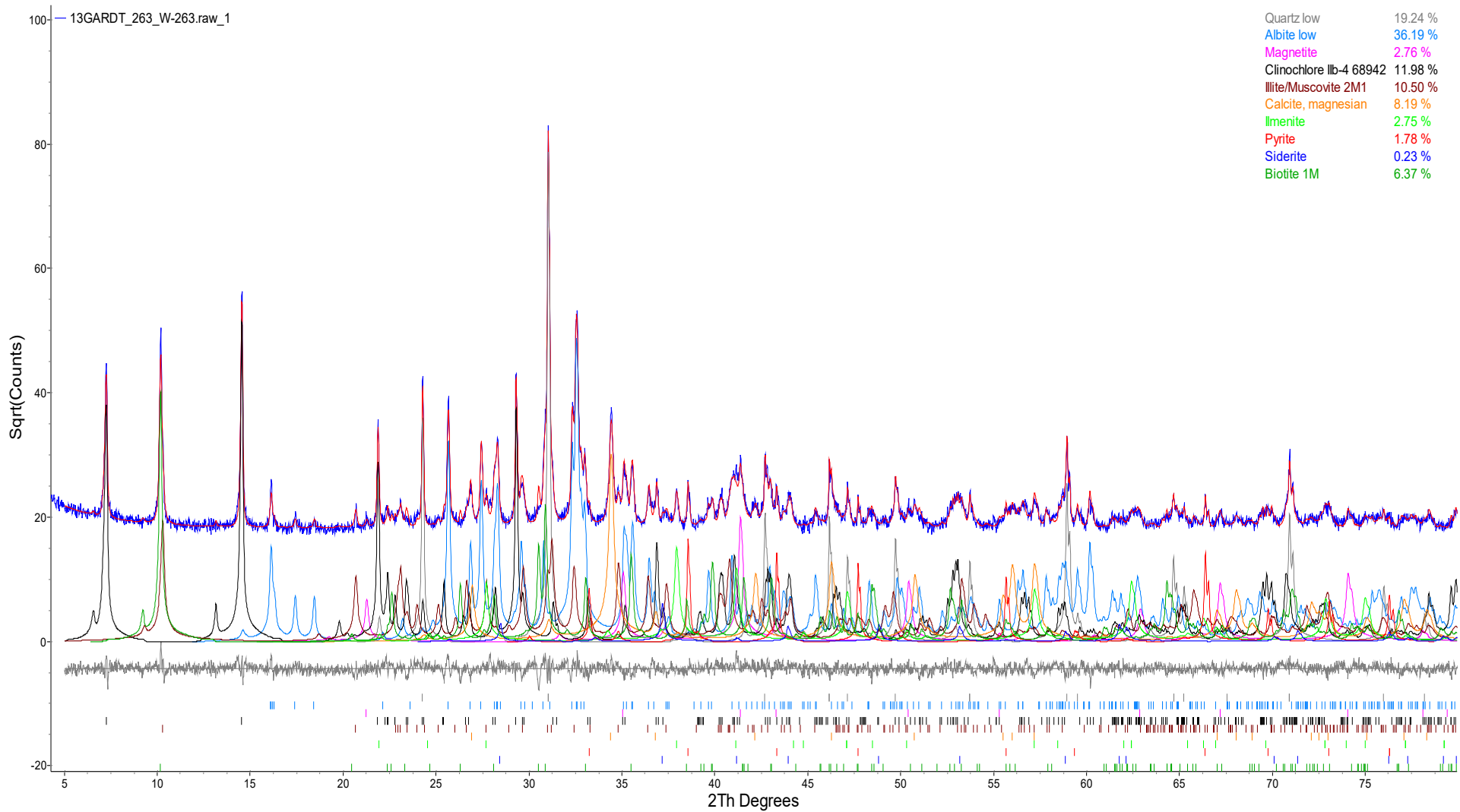


Figure 13. Rietveld refinement plot of sample **Global ARD Testing Services #263: W-263** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

