May 2011

NICO PROJECT, FORTUNE MINERALS LIMITED

Geochemical Characterization of Waste Rock, Ore, and Tailings

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REPORT

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Golder Associates

Executive Summary

This report summarizes the results of baseline geochemical characterization for the NICO gold-cobalt-bismuth-copper Project (NICO Project), owned by Fortune Minerals Limited (Fortune). Geochemical characterization of Mine Rock, ore and tailings was undertaken in support of engineering design and environmental studies at the NICO Project.

The NICO Project is located approximately 170 kilometres (km) northwest of Yellowknife, Northwest Territories. The NICO Project site has a continental-subarctic climate, marked by short summers (average temperatures of 15 to 30 degrees Celsius [^{o}C]) and longer winters with temperatures ranging from -15 to -30 ^{o}C (periodic lows of -45 ^{o}C). Zones of discontinuous permafrost have been identified at the NICO Project.

The ore deposit at the project is a polymetallic, IOCG type deposit (also referred to as an “Olympic Dam” type deposit). The main rock type at the NICO Project is black rock schist, or “BRS”, which consists of ironstone and variably altered wacke. Prior to metamorphic alteration, the BRS consisted of amphibolite, a metamorphic rock rich in amphibole. Black rock schist is overlain by rhyolite, and cross-cut by felsic dykes (i.e., quartz-feldspar porphyry). Mineralization of the host rock was associated with an evolving metasomic alteration front (i.e., metamorphic alteration of host rocks by hot fluids). Polymetallic, ore grade Au-Co-Bi-Cu mineralization occurs in an IOGC type deposit, also referred to as an “Olympic Dam” type deposit. The ore deposit at the NICO Project consists of 3 sub-parallel zones, which occur within 300 meters (m) of the contact between BRS and rhyolite. Small lenses of mineralization also occur in the rhyolitic rock and altered quartz-feldspar porphyry dykes. The main Mine Rock lithologies at the NICO Project are BRS and wacke (i.e., ironstone), with lesser quantities of rhyolite and dykes. Siltstone underlies the main lithologies, and will be encountered in negligible quantities during Open Pit mining according to the most recent mine plan.

According to the current mine plan, Open Pit mining methods will be the primary method of ore extraction. Open Pit mining will take place in 4 stages, spanning approximately 18 years: Phase 1a, Phase 1, Phase 2, and Phase 3. Two years of underground mining will take place during Phase 1a to target a high grade zone of gold mineralization. The ultimate depth of the underground mine workings at the termination of underground mining will be approximately 170 m below ground surface. At the end of operations the Open Pit will be approximately 1450 m long by 500 m wide by 230 m deep. The design ore reserve is approximately 31.0 million tonnes (Mt), with a planned production rate of 4650 tonnes per day. Approximately 90.3 Mt of Mine Rock and 6.5 Mt of sub-economic mineralized rock will be produced from the underground mine workings and the Open Pit over the life of mine.

Ore from the Open Pit and underground mine workings will report directly to the mill for processing, with storage in temporary stockpiles for the purpose of producing customized, blended mixtures of ore as necessary. The on-site process will consist of a flotation circuit. The flotation concentration will be transported to the off-site hydrometallurgical facility by rail. Tailings will be thickened prior to discharge to the Co-Disposal Facility (CDF).

The principal mine wastes that will be produced during operations at the NICO Project include:

- tailings;
- Mine Rock; and

- sub-economic mineralized rock.

Tailings, Mine Rock, and sub-economic mineralized rock will report to the CDF. Sub-economic mineralized rock will be segregated in a separate stockpile within the footprint of the CDF for future processing, as necessary. Mine Rock and tailings will be deposited within the CDF. The Mine Rock Management Plan for the NICO Project used the results of geochemical characterization of Mine Rock to define rock with a low potential for acid generation and metal leaching for construction of roads, building foundations, and lay down areas at the NICO Project (refer to the DAR, Section 3, Appendix 3.I).

The geochemical properties of Mine Rock, sub-economic mineralized rock, ore, and tailings can have implications on engineering designs, mine planning and environmental monitoring commitments. A detailed geochemical characterization program was conducted for each of these materials. Over 300 samples of Mine Rock, sub-economic mineralized rock and ore were evaluated from existing exploration drill core and stockpiled material at the NICO Project site as part of the geochemistry baseline program. In addition, tailings were generated during metallurgical testing at SGS Lakefield (under the direction of Fortune). Mine Rock, sub-economic mineralized rock, ore and tailings were submitted for laboratory analysis including: acid base accounting (ABA), metal analysis, short-term leach testing (synthetic leachate precipitation procedure (SPLP), and shake flask extraction (SFE), net acid generation (NAG) testing, including comprehensive analysis of NAG leachates, tailings decant water analysis and aging tests, and humidity cell tests. In addition to the laboratory tests, 4 samples of sub-economic mineralized rock, one sample of ore and one sample of tailings were used to construct on-site field cell tests for the purpose of evaluating the geochemistry of mine waste materials under site specific conditions.

Key conclusions of geochemical testing performed on samples of Mine Rock, sub-economic mineralized rock, ore, and tailings from the NICO Project are as follows:

Acid Generation Potential

- Based on the samples tested in the geochemical dataset, a relatively small amount of Mine Rock has a potential to generate acidity: 10% of the samples tested contained greater than 0.3% sulphide-sulphur. A preliminary Mine Rock management plan and operational monitoring program has been developed to minimize the potential for acid generation from Mine Rock used for the purpose of construction.
- Sub-economic mineralized rock has a greater potential for acid generation than Mine Rock (45% of the samples tested contained greater than 0.3% sulphide-sulphur). Appropriate storage and handling of sub-economic mineralized Mine Rock will be required to prevent release of potential acidity that could be produced during the long-term storage of this material.
- Ore has some potential for acid generation; however, ore will be stored in temporary stockpiles prior to processing. No ore will remain on-site in the long-term. Temporary stockpile areas should be monitored for short-term acid generation.
- The results of static and kinetic testing indicate that tailings samples are unlikely to generate acidity. The tailings materials may provide a reasonable material for use in developing mitigation plans and closure strategies when combined with Mine Rock.

Metal Leaching Potential

- Several trace metals occurred at elevated concentrations in the solid phase, including metals associated with metamorphic alteration and mineralization such as arsenic, bismuth, cobalt, and copper. Arsenic and cobalt are hosted by arsenopyrite and cobaltite, respectively. Bismuth occurs as native bismuth and bismuthinite. Copper is hosted by chalcopyrite. Geological description of the ore body and the results of mineralogical analysis indicate the presence of pyrite and pyrrhotite in site lithologies.
  - Statistical evaluation of the results of solid phase analysis indicated that arsenic and cobalt are strongly associated with sulphide minerals. Solid phase concentrations of selenium correlate strongly with bismuth.
- The results of geochemical characterization indicate that several metals can leach from Mine Rock, sub-economic mineralized rock ore and tailings and will require assessment within the context of the tailings and Mine Rock management plan for the NICO Project. Key metals that will require assessment include arsenic and selenium.
  - Based on the results of solid phase analysis, the likely source of elevated arsenic in laboratory leachates is the oxidation of sulphide minerals.
  - Selenium most likely leaches from bismuth minerals associated with ore mineralization. Elevated concentrations of selenium were detected in short-term leachates and field cell leachates from sub-economic mineralized rock, ore and tailings.

In addition to metal leaching, possible release of total suspended solids, major ions (such as nitrate and ammonia, chloride, and overall total dissolved solids) due to mine development (i.e., mine dewatering, explosives use) will also require evaluation within the context of site discharge. Appropriate mitigation strategies will be required.

Appropriate mine planning, project design, and mitigation are required to address the short-term and long-term geochemical stability of Mine Rock, sub-economic mineralized rock ore and tailings at the NICO Project. These will be described in the overall Developer's Assessment Report (DAR) document, and will require iterative review and refinement during ongoing operations as operational monitoring data becomes available.

Table of Contents

TABLES

FIGURES

APPENDICES

List of Acronyms and Abbreviations

Acronyms	
ABA	Acid Base Accounting
AP	acid potential
BRS	Black Rock Schist
BRS + magnetite	Black Rock Schist with magnetite
BRS ± magnetite	Black Rock Schist with or without magnetite
CDF	Co-Disposal Facility
ETF	Effluent Treatment Facility
HCT	Humidity Cells Tests
NAG	Net Acid Generation
NP	neutralization potential
NSR	Net Smelter Return
ROM	Run-of-mine
SFE	Shake Flask Extraction
SPLP	Synthetic Leachate Precipitation Procedure
SSWQO	Site-specific Water Quality Objectives
XRD	X-ray diffraction
Abbreviations	
%	percent
°C	degrees Celsius
kg	kilogram
km	kilometres
L	Litre
m	meters
masl	meters above sea level
Mt	million tonnes
%	percent
t	tonne
t/day	tonnes per day
t/yr	tonnes per year

1.0 INTRODUCTION

The NICO gold-cobalt-bismuth-copper Project (NICO Project), owned by Fortune Minerals Limited (Fortune), is located approximately 170 kilometres (km) northwest of Yellowknife, Northwest Territories (Figure 1-1). Fortune proposes the development of an Open Pit/underground mine at the NICO Project. Ore will be concentrated at the on-site Mineral Process Plant using a flotation circuit. The flotation concentrate will be shipped to a hydrometallurgical facility in Saskatchewan for further processing.

Baseline geochemical characterization of Mine Rock, sub-economic mineralized Mine Rock, ore, and tailings was initiated in 2004. The geochemical characterization of Mine Rock, sub-economic mineralized rock, ore, and tailings is one component of a comprehensive environmental and socio-economic baseline program that has been undertaken in support of the NICO Project. This report summarizes the results of geochemical characterization of Mine Rock, sub-economic mineralized Mine Rock, ore, and tailings. The principal conclusions of this report relate to the project description in Section 3 of the Developer's Assessment Report (DAR).

This report is structured as follows:

- Section 1 provides an overview of the baseline study and work conducted to date.
- Section 2 provides an overview of pertinent geochemical processes typical of mining projects.
- Sections 3 presents background information relevant to the geochemical investigation for the NICO Project.
- Section 4 summarizes the geochemical characterization program.
- Section 5 reports the methods of assessment and results of baseline geochemical characterization.
- Section 6 and 7 provide a discussion of the results of the geochemical investigation, including an overview of potential issues relating to Mine Rock, sub-economic mineralized rock, ore, and tailings at the NICO Project.
- Section 8 provides a summary of the principal conclusions of the geochemical characterization program.

1.1 Objectives

The objective of the baseline geochemical characterization program was to provide data regarding the chemical stability of Mine Rock, sub-economic mineralized rock, ore, and tailings that are expected to be generated during mining and mineral processing at the NICO Project. Specific objectives included:

- development of the NICO Project geochemical dataset for inclusion in pre-feasibility and feasibility site designs, water licensing and site licensing, and the environmental assessment;
- evaluation of the acid generation and metal leaching potential of Mine Rock, ore and tailings; and
- provision of sufficient information to support the development of operational and post-closure environmental management strategies and material handling options.

LEGEND

- NICO PROJECT
- TERRITORIAL CAPITAL
- POPULATED PLACE
- HIGHWAY
- EXISTING ALL-WEATHER ROAD
- EXISTING WINTER ROAD
- PROPOSED NICO PROJECT ACCESS ROAD
- PROPOSED TŁĮCHǪ ROAD ROUTE
- RAILROAD
- TERRITORIAL/PROVINCIAL BOUNDARY
- WATERCOURSE
- WATERBODY

REFERENCE

Base data obtained from Atlas of Canada, DMTI, and ESRI.
Projection: Canada Lambert Conformal Conic

100 0 100
SCALE 1:3,000,000 KILOMETRES

FORTUNE MINERALS LIMITED
NICO DEVELOPER'S ASSESSMENT REPORT

TITLE

LOCATION OF THE NICO PROJECT

Golder Associates
Edmonton, Alberta

FILE No. E-Section1-002-GIS			
PROJECT No. 09-1373-1004		SCALE AS SHOWN	REV. 0
DESIGN	JG	17 Jan. 2011	
GIS	CW	17 Jan. 2011	
CHECK	GRA	03 Apr. 2011	
REVIEW	GRA	03 Apr. 2011	

FIGURE: 1-1

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1.2 Scope of Work

The scope of the geochemical characterization program included:

- evaluation of background information and the results of exploration programs at the NICO Project (i.e., geological drill core logs, previous reporting) for the purpose of identifying parameters of significant with respect to the geochemical characteristics of Mine Rock, sub-economic Mine Rock and ore;
- site visits by Golder Associates Ltd. (Golder) geochemists, for the purpose of site reconnaissance, visual confirmation of lithological descriptions in drill core logs with respect to the actual drill core, and collection of representative drill core samples for laboratory analysis;
- site visits by Golder geochemists to collect samples from stockpiles of run-of-mine (ROM) Mine Rock, sub-economic Mine Rock and ore that were placed on surface during the extraction of the bulk sample;
- coordination of static and kinetic laboratory testing of Mine Rock, sub-economic Mine Rock, ore, and tailings;
- construction of field scale tests (i.e., field cells) to evaluate the geochemical characteristics of Mine Rock, sub-economic Mine Rock, ore and tailings under site specific conditions; and
- data compilation and its interpretation, including an evaluation of the acid generation and metal leaching potential of Mine Rock, low-grade ore and tailings.

The scope of work is consistent with the guidance in *Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Mine Sites in British Columbia* (Price 1997), the *Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials* (MEND 2009), and the Global Acid Rock Drainage (GARD) Guide (INAP 2009).

1.3 Program Development

The geochemical characterization program was initiated in 2004 and underwent iterative refinement to meet the objectives in Section 1.1. The sampling and analysis program evolved in response to the development of the project and advances in technical understanding. Factors taken into consideration during development and refinement of the geochemical characterization program included the following:

- mine geology;
- mine plan, tonnage, and disposal options for the various waste streams at the NICO Project;
- sampling requirements, as per Price (1997) and MEND (2009), for the selection of spatially and compositionally representative samples; and
- the requirement for the selection of defensible testing procedures, that are suitable for the anticipated conditions at the NICO Project site, while providing the data for comparisons to similar sites.

The initial stage of the geochemical characterization program (2004) consisted of a detailed review of the available site data, followed by the identification and collection of representative samples of exploration drill core and outcrop (Mine Rock and ore). The exploration drill core and outcrop samples were submitted for static tests. Static tests are one-time tests that were conducted to evaluate the acid generation and short-term metal

leaching potential. Long-term, kinetic tests (i.e., humidity cell tests) were initiated on exploration drill core samples that were selected based on the results of static testing.

Additional samples were collected from the NICO Project during advanced exploration. In 2006, an underground ramp was driven into the NICO deposit for the purpose of collecting a 250 tonne (t) bulk sample from the main mineralized zone (MICON 2007). Sub-economic mineralized rock and ore excavated from the underground exploration ramp were stored in the vicinity of the portal (i.e., mine ramp opening). In August 2008, this material was amalgamated into a smaller area, which was covered with low permeability geotextile. Samples were collected from the ROM rock stockpiles during the pile reconstruction effort in 2008. The ROM rock samples were submitted for static testing and used to construct Mine Rock and ore field scale tests (i.e., field cells). On-site monitoring of the field cells is ongoing.

Samples of drill core and ROM rock collected in 2004 and 2008 were submitted for follow-up analysis in 2009 to determine solid phase and leachate concentrations of specific metals at lower analytical detection limits.

Samples of the tailings generated during pilot plant testing in 2007 and 2008 were submitted for geochemical characterization. Tailings samples underwent static and kinetic tests in the laboratory. Larger tailings samples (i.e., several hundred kilograms [kg]) were shipped to the NICO Project site for the construction of field cells in 2008. In addition, a second pilot plant program was carried out in 2010. Process water samples collected from these tailings were submitted for analysis. The geochemical characterization of tailings from the 2010 pilot plant was ongoing at the date of preparation of this report.

1.4 Work to Date

This report is one of a series of reports and technical memoranda prepared by Golder in support of environmental and engineering studies for the NICO Project. The NICO Project team includes:

- owner – Fortune;
- process design – Aker Solutions Canada Inc.;
- construction specialist – Aker Solutions Canada Inc.;
- mine planning and ore evaluation – P&E Mining Consultants Inc.;
- baseline studies and environmental impact assessment – Golder; and
- tailings and Mine Rock management – Golder.

At the date of preparation of this report, Golder's scope of work includes the following:

- baseline studies and preparation of the DAR, including geochemistry, rock and hydrogeology, water resources, surface water quality, wildlife, soils and terrain, vegetation, traditional knowledge and traditional land use, heritage resources, socio-economic, air quality and climate, and noise;
- geotechnical and hydrogeological investigations;
- paste thickening characterization;
- tailings and Mine Rock management; and

- site water quality and geochemistry.

2.0 PROJECT OVERVIEW

2.1 Physiographic Setting

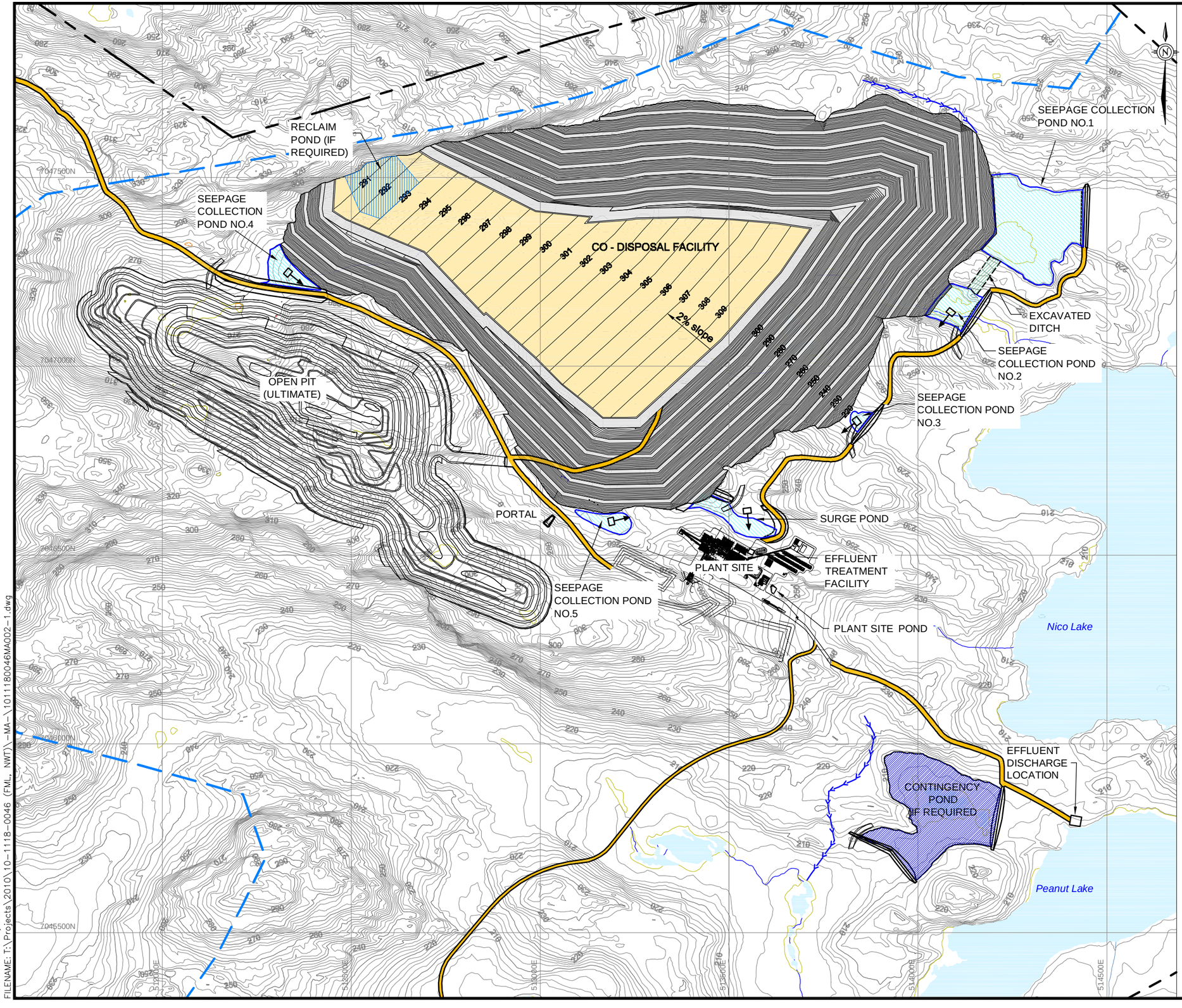
The NICO Project site is located within the Marian River drainage basin, approximately 10 km east of Hislop Lake at a latitude of 63 degrees and 33 minutes north, and a longitude of 116 degrees 45 minutes west. The site has a continental-subarctic climate, marked by short summers with average temperatures of 15°C. Winter temperatures range from -15 to -30°C, with periodic lows of up to -45°C. Geotechnical investigations at the site have identified zones of discontinuous permafrost.

The NICO Project site has rugged topography. Absolute elevations at the NICO Project site range from 150 to 350 meters above sea level (masl). The NICO ore body is located on the northern slope of a bowl-shaped depression referred to as the “Bowl Zone”. The south end of the proposed mine is located on a ridge of exposed bedrock, which slopes down towards the north end of the proposed mine in the Grid Stream depression (Figure 2-1).

2.2 Project Facilities

The proposed site configuration is presented in Figure 2-1. Proposed on-site infrastructure includes:

- Open Pit and underground mine;
- Mineral Processing plant (Plant);
- Tailings and Mine Rock CDF;
- Sub-economic Mine Rock stockpile, located within the footprint of the CDF;
- Thickened tailings distribution system;
- Plant site pond;
- Seepage Collection Ponds;
- Surge Pond;
- Polishing Pond;
- Effluent Treatment Facility (ETF),
- Camp site;
- Internal access and haul roads;
- Drainage control systems;
- Pump house and fresh water intake on Lou Lake;
- Fuel and chemical storage facilities; and
- Powder magazine.



LEGEND

- PUMP STATION (MOTHBALLED, CONTINGENCY ONLY)
- DIVERSION DITCH
- PROJECT LEASE BOUNDARY
- WATERSHED
- ACCESS ROAD
- CO-DISPOSED TAILINGS AND MINE ROCK
- CONTINGENCY POND
- PERIMETER DYKE OF CO-DISPOSAL FACILITY
- RECLAIM POND
- SEEPAGE COLLECTION POND / SURGE POND
- WATER BODY

NOTES

1. All elevations (geodetic datum) and grid coordinates (UTM NAD83, Zone 11) shown in this drawing are in metres.
2. Configuration shown assumes sub-economic ore is not processed.

REFERENCE

Base mapping provided in digital format by Fortune Minerals Limited received February 20, 2004.

Process plant and mine infrastructure provided by Aker Solutions filename 0000g001d (plant site oct252010).dwg provided Oct.26, 2010. Revised pits provided by P & E Mining Consultants, ultimate pit and topo.dxf on Jan. 26, 2010.

Project lease boundary provided by Fortune (October 8, 2008) with comments provided Dec. 19, 2009.

200 0 200 400

SCALE 1:10,000 METRES

FORTUNE MINERALS LIMITED

NICO DEVELOPER'S ASSESSMENT REPORT

TITLE

GENERAL ARRANGEMENT PLAN OF THE CO-DISPOSAL FACILITY

Golder Associates

Edmonton, Alberta

FILE No: E-Miss-009-CAD.dwg				
PROJECT No: 09-1373-1004			SCALE AS SHOWN	REV. 0
DESIGN	IM	10 May. 2011	FIGURE: 2-1	
CAD	TDR	10 May. 2011		
CHECK	IM	10 May. 2011		
REVIEW	KAB	10 May. 2011		

PLOT DATE: May 10, 2011
FILENAME: T:\Projects\2010\10-1118-0046 (FML, NWT)\MA\10111800046MA002-1.dwg

- Mine access road; and
- Borrow Areas.

2.3 Mining and Processing

Based on the current estimate, the NICO Project has about 31 Mt of ore which will be mined using underground and Open Pit mining methods. The NICO Project will generate approximately 90.3 Mt of Mine Rock and 6.5 Mt of sub-economic mineralized rock during the mine life. The yearly mine plan of the NICO Project is given in Table 2-1. Mining will commence by extracting the richer ore zones using underground mining techniques, followed by advancing an Open Pit through the underground openings. All underground mining is planned to be completed within the first 2 years.

The Plant will be constructed at the NICO Project site for the purpose of creating a metallurgical concentrate, which will be thickened and dewatered to 9% moisture prior to packaging in bags suitable for transport to the off-site metallurgical facility for further processing. The nominal milling rate of the on-site plant will be approximately 1.7Mt/y.

The 4 components of the Plant are:

- the primary crusher and transfer tower;
- the secondary and tertiary crushing building and fine ore bin;
- the grinding bay; and
- the Plant.

Run-of-mine ore from underground and Open Pit operations will be stockpiled on the surface adjacent the crusher for blending purposes, and then fed by front-end loader to a primary jaw crusher. Secondary crushing will be completed by a cone crusher and the product will be screened, producing ore finer than 12 millimetres that will be conveyed to a fine ore stockpile or bin. Oversize will be further reduced by a tertiary crusher operating in a closed circuit with the screen.

The fine ore will be fed at a controlled rate to 2 parallel grinding circuits. Hydrocyclones will control the slurry particles to 80% finer than 72 microns. Water for the grinding operation will be obtained from recycled water recovered from a tailings thickener and reclaimed water from the Surge Pond.

Cyclone overflow slurry from the grinding circuit is be pumped to a flotation circuit. The flotation circuit will result in the production of 4 tailings products: the primary rougher tailings (91% of the total tailings), the primary cleaner scavenger tailings, the secondary rougher tailings (9.2 % of the overall tailings product), and the secondary cleaner scavenger tailings (less than 1% of the tailings product).

The primary rougher flotation circuit will produce the primary rougher concentration froth. The primary rougher concentration froth will fed to the primary cleaner and primary cleaner scavenger section. The products of the primary rougher flotation circuit are the primary rougher tailings, the primary cleaner scavenger tailings, and the primary cleaner concentrate.

Table 2-1: Proposed Production Schedule for the NICO Project

Year	Phase	Ore (t/y)			Mine Rock (t/y)				TOTAL MINED (t/y)
		Open Pit	Underground	Total	Open Pit	Underground	Sub-economic Mineralized Rock	Total	
2012	Phase 1A / 1B	222,477	95,878	318,355	1,160,871	26,682	62,592	1,250,145	1,568,500
2013	Phase 1A / 1B/Phase 2	547,872	1,150,538	1,698,410	4,812,352	24,627	118,496	4,955,475	6,653,885
2014	Phase 1A / 1B/Phase 2	805,189	893,220	1,698,409	8,843,957	-	331,897	9,175,854	10,874,263
2015	Phase 1A / 1B/Phase 2	1,698,408	-	1,698,408	9,214,204	-	657,469	9,871,673	11,570,081
2016	Phase 1B/ Phase 2	1,698,408	-	1,698,408	9,939,869	-	250,579	10,190,448	11,888,856
2017	Phase 1B/ Phase 2	1,698,408	-	1,698,408	6,489,199	-	304,433	6,793,632	8,492,040
2018	Phase 1B/ Phase 2	1,698,408	-	1,698,408	5,527,876	-	416,552	5,944,428	7,642,836
2019	Phase 1B/ Phase 2	1,698,408	-	1,698,408	5,777,623	-	166,805	5,944,428	7,642,836
2020	Phase 1B/ Phase 2	1,698,408	-	1,698,408	5,517,507	-	426,921	5,944,428	7,642,836
2021	Phase 1B/ Phase 2	1,698,408	-	1,698,408	4,482,004	-	190,164	4,672,168	6,370,576
2022	Phase 1B/ Phase 2/Phase 3	1,698,408	-	1,698,408	5,625,017	-	319,411	5,944,428	7,642,836
2023	1B/ Phase 2/Phase 3	1,698,408	-	1,698,408	4,540,589	-	554,635	5,095,224	6,793,632
2024	1B/ Phase 2/Phase 3	1,698,408	-	1,698,408	4,763,402	-	331,822	5,095,224	6,793,632
2025	Phase 3	1,698,408	-	1,698,408	4,363,639	-	391,903	4,755,542	6,453,950
2026	Phase 3	1,698,408	-	1,698,408	3,536,821	-	709,199	4,246,020	5,944,428
2027	Phase 3	1,698,408	-	1,698,408	1,244,946	-	419,494	1,664,440	3,362,848
2028	Phase 3	1,698,408	-	1,698,408	1,397,294	-	267,146	1,664,440	3,362,848
2029	Phase 3	1,698,408	-	1,698,408	1,450,688	-	213,752	1,664,440	3,362,848
2030	Phase 3	1,698,408	-	1,698,408	1,540,064	-	294,783	1,834,846	3,533,254
2031	Phase 3	150,682	-	150,682	102,654	-	41,431	144,085	294,767
TOTAL		**28,900,748**	**2,139,635**	**31,040,383**	**90,330,574**	**51,308**	**6,469,485**	**96,851,367**	**127,891,752**

The primary rougher tailings, resulting from the first concentration stage, will be dewatered and sent to the CDF. The primary cleaner scavenger tailings will proceed to the regrind circuit to be ground and cycloned to a particle size target of 80% passing 20 microns, before being collected and fed to the secondary rougher flotation circuit.

The secondary rougher flotation circuit consists of a bank of 5 flotation cells. Secondary rougher concentrate froths are collected from one side of the flotation cells. The secondary rougher concentrate froth flow is pumped to a separate secondary cleaner flotation stage similar to the primary cleaner-scavenger flotation stage. The last secondary rougher cell discharges a tailings product that is combined with the secondary cleaner scavenger tails. The tailings from the secondary rougher flotation circuit will be combined with the primary rougher tailings prior to discharge to the CDF.

The secondary cleaner and secondary cleaner scavenger section consists of a bank of 4 circular tank-type flotation cells. The flotation bank is configured such that secondary cleaner flotation is carried out in the first 2 cells, while secondary cleaner-scavenger flotation is undertaken in the final 2 cells. Potassium amyl xanthate collector is added to the first secondary cleaner and first secondary cleaner-scavenger cells. Secondary cleaner concentrate and secondary cleaner scavenger froths are collected from one side of the flotation cells, where the secondary cleaner concentrate froth (at a finer grind) is combined with the primary second cleaner concentrate and pumped to the concentrate thickener. The secondary cleaner-scavenger concentrate froth is pumped back to the regrind cyclone feed tank.

During periods of low gold values, the regrind circuit can be turned off. In this situation the primary cleaner-scavenger tails (1CST) is combined with the primary rougher tailings. To operate in this fashion, it would be necessary to campaign the feed to the plant over a number of days, and require strict stockpile control of the low grade material.

3.0 GEOLOGICAL SETTING

3.1 Regional Geology

The NICO Project site is located along the western limit of the Archean Slave craton, in the southern region of the Great Bear magmatic zone. The Great Bear magmatic zone extends from Great Slave Lake in the south to Great Bear Lake in the north.

The dominant regional lithologies are metasedimentary and felsic volcanic rocks. Clastic metasediments of the Snare Group include lithologies that range from siltstones to subarkosic wackes, and impure dolostones. Hydrothermal alteration during metamorphism resulted in the addition of iron and potassium to clastic metasediments of the Snare Group.

Felsic volcanic rocks of the Faber Group overlie the Snare Group metasediments. Lithologies of the Faber Group include rhyodacitic ignimbrites, tuffs and volcaniclastics. Faber Group volcanics were subject to intense potassium metasomatism (i.e., a type of metamorphism resulting chemical alteration of a rock by a hydrothermal fluid), resulting in the development of microcline. This metamorphic event imparted a ubiquitous orange-pink colour to the rocks.

Felsic to intermediate dykes transect the Snare Group sediments and Faber Group volcanics, including quartz-feldspar porphyry and feldspar-amphibole-quartz porphyry.

3.2 Site Geology

Ore occurs in a polymetallic, IOCG type deposit, also referred to as an “Olympic Dam” type deposit (Goad et al 2000). The NICO ore deposit, referred to as the “Bowl Zone”, is located on the northern slope of a bowl shaped depression (Figure 3-1).

Table 3-1 provides a description of the main lithological units identified at the NICO deposit.

Table 3-1: Description of Lithologies Present in the NICO Deposit

Group	Lithology	Description
Faber Group Volcanics	Rhyolite	Orange-red, fine-grained to feldspar-phyric felsic volcanic rock.
	Feldspar Porphyry	Intrusive felsic volcanic rock, containing feldspar phenocrysts, with variable amounts of quartz and amphibole.
	Quartz Feldspar Porphyry	Intrusive felsic volcanic rock, containing quartz and feldspar phenocrysts.
Snare Group Meta-sediments	BRS (+ magnetite) and BRS (± magnetite)	BRS (BRS) is the alteration product of wacke. BRS occurs both with magnetite (i.e., BRS + magnetite) and without magnetite (BRS ± magnetite).
	Breccia	Fragmental unit that contains close-set clasts of subarkosic wacke, siltstone and felsic material in a matrix of quart-feldspar-amphibole-biotite-magnetite.
	Subarkosic Wacke	Dark grey to black, non-bedded to thickly bedded wacke.
	Siltstone	Dark grey to black, fine grained siltstone common to the footwall, where they represent the basal stratigraphic unit of the metasedimentary sequence.

A thick package of siltstone is the lowest member of the stratigraphic column at the NICO Project. Siltstone is overlain by a widespread lithological package consisting dominantly of non-bedded to thickly bedded wacke. This wacke unit is locally altered to BRS + magnetite and BRS ± magnetite, which is the dominant host of ore grade mineralization. Metasedimentary rocks (i.e., BRS + magnetite and BRS ± magnetite and wacke) are considered as a single unit in the mine block model. The metasedimentary rocks are unconformably overlain by the Faber Group rhyolite; these volcanic rocks form the higher topography in the NICO Project area, including the ridge that defines the extent of the Bowl Zone. The breccia unit, which consists of a fragmental mixture of siltstone, wacke and felsic volcanic rock, exists at or near the contact between the Faber Group volcanics and Snare Group metasediments. Felsic intrusive rocks (i.e., feldspar porphyry and quartz-feldspar porphyry) cross cut the rocks of the Snare and Faber Groups.

512500

7047500

NICO-08-01
ROCK SAMPLE
RHYOLITE
WPT 500

NICO-08-02
ROCK SAMPLE

NICO-08-03
ROCK SAMPLE
RHYOLITE
WPT 501

OPEN PIT

NICO-08-04
ROCK SAMPLE
RHYOLITE

NICO-08-05
ROCK SAMPLE
RHYOLITE

NICO-08-06
ROCK SAMPLE
FELDSPAR PORPHYRY
WPT 514

NICO-08-08
ROCK SAMPLE
FELSIC ROCK
WPT 526

NICO-08-09
ROCK SAMPLE
SILTSTONE
WPT 529

NICO-08-10
ROCK SAMPLE
FELDSPAR PORPHYRY
WPT 530

NICO-08-06
ROCK SAMPLE
FELDSPAR PORPHYRY
WPT 514

PROCESS PLANT

BAMS

N

LEGEND

- INCLINED EXPLORATION HOLES WITH GEOCHEMISTRY SAMPLES
- INCLINED GEOTECHINCAL HOLES WITH GEOCHEMISTRY SAMPLES (GOLDER ASSOCIATES)
- OUTCROP ROCK SAMPLE LOCATION WITH GEOCHEMISTRY TESTING
- OUTCROP ROCK SAMPLE LOCATION WITH GEOCHEMISTRY TESTING AND SAMPLES FROM OUTCROP AT DRILLHOLE COLLARS
- PROJECT LEASE BOUNDARY
- PROPOSED NICO MINE SITE
- OPEN PIT
- CONTOUR (10 m INTERVAL)
- FAULTS

GEOLOGY

- QUARTZ VEINING
- 1B SUBARKOSIC ARENITE
- 1F CORDIERITE SCHIST
- 1W SUBARKOSIC WACKE
- 1A SILTSTONE
- BAMS BIOTITE-AMPHIBOLE-MAGNETITE SCHIST

FABER LAKE VOLCANIC SEQUENCE

FELSIC (RHYOLITE-RHYODACITE)

- 3A APHYRIC FLOWS
  3B TUFF, < 2MM
  3C LAPILLI TUFFS
  3D LOCALLY BRECCIATED
- 3H,G HETEROLITHIC BRECCIAS, DEBRIS FLOW

GREAT BEAR MAGMATIC ZONE

SUBVOLCANIC INTRUSIONS

- 6D FLEDSPAR-AMPHIBOLE PORPHYRY
- 6C QUARTZ PORPHYRY
- 6B QUARTZ-FELDSPAR PORPHYRY
- 6A FELDSPAR PORPHYRY

REFERENCE

Topographic mapping obtained from Eagle Mapping, Fortune Minerals Limited, 2006 (File: Basemapping FML, 20060718).dwg)

Open Pit Configuration - Provided by P & E Mining Consultants Inc. (File: End_of_year2031.dxf Received August 26, 2010)

Advanced Exploration Infrastructure - Provided by Aker Solutions (File: 0000g001D.dwg Received October 25, 2010)

Outcrop Bedrock Geology and Fault Lineation Interpretations provided by Fortune Minerals (2004).

Projection: UTM Zone11 Datum: NAD 83

100 0 500
SCALE 1:7,500 METRES

FORTUNE MINERALS LIMITED
NICO DEVELOPER'S ASSESSMENT REPORT

TITLE
PLAN VIEW OF SITE GEOLOGY AND LOCATION OF GEOCHEMICAL CHARACTERIZATION SAMPLES

Golder Associates
Edmonton, Alberta

FILE No. E-Miss-010-GIS.mxd

PROJECT NO. 09-1373-1004		SCALE AS SHOWN	REV. 0
DESIGN	SC	16 Feb. 2011	FIGURE: 3-1
GIS	SC	10 May. 2011	
CHECK	KS	10 May. 2011	
REVIEW	MR	10 May. 2011	

G:\Projects\2010\10-1118-0046_NicoFortuneMinerals\GIS\MXDs\FinalDAR Figures\GeochemistryBaseline\E-Miss-010-GIS.mxd

3.2.1 Alteration and Mineralization of Site Lithologies

Cobalt-gold-bismuth mineralization is associated with a regional scale metamorphic event, during which rocks of the Snare and Faber groups underwent iron and potassium metasomatism. This metamorphic event resulted in the alteration of wacke to variably mineralized ironstone (i.e., BRS) consisting of minerals including biotite [$K(Mg,Fe)_3AlSi_3O_{10}(OH,F)_2$], amphibole [$Ca_2(Mg,Fe,Al)_5Si_8O_{22}(OH)_2$], magnetite [$Fe_3O_4$], hematite [$Fe_2O_3$], feldspar [$KAlSi_3O_8$], chlorite and calcite [$CaCO_3$].

The ore deposit consists of sequence of 3 mineralized zones: the Upper, Middle, and Lower Zones. Ore grade mineralization is hosted by a package of metasedimentary rocks measuring 200 m thick. Gold mineralization is restricted to the Middle and Lower zones; the extent of cobalt-bismuth mineralization is much greater, extending throughout the Upper, Middle and Lower zones. The Lower/Middle zone and Middle/Upper zone boundaries are marked by units of less altered subarkosic wacke. Small lenses of mineralization also occur in the rhyolitic rock and altered quartz-feldspar porphyry dykes (Goad et al 2000).

Minerals that occur in mineralized zones include native bismuth, bismuth telluride, native gold and sulphide minerals including pyrrhotite [FeS], pyrite [FeS_2], chalcopyrite [$CuFeS_2$], bismuthinite [$B_{i2}S_3$], cobaltite [CoAsS], arsenopyrite [FeAsS]. The dominant sulphide minerals in the NICO ore body are pyrite, pyrrhotite, and arsenopyrite.

Metamorphic alteration and paragenesis (i.e., sequence of mineral formation) of the NICO ore deposit has key implications with respect to the distribution, texture, and abundance of sulphide minerals in ore and waste zones. The following summary of the paragenesis of the NICO ore deposit is paraphrased from Petrologic, Inc. (1999):

- During the first stage of alteration, metamorphism of the host rock (amphibolite wacke) resulted in the formation of non-economic minerals including pyrite [FeS_2], pyrrhotite [FeS], and magnetite [Fe_2O_3]. Amphibolite was altered to BRS. Iron oxides that were formed during this stage form up to 20% of mineralized zones (Goad et al 2000).
- Copper and gold mineralization occurred during the second stage of alteration. Copper occurs in chalcopyrite [$CuFeS_2$] and copper sulphosalts, whereas gold occurs as native gold as well in association with bismuth telluride, bismuthinite and feldspar [$KAlSi_3O_8$].
- Cobalt mineralization occurred during the third and fourth stages of alteration. Initially, cobalt was accumulated in cobaltite. During the fourth stage of alteration, cobaltite reacted with metasomatic alteration fluids rich in arsenic. Widespread precipitation of cobaltian arsenopyrite and bismuthinite occurred during this stage.
- In the fifth stage of alteration, arsenopyrite became the primary sulphide precipitating from the metasomatic fluids.
- Bismuth mineralization, in particular, began in the second stage of alteration, with the formation of native bismuth and bismuth tellurides. Bismuthinite crystallization occurred throughout the second, third, and fourth stage of alteration.

Owing to the sequence of metamorphic alteration, certain minerals occur within restricted zones of higher grade mineralization within the NICO ore deposit, including native gold and native bismuth, and bismuth tellurides. Native gold and native bismuth occur as disseminations, and in association with sulphide minerals. Similarly, the

occurrence of cobalt-bearing minerals is not widespread. Arsenopyrite occurs both in zones of higher grade mineralization and zones of weaker (i.e., non-ore grade) mineralization outside the ore body. Arsenopyrite and cobaltite are commonly aligned along foliation planes in the rock. Chalcopyrite, pyrrhotite and pyrite occur as localized fracture fillings and disseminations.

3.3 Mine Block Model

A mine block model has been generated for the NICO Project for the purpose of ore resource estimation and mine planning. The mine block model also provides key information required to support engineering designs for the NICO Project, including ore and Mine Rock volume estimates by phase of mining, and the distribution of various rock types and zones of mineralization within the Open Pit and underground mine workings.

The mine block model was developed using the exploration database for the NICO Project. The exploration dataset consists of 17 393 samples. All samples were analyzed for, at a minimum, cobalt, bismuth, copper, and arsenic. Select samples were analyzed for additional trace metals. Sample collection was performed by Fortune geologists; sample analysis took place under direction from Fortune.

The most recent version of the mine block model estimates an ore resource of approximately 31 Mt. Ore grade is based on Net Smelter Return (NSR), calculated based on gold, copper, bismuth, and cobalt concentrations. Table 3-2 summarizes the NSR criteria of ore, low grade ore and waste at the Project.

Table 3-2: Net Smelter Return Criteria for Ore, Low Grade Ore and Waste at the NICO Project

	NSR Criterion	Description
Ore	>= $48.07 / tonne	Ore grade material to report to ore stockpile or directly to the Plant.
Sub-economic Mineralized Mine Rock	$35.16 - $48.06 / tonne	Material to be placed in Co-Disposal Facility.
Waste	< $35.16 / tonne	Mine Rock to be classified according to geochemical characteristics prior to placement in the Co-Disposal Facility or use for site construction.

The 3-dimensional model was used to estimate the relative proportion of each lithology of Mine Rock and sub-economic mineralized Mine Rock that will be encountered during mining at the NICO Project (Table 3-3). Table 3-3 presents a high level overview of the relative proportion of each rock type that will be encountered during each stage of mining of the Open Pit. The summary in Table 3-3 is presented according to the lithological codes defined in the block model. It should be noted that the block model evaluates lithologies at a different scale than what was used to describe samples in exploration drill core logs. Table 3-3 relates the block model lithological definitions to the exploration drill core descriptions to the extent possible; however, high level simplifications were required to relate the geochemical dataset to the block model. For example, the lithological block model considers all BRS and subarkosic wacke as a single rock unit, identified as “wacke”. Non-economic rock contained within the ore zone boundaries (assumed to be wacke or BRS) is presented according to the ore zone in which it occurs (i.e., upper, middle, and lower ore zone). The relative percentages in Table 3-3 are presented for the purposes of performing a screening level evaluation only. The relative proportions will change as the NSR criteria for the ore cut-off change during the life of mine.

Table 3-3: Summary of the Relative Percentage of Each Lithology of Mine Rock Anticipated to be Encountered During Each Phase of Mining

Proportion of Mine Rock (< $35.16 / tonne)		Phase 1a	Phase 1+1a*	Phase 2	Phase 3
Block Model ID[a]	Description[b]	Relative Proportion According to Block Model[c]			
Wacke / Black Rock Schist					
10 + 15	Lower Mineralization Zone	10%	2%	2%	3%
20 + 25	Middle Mineralization Zone	2%	4%	5%	6%
30 + 35	Upper Mineralization Zone	0%	7%	5%	5%
400	Wacke / Black Rock Schist	83%	60%	52%	57%
300	Rhyolite (Volcanics)	5%	13%	23%	18%
100 + 200	Quartz Amphibole Porphyry Dykes / Feldspar Porphyry Dykes	0%	14%	14%	11%
500	Siltstone	0%	0%	0%	0%

[a] Lithological identification in mine block model.
[b] Description according to geochemical dataset.
[c] Relative proportion of each rock type that will be encountered during each phase of mining.

4.0 GEOCHEMICAL CHARACTERIZATION PROGRAM

4.1 Acid Rock Drainage and Metal Leaching at Mining Projects

When metal-bearing sulphide minerals that occur in rock are disturbed by mining processes, exposure to the atmosphere (i.e., oxygen and water) can enhance natural rates of chemical weathering. The reaction of sulphide minerals with atmospheric oxygen and water can release acidity, sulphate and trace metals to water that comes in contact with the disturbed materials.

As outlined in Section 3.2.1, sulphide minerals are distributed throughout Mine Rock, sub-economic Mine Rock, and ore lithologies at the NICO Project. Sulphide minerals include arsenopyrite [FeAsS], cobaltite [CoAsS], bismuthinite [Bi_2S_3], chalcopyrite [$CuFeS_2$], and pyrite [FeS_2]. Reactions 1 and 2 present the typical oxidation of pyrite and arsenopyrite, which are 2 of the most common sulphide minerals at the NICO Project.

$$FeS_2 + 7/2O_2 + H2O \leftrightarrow 2SO_4^{2-} + Fe^{2+} + 2H^+ \quad \text{(Reaction 1)}$$

$$FeAsS + 3.5\ O_2 + H_2O \leftrightarrow Fe^{3+} + HAsO_4^{2-} + SO_4^{2-} + H^+ \quad \text{(Reaction 2)}$$

Sulphide minerals represent the main source of acidity, or “acid potential” in geologic materials or mine wastes, such as Mine Rock, sub-economic mineralized Mine Rock or tailings. Acid generated by sulphide oxidation can be consumed by the dissolution minerals that have an inherent capacity to neutralize acid. The capability of a mineral to neutralize, or “buffer”, acidity is a function of its composition and weathering rate (i.e., mineral reaction rate). Carbonate minerals, such as calcite [$CaCO_3$] are highly reactive, basic minerals, and readily dissolve to neutralize acid (Reaction 3).

$CaCO_3 + H^+ \leftrightarrow Ca^{2+} + HCO_3^-$ (Reaction 3)

Silicate minerals such as quartz [SiO_2], feldspar [$KAlSi_3O_8$], and plagioclase [$CaAlSi_3O_8$] react slowly, and typically do not substantially contribute to the neutralization of acid rock drainage until (and unless) highly acidic conditions are achieved.

Acid rock drainage occurs when the acid potential (a reflection of the sulphide mineral content) exceeds the neutralization potential of a mine waste. The establishment of acidic conditions is often a catalyst for further sulphide oxidation: once acidic conditions have been established, the rate of sulphide oxidation increases due to bacterial mediation.

Oxidation of sulphide minerals and dissolution of soluble minerals in mine wastes rock may release metals to solution. Metal leaching from mine wastes can occur in both acidic and non-acidic conditions. Although most metals (e.g., cadmium, copper, lead) become more mobile under acidic conditions, some are also soluble under neutral conditions (e.g., zinc, arsenic, selenium, molybdenum). Metal mobility is governed by several processes. Some of the key processes that control metal mobility in mine contact waters include:

Reduction/oxidation (redox) state of the system: The redox state of a system, generally defined by the availability of oxygen, has key implications with respect to metal solubility. A change in the oxidation state of a metal can influence its capability to form complexes in solution, which can have implications with respect to solubility. Solid phases may dissolve as a result of variable redox conditions; vice versa, dissolved metals may precipitation from solution. Metal sorption is also frequently affected by redox conditions. Lastly, metals may encounter solubility constraints based on redox state.

Metal solubility controls: Mineral precipitation and/or dissolution, resulting from changes to the pH and redox state of a system, can control the metal concentrations in a system. Kinetic impediments may hinder the dissolution or formation of minerals. In addition, biological mediation and the presence of other competing ions may affect mineral solubility.

Solid-water metal partitioning (adsorption): Sorption involves formation of a layer of ions (often metal ions) on mineral particles and organic matter due to chemical interactions between dissolved ions and charged functional groups at the solid surface. Metal adsorption is impacted by a number of independent system variables, including the character of sorbate phases, surface charge on the solid sorbate phase, the concentration of the specific metal ion or competing ions in solution, metal complexation, and pH and redox state of the system.

4.2 Overview of the Geochemical Characterization Program

The geochemical characterization program was designed to evaluate the potential for generation of acid rock drainage and metal leaching from the various waste and low grade ore lithologies and tailings types at the NICO Project site. The geochemical characterization program developed in a staged approach, in response to changes to the NICO Project description and the availability of material for sampling and analysis.

Four types of samples were collected during the various stages of geochemical characterization at the NICO Project, as described in Appendix I:

- Exploration drill core samples, consisting of composite sub-samples of exploration drill core collected over a defined sample interval.

- Outcrop samples, comprising rock broken from exposed outcrop using a rock hammer.
- Run-of-Mine Rock samples, comprising grab samples collected from stockpiled ROM rock excavated during the collection of the bulk sample.
- Tailings samples, consisting of the products of laboratory metallurgical testing that were submitted for geochemical evaluation.

Table 4-1 provides a chronologic overview of the development of the geochemical characterization program for the NICO Project.

Table 4-1: Chronologic Overview of the NICO Project Geochemical Characterization Program

	Task	Sample Analysis
Mine Rock, Sub-economic Mineralized Mine Rock and Ore		
Pre-2004	Exploration drill core program and collection of over 17 000 drill core samples by Fortune Geologists for the purpose of chemical assay and resource definition.	Trace metal analysis.
2004	Collection of 8 composite samples of exploration drill core by Fortune geologists for the purpose of geochemical characterization	Acid base accounting, trace metal, and whole rock analysis and short-term leach testing on all samples.
2004	Collection of 169 samples of exploration drill core and 4 samples of outcrop for the purpose of geochemical characterization.	Acid base accounting, trace metal, and whole rock analysis on all samples, and short-term leach testing and humidity cell testing of select samples.
2008	Collection of 65 samples from stockpiles of run-of-mine sub-economic mineralized rock and ore placed on surface during the excavation of the underground bulk sample; including 5 larger samples for the construction of field scale tests. Three samples of exploration drill core and 10 samples of outcrop were also collected.	Acid base accounting, net acid generation testing (including comprehensive analysis of net acid generation leachates), trace metal analysis, whole rock analysis, and mineralogical analysis on select samples; short-term leach testing on all samples; and construction of field scale tests at the NICO Project site using 5 large samples collected from the bulk sample stockpiles.
2009	Select samples of run-of-Mine Rock (collected in 2008) and split samples of exploration drill core held in storage since the 2004 geochemical testing program submitted for follow-up analysis.	Select samples submitted for short-term leach testing; all samples submitted for trace metal analysis and total sulphur analysis.
Tailings		
2007 and 2008	Tailings generated at SGS Lakefield as part of pilot plant and bench scale metallurgical testing under the direction of Fortune.	
2009	Samples of select tailings products submitted for geochemical testing in January 2009.	ABA, NAG testing (including comprehensive analysis of NAG leachates), trace metal and whole rock analysis, mineralogical analysis, short-term leach testing, evaluation of decant water quality (including aging tests), humidity cell testing and construction of field scale tests at the Project site.

Table 4-1: Chronologic Overview of the NICO Project Geochemical Characterization Program (continued)

	Task	Sample Analysis
2010	Supplemental samples of tailings and process water generated at SGS as part of a pilot plant operation.	Process water submitted for comprehensive chemical anlaysis. Geochemical testing of tailings ongoing.

4.3 Sample Selection and Sample Collection

Mine Rock, sub-economic mineralized Mine Rock, ore, and tailings samples were collected over several sampling campaigns between 2004 and 2009, as summarized below. Tables 4-2 and 4-3 summarize Mine Rock, sub-economic mineralized Mine Rock, ore, and tailings samples collected in support of the geochemical characterization program. A detailed overview of the methods of sample selection and sample collection is provided in Appendix II.

4.3.1 Exploration Drill Core Samples

Samples of exploration drill core were collected by a Golder geochemist in 2004 (169 samples) and 2008 (3 samples). Eight composite samples were collected by Fortune geologists prior to the start of the 2004 Golder geochemistry program.

During both stages of sample collection conducted by Golder (i.e., 2004 and 2008), drill core samples were selected from existing exploration drill core based on drill core logs provided by Fortune geologists. Samples were selected based on the relative proportion and spatial distribution of various rock types within the NICO ore deposit. The sample selection process was designed to achieve a final selection that captured the spatial (lateral and vertical) distribution of each lithology. Exploration drill holes sampled as part of the geochemical characterization program are presented in plan view in Figure 3-1.

Appendix III presents the location of drill core samples within the outline of the proposed Open Pit. Because most samples of exploration drill core were collected in 2004 (i.e., prior to the completion of the mine plan), some samples are located outside of the ultimate Open Pit.

The spatial location of the exploration drill core samples was evaluated in the context of the perimeter of the proposed Open Pit. Mine Rock sample selection was the focus of the 2004 and 2008 drill core sampling program.

Table 4-2: Geochemical Characterization of Mine Rock, Sub-Economic Mineralized Mine Rock and Ore Conducted in Support of the NICO Project

	Total Sulphur	ABA	Comprehensive Trace Metal Analysis	Mineralogical Analysis	NAG	Short-Term Leach Testing			Kinetic Testing	
						NAG Leachate Analysis	SFE	SPLP	HCT	Field Cells
Feldspar amphibole porphyry / Quartz amphibole porphyry	43	34	43		1		2	13	2	
Rhyolite	51	40	51		2	2	1	14	3	
Siltstone	19	19	19					8	1	
Black Rock Schist	83	67	83					34	5	
Wacke	35	25	35					11		
Breccia / Fault Zone	13	10	13					4	1	
Sub-economic mineralized Mine Rock (ROM stockpiles)	20	20	23	4	20	12	46			4
Ore (ROM Stockpiles)	17	17	42	1	17	10	19		0	1
Total	**281**	**232**	**309**		**40**	**24**	**68**	**84**	**12**	**5**

ABA = acid base accounting; HCT = humidity cells tests; NAG = net acid generation; ROM = run-of-mine; SFE = shake flask extraction; SPLP = synthetic leachate precipitation procedure

Table 4-3: Geochemical Characterization of Tailings Conducted in Support of the NICO Project

	Stream	Mineralogy	Metal Analysis	ABA	NAG and NAG Leachate Analysis	SPLP	Decant Water Quality Analysis	HCT	Field Cell Testing
Tailings									
Bulk Rougher Tailings	Bulk rougher flotation circuit	1	1	1	1	1	1	1	3
Bulk Cleaner Tailings	Bulk cleaner flotation circuit	1	1	1	1	1			
Blended Tailings									
PP#14	Combined flotation tailings for average ore grade after 2 years of mine life	1	1	1	1	1	1	1	

ABA = acid base accounting; HCT = humidity cells tests; NAG = net acid generation; SPLP = synthetic leachate precipitation procedure

4.3.2 Outcrop Samples

Samples were collected from exposed bedrock surface outcrops for the purpose of supplementing the geochemical data set and evaluating potential borrow sources. Figure 3-1 presents the location of outcrop samples collected in 2004 and 2008.

4.3.3 Sub-Economic Mineralized Mine Rock and Ore Samples

A 250 t bulk sample was excavated from an underground tunnel at the NICO Project in 2006 and 2007. Stockpiles of ore and sub-economic mineralized rock were placed in 34 individual surface stockpiles during the excavation of the underground bulk exploration sample in 2006 and 2007. Fortune geologists segregated the rock piles according to the date which the material was mined: 15 piles consisted of material mined in October 2006, 5 of material mined in March 2007, and 14 of material mined in August 2007. According to Fortune geologists, BRS was the main rock type in 33 of the piles, and one rock pile consisted of (dominantly) feldspar porphyry.

During the excavation of the bulk sample, Fortune geologists collected sub-samples of rock from each pile. These samples were submitted for assay of gold, arsenic, bismuth, cobalt, and copper. Prior to the 2008 sample collection, the assay values were used to designate each pile as sub-economic mineralized rock or ore according to the NSR criteria at the time of sample collection in 2008. Appendix I-3 classifies rock as ore or sub-economic mineralized rock based on the estimated NSR at the time of sample collection. Rock was placed in these stockpiles during the advancement of the underground ramp within the ore zone; therefore, it is reasonable to assume that all non-ore grade rock collected from the stockpiles represents material that will be encountered in close proximity to mineralized zones.

A total of 65 grab samples were collected from the stockpiled ROM rock in 2008 to further evaluate the characteristics of ore and sub-economic mineralized rock. Five larger scale samples were collected for the purpose of construction of field scale tests.

4.3.4 Tailings

Samples of the tailings products were generated during pilot plant testing conducted at SGS Lakefield, under the direction of Fortune. Tailings samples were collected by SGS Lakefield following the completion of pilot plant testing. Samples of the bulk rougher and bulk cleaner tailings, respectively, were submitted for geochemical characterization in order to evaluate the composition of the potential tailings products.

PP#14 is a mixture of multiple tailings products, which were generated by SGS Lakefield under the direction of Fortune. PP#14 consists of combined bulk rougher and bulk cleaner flotation tailings, representative of material that would be produced after the first 2 years of mining.

4.4 Analytical Program

Tables 4-2 and 4-3 summarize the number of samples and analytical testing that was completed for the Mine Rock and ore, and tailings geochemical characterization programs. A detailed overview of the sample analysis program is provided in Appendix II. A brief summary is provided below.

Acid generation potential and metal-leaching rates were evaluated for each rock type using standard laboratory static and kinetic testing methods, consistent with the recommendations in Price (1997) and MEND (2009). Field scale evaluation of Mine Rock and ore was initiated at the NICO Project site in 2008.

Static and kinetic laboratory testing of Mine Rock, ore, and tailings took place at SGS Lakefield in Lakefield, Ontario, including the following tests:

- mineralogical analysis (X-ray diffraction (XRD) including Rietveld refinement);
- trace metal analysis;
- acid base accounting;
- net acid generation testing including comprehensive analysis of NAG leachates;
- short-term leach testing using the SPLP and SFE methods;
- analysis of tailings decant water, including aging tests; and
- humidity cell testing.

Field cell leachate samples are collected bi-monthly during the spring freshet (typically May or June), and monthly between June and September. Analysis of leachates collected from the field cells installed at the NICO Project site is conducted at ALS Environmental in Edmonton, Alberta.

5.0 RESULTS AND DATA EVALUATION

5.1 Mineralogy

5.1.1 Overview

The mineralogical composition of a sample can provide insight into the long-term geochemical behaviour of a material. The purpose of mineralogical analysis was to identify the mineral phases present in sub-economic mineralized rock, ore and tailings samples that could be a source of acidity, neutralization capacity or metals.

5.1.2 Sample Selection

A total of 9 samples were submitted for mineralogical analysis, including the following:

- 4 sub-samples of the sub-economic mineralized rock used to construct the field cells at the NICO Project site (FC-1 through FC-4). This rock was collected from the ROM stockpiles placed during the extraction of the bulk sample.
- One sub-sample of ore used to construct the ore field cell at the NICO Project site (FC-5). This material was also collected from the ROM stockpiles.
- 3 samples of tailings generated during metallurgical testing at SGS Lakefield.

5.1.3 Data Analysis

Rietveld XRD detects the crystalline mineral phases present in a sample, normalizing mineral quantities to 100%. The results of mineralogical analysis were evaluated with respect to the occurrence and quantity of: 1) principal minerals in the rock matrix; 2) the presence of carbonate minerals, which serve as a measure of the neutralization potential of the rock sample; 3) the presence of sulphide minerals, which indicate the acid generation potential of a sample; and 4) alteration and oxidation products detected in the sample.

For the purpose of this evaluation, the occurrence of minerals is discussed with respect to relative quantities measured in each sample. “Major” mineral phases occur in abundances greater than 10% and “minor” phases occur in abundances between 1 and 10%. “Trace” minerals are defined as phases that occur in abundances less than 1%.

The mineralogical quantities reported by XRD might not represent the full mineralogical compositions of the samples. XRD cannot identify amorphous phases, and therefore semi-crystalline precipitate minerals may not be fully represented by the results of XRD. Diffraction peak overlap between minerals can cause peaks to be exaggerated, obscured or misidentified. In addition, trace concentrations of minerals are difficult to identify due to the limitations of the analytical method: as a rule-of-thumb, the minimum detection limit for XRD is approximately 1%.

5.1.4 Results

Appendix IV-1 presents the quantitative mineralogical composition of sub-economic mineralized rock, ore, and tailings samples tested using Rietveld XRD.

5.1.4.1 Sub-Economic Mineralized Mine Rock and Ore

Mineralogical analysis was performed on one sample of mixed, mineralized feldspar porphyry and BRS (± magnetite):

- Major mineral phases (i.e., > 10%) included silicate minerals such as microcline [$KAlSi_3O_8$], albite [$NaAlSi_3O_8$], quartz [SiO_2] and siderophyllite [$KFe^{2+}Al(Al_2Si_2)O_{10}(F,OH)_2$].
- Minor minerals included ferrohornblende [$(Ca,Na)_{2-3}(Fe,Mg,Al)_5Si_8O_{22}(OH,F)_2$], actinolite [$Ca_2(Mg,Fe)_5Si_8O_{22}(OH)_2$], clinochlore [$(Mg,Fe^{2+})_5Al(Si_3Al)O_{10}(OH)_8$], biotite [$K(Mg,Fe)_3AlSi_3O_{10}(OH,F)_2$], and diopside [$MgCaSi_2O_8$].
- Oxide minerals including ilmenite [$FeTiO_3$] and magnetite [Fe_3O_4] were present in minor amounts.
- No sulphide or carbonate minerals were identified by XRD, indicating that these minerals occurred at concentrations less than 1%.

The mineralogical composition of samples of sub-economic mineralized Mine Rock (BRS (± magnetite)), analyzed in 3 samples, was as follows:

- The dominant mineralogical phases were silicate minerals, including ferrohornblende, omphacite, diopside, and microcline.
- Minor minerals included tremolite, albite, quartz, biotite, siderophyllite, kaolinite, and forsterite. Ilmenite and magnetite were present in minor amounts.
- No carbonate or sulphide minerals were identified by XRD.

One sample of ore (BRS (± magnetite)) was submitted for mineralogical analysis. The mineralogical composition of ore was generally similar to that of Mine Rock, dominated by silicate minerals with no detectable carbonate minerals. FC-5 contained 6.5% arsenopyrite [FeAsS] and 2% pyrite [FeS_2].

5.1.4.2 Tailings

Mineralogical evaluation of tailings samples indicated the following:

- Actinolite accounted for more than 50% of the total composition of bulk rougher tails, bulk cleaner tails, and sample PP#14. The next most common mineral phase in tailings samples was biotite, with abundances varying from 14 to 22%.
- Minor mineral phases in tailings samples included magnetite (4.3 to 8.5%), diopside (5.7 to 8.2%), quartz (3.3 to 4.3%), and calcite (1.6 to 2.2%).
- Claudetite [As_2O_3] occurred in minor concentrations (1.3 to 1.9%) in the bulk tails and sample PP#14.

5.2 Trace Element Analysis

5.2.1 Overview

Trace element analysis was performed to characterize the solid phase composition of Mine Rock, sub-economic mineralized Mine Rock, ore, and tailings. The results of trace element analysis provide a basis for comparison of samples between and within lithologies. When compared to reference values, the relative concentrations of trace metals can be used to identify parameters that may require further consideration with respect to material handling and site discharges.

5.2.2 Sample Selection

Trace element chemistry is available for the following samples:

- 169 samples of drill core (Mine Rock and ore) collected by Golder, and 8 samples of drill core collected by Fortune were submitted for trace metal analysis in 2004 (Appendix IV-2a). In addition, 3 samples of drill core collected by Golder were submitted for trace metal analysis in 2008.
  - 50 of the drill core samples collected in 2004 were submitted for confirmation analysis in 2009 to achieve lower analytical detection limits for select metals (mainly selenium).
- 14 grab samples of outcrop, including 4 samples collected from the portal area in 2004 and 10 samples collected from various outcrops at the NICO Project site, were submitted for trace metal analysis (Appendix IV-2a).
- 42 samples of ore and 23 samples of sub-economic mineralized rock were collected from ROM stockpiles in 2008 (Appendix IV-2b).
- 3 samples of tailings, resulting from metallurgical testing, were submitted for trace metal analysis in 2009 (Appendix IV-2c).

5.2.3 Data Analysis

The results of trace metal analysis were compared to the typical crustal abundances of elements presented in Price (1997) to qualitatively identify elements that occurred at significantly elevated concentrations in Mine Rock, ore and tailings samples. A qualitative evaluation of trace metal composition was performed on samples of Mine Rock, ore and tailings.

In addition to the qualitative evaluation, summary statistics were calculated for samples of Mine Rock, sub-economic mineralized rock, and ore (Appendix IV-2a and Appendix IV-2b). Statistical correlation was used to assess elemental associations in samples of Mine Rock, sub-economic mineralized rock, and ore from the NICO deposit. When supplemented with the known mineralogy of a rock type, element associations can be used to infer the minerals in which trace metals occur. Correlation matrices were developed for solid phase metal concentrations in samples of Mine Rock (i.e., exploration drill core and outcrop), sub-economic mineralized rock (i.e., ROM rock samples) and ore (ROM rock samples and exploration drill core classified as ore). The correlation coefficient (R) values presented in Appendix V, are ratios that relate the covariance of 2 independent variables; a correlation coefficient of 1 indicates a direct relationship between 2 variables, and -1 indicates an inversely proportional relationship (Davis 1986). The typical interpretation of the correlation coefficient uses a cut-off of 0.75 / -0.75 to infer a statistically meaningful correlation.

5.2.4 Results

5.2.4.1 Mine Rock, Sub-Economic Mineralized Mine Rock and Ore

Appendix IV-2 Summarizes trace element concentrations in samples of Mine Rock, sub-economic mineralized Mine Rock and ore. Trace element concentrations were compared to the average crustal abundances of elements in Price (1997) to qualitatively identify metals with elevated solid phase concentrations. Trace metals with concentrations greater than 5 and 10 times the average crustal abundances were as follows:

- Arsenic, bismuth, and antimony occurred at concentrations 10 times greater than the average crustal abundance in samples from all Mine Rock, sub-economic mineralized rock and ore lithologies.
- Molybdenum occurs at concentrations 5 times greater than the average crustal abundance in samples of rhyolite, sub-economic mineralized rock and ore. Samples of sub-economic mineralized rock and ore report copper concentrations 5 times greater than the average crustal abundance.
- Cobalt concentrations vary from 5 to 10 times greater than average crustal abundances in samples from most Mine Rock, sub-economic mineralized rock and ore lithologies.

Elevated concentrations of bismuth, cobalt, and arsenic, in particular, are considered reasonable in the context of the nature of mineralization in the deposit.

Statistical correlation was used to assess elemental associations in samples of Mine Rock, sub-economic mineralized rock, and ore. When supplemented with the known mineralogy of a rock type, element associations can be used to infer the mineralogical host of trace metals.

As outlined in Section 5.1, 2 main varieties of mineralization are present at the NICO deposit: mineralization associated with sulphide minerals, and mineralization associated with bismuth minerals. Table 5-1 summarizes correlation coefficients for metals that occurred at elevated concentrations in Mine Rock and ore (i.e., arsenic, bismuth, antimony, cobalt, molybdenum, and selenium) with sulphur. This table also summarizes correlation coefficients of select metals with bismuth. The purpose of this evaluation is to determine the solid phase distribution (i.e., correlation) of certain metals in Mine Rock, sub-economic mineralized rock and ore.

- Unique metal correlations were noted in Mine Rock, relative to sub-economic mineralized Mine Rock and ore. Metal correlations with sulphide and/or bismuth were better defined in sub-economic mineralized Mine

Rock and ore. The correlation of metals with sulphide and bismuth in Mine Rock (i.e., drill core and outcrop) samples is poorly defined.

- In sub-economic mineralized Mine Rock (i.e., ROM samples), arsenic and cobalt correlate with sulphide, and selenium and molybdenum with bismuth:
  - Selenium and bismuth do not correlate with sulphur in the solid phase. This result is consistent with the description of the mineralogical occurrence of bismuth in the ore zone (Petrologic Inc. 1999). Bismuth mineralization typically occurs as native bismuth and bismuth telluride [$BiTe_3$], with less common bismuthinite [Bi_2S_3], and bismuth sulphosalts (Petrologic Inc, 1999).
  - Arsenic and cobalt correlate strongly with sulphur in sub-economic mineralized rock and ore. In mineralized zones, arsenic and cobalt are hosted by sulphide minerals including arsenopyrite [FeAsS], cobaltite [(Co,Fe)AsS], and cobaltian arsenopyrite (Petrologic Inc, 1999).
- Antimony did not consistently correlate with bismuth or sulphide in Mine Rock, sub-economic mineralized Mine Rock or ore.

5.2.4.2 Tailings

Concentrations of select trace metals in tailings are compared to the concentration range of the same metals in samples of Mine Rock and ore in Figure 5-1. Statistical analysis was not performed on tailings samples, as only one sample of each tailings product was submitted for testing.

The trace metal composition of tailings is consistent with the results of trace metal analysis of Mine Rock, sub-economic mineralized Mine Rock and ore. All tailings samples reported elevated concentrations of arsenic, bismuth, antimony, and selenium. Concentrations of these parameters were greater than 10 times the average crustal abundances. Metals that occur at elevated concentrations in select samples of tailings include molybdenum (bulk cleaner tailings), cobalt (bulk cleaner tailings), and cadmium (PP#14).

Table 5-1: Correlation Coefficients for Sulphide and Bismuth with Select Trace Metals in Mine Rock, Sub-Economic Mineralized Mine Rock, and Ore

	Sulphide Correlation Coefficients (R)						Bismuth Correlation Coefficients(R)				
	As	Bi	Sb	Co	Mo	Se	As	Sb	Co	Mo	Se
Mine Rock (Drill Core and Outcrop Samples)											
Feldspar Porphyry	0.10	-0.02	-0.02	0.17	-0.01	---	0.07	0.08	-0.07	0.04	---
Rhyolite	0.43	0.15	0.28	0.25	0.38	***0.99***	0.73	***0.89***	0.56	0.32	***0.90***
Breccia	0.71	0.27	0.38	***0.99***	***0.96***	---	-0.03	-0.65	0.21	0.35	---
BRS (+ magnetite)	0.33	0.12	0.08	0.13	-0.10	---	-0.01	0.25	0.30	-0.21	---
BRS (± magnetite)	0.08	0.02	0.04	-0.12	-0.10	---	0.30	0.39	0.17	0.33	---
Sub-Arkosic Wacke	***0.82***	-0.06	0.45	0.07	0.26	---	-0.05	0.25	0.22	-0.03	***1.00***
Siltstone	***0.95***	0.41	0.65	0.31	0.09	---	0.55	0.51	0.22	0.38	---
Sub-economic mineralized rock (ROM Stockpiles)											
BRS (± magnetite) (ROM Stockpiles)	***0.90***	-0.50	0.35	0.63	-0.42	-0.51	-0.25	0.65	-0.63	***0.87***	***0.99***
Feldspar Porphyry (ROM Stockpiles)	***0.81***	-0.53	0.39	0.70	-0.45	***0.84***	-0.24	0.45	-0.14	***0.78***	***-0.83***
Ore (ROM Stockpiles)											
BRS (± magnetite) (ROM Stockpiles)	***0.96***	-0.48	0.38	***0.84***	-0.32	-0.23	-0.23	0.73	-0.40	0.18	***0.82***

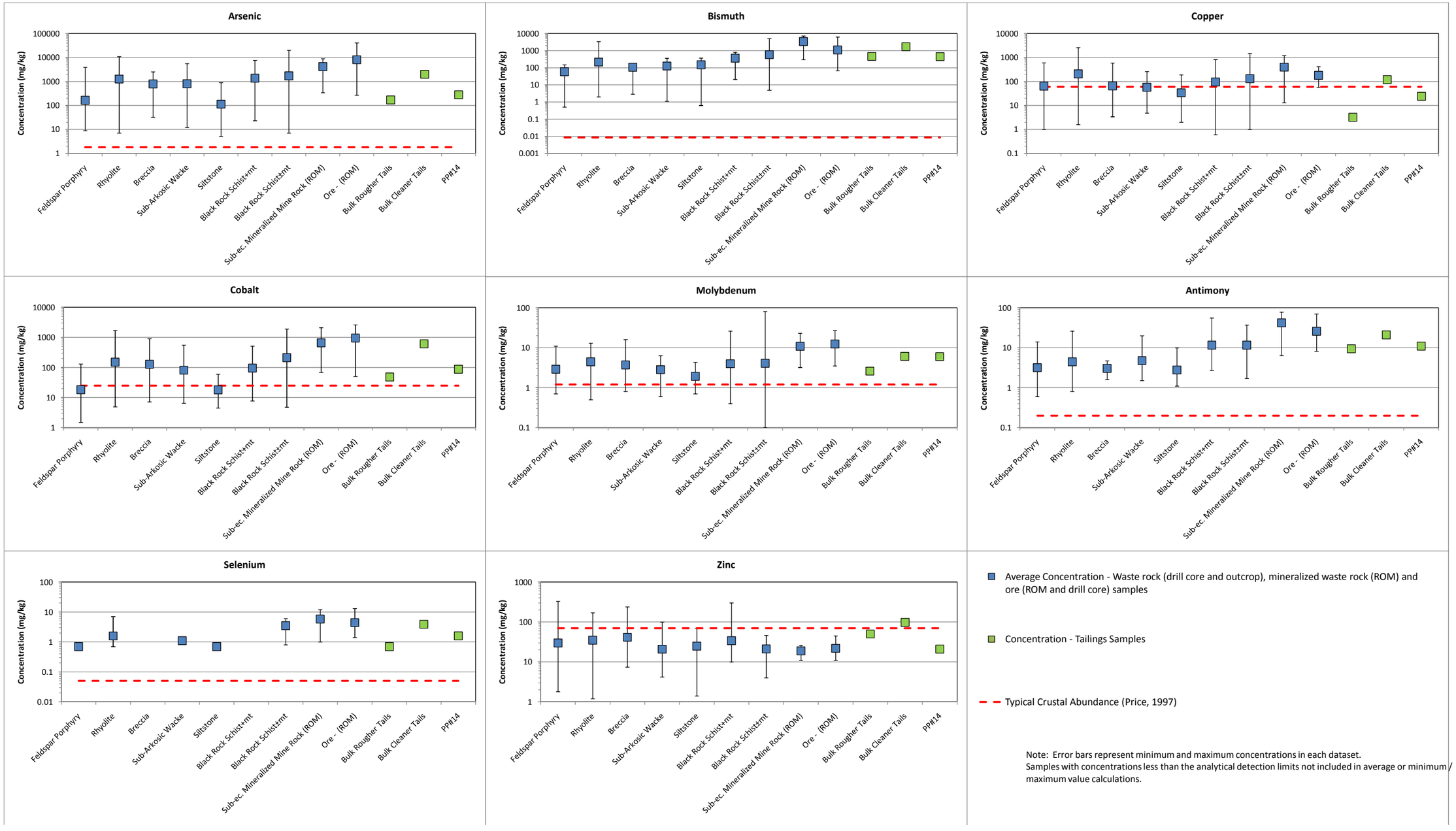
Concentrations less than the analytical detection limit not included in correlation coefficient calculations.

"---" indicates that a correlation coefficient could not be calculated owing to lack of data (i.e., concentrations less than the analytical detection limit).

Correlation coefficients highlighted in ***bold italic*** font are >0.75 or <-0.75.

As = arsenic; Bi = bismuth; Co = copper; Mo = molybdenum; Sb = antimony; Se = selenium; ROM = run-of-mine

Figure 5-1
Whisker Diagrams by Rock Type for Select Trace Metal Concentrations - Waste Rock and Low Grade Ore



5.3 Acid Base Accounting and Net Acid Generation Testing

5.3.1 Overview

Acid base accounting was performed to evaluate the acid generation potential of Mine Rock, sub-economic mineralized rock, ore, and tailings samples. Acid generation potential was assessed as a function of the balance between acid producing and acid neutralizing minerals in a sample.

Acid potential was calculated using sulphide-sulphur, assuming that sulphide minerals (such as pyrite, arsenopyrite, and cobaltite) are the dominant source of sulphur. Total sulphur concentrations often include amounts of oxidized, non-reactive forms of sulphur, such as sulphate. Although the dissolution of sulphate minerals can contribute some AP in the short-term, sulphate minerals do not generally contribute to the long-term acid generation potential of a material. Therefore, calculation of AP using sulphide-sulphur, rather than total sulphur, avoids the overestimation of AP.

Bulk NP was measured by titration. Neutralization potential is a measurement of all forms of NP contained in a sample (Sobek et al. 1978). Carbonate NP was calculated using total carbonate concentrations. Carbonate NP is a measure of the NP attributable to carbonate mineral dissolution in a sample. When bulk NP is approximately equal to CaNP, NP is likely attributable to the dissolution of carbonate minerals. In cases where the bulk NP is significantly greater than CaNP, the bulk NP could be overestimated due to the dissolution of silicate minerals. The kinetics of silicate mineral dissolution are generally too slow to provide effective buffering capacity; silicate minerals typically only provide substantial NP if (and when) acidic conditions develop. If CaNP significantly exceeds bulk NP, it is probable that CaNP reflects the dissolution of metal carbonate minerals (i.e., siderite [$FeCO_3$] and rhodochrosite [$MnCO_3$]), which contribute no net buffering capacity upon dissolution.

Select samples of Mine Rock, sub-economic mineralized rock, ore, and tailings samples were submitted for NAG testing. The purpose of the NAG test is to promote complete oxidation of all sulfide minerals using hydrogen peroxide. The pH of the oxidized solution provides an indication of the buffering capacity of a sample upon the complete oxidation of all sulphide minerals in a sample, and dissolution of all mineral phases capable of contributing NP in the oxidizing test condition.

5.3.2 Sample Selection

The results of ABA are available for the following samples:

- 169 samples of drill core collected by Golder, and 8 samples of drill core collected by Fortune were submitted for ABA in 2004 (Appendix IV-3a). Three samples of drill core collected by Golder were submitted for ABA in 2008.
  - 50 of the drill core samples collected in 2004 were submitted for total sulphur analysis in 2009 as part of the follow-up, confirmation program. These samples are labelled as “-follow up” in Appendix IV-3a.
- 14 samples of outcrop, including 4 samples collected from the portal area in 2004 and 10 samples collected from various outcrops at the NICO Project site, were submitted for ABA (Appendix IV-3a).
- A sub-set of the ROM sample set was submitted for ABA, including 17 samples of ore and 20 samples of sub-economic mineralized Mine Rock collected from ROM stockpiles in 2008 (Appendix IV-3b).
- 3 samples of tailings, resulting from metallurgical testing, were submitted for ABA in 2009 (Appendix IV-3c).

Net acid generation testing was performed on the following samples:

- 3 samples of drill core collected in 2008 were submitted for NAG testing (Appendix IV-3a).
- Net acid generation testing was performed on 17 samples of ore and 20 samples of sub-economic mineralized Mine Rock collected from the ROM stockpiles in 2008 (Appendix IV-3b). Net acid generation testing was performed according to the standard test method (i.e., samples crushed and ground to 9.5 mm) on all samples. A sub-set of 7 samples underwent NAG testing with no grain size reduction (i.e., samples tested as received) to