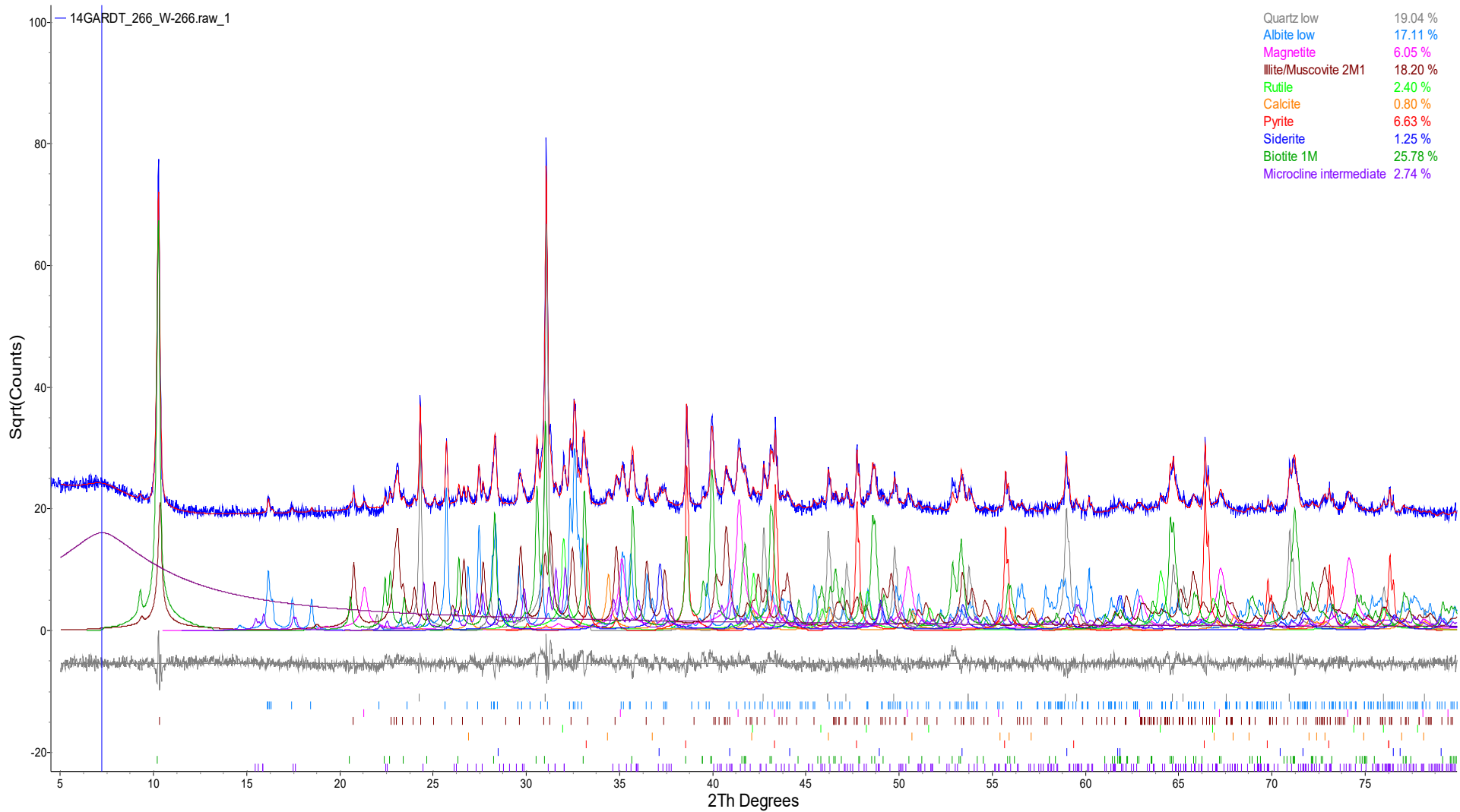


Figure 14. Rietveld refinement plot of sample **Global ARD Testing Services #266: W-266** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections; vertical blue lines - positions of peaks phases). Coloured lines are individual diffraction patterns of all phases.

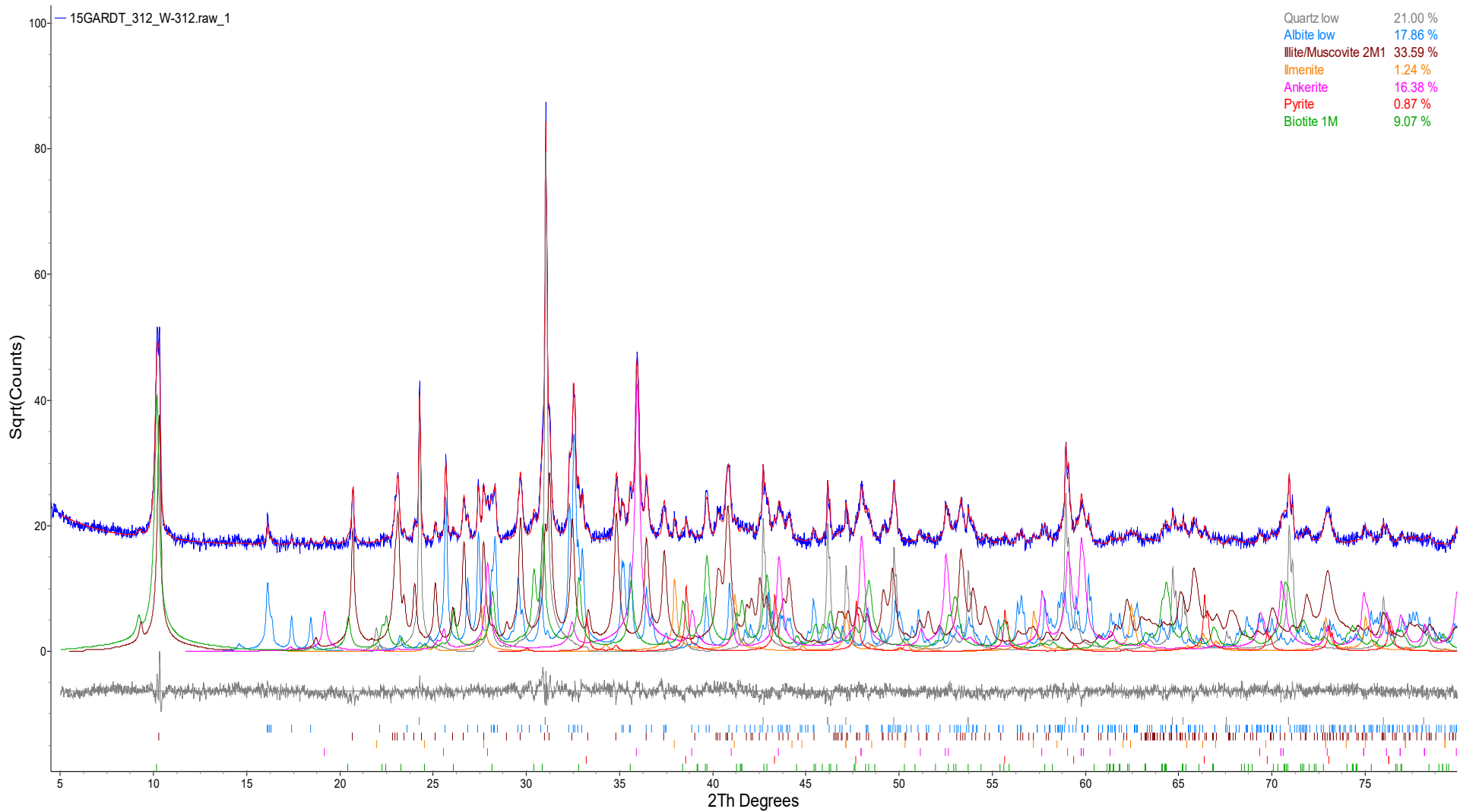


Figure 15. Rietveld refinement plot of sample **Global ARD Testing Services #312: W-312** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below - difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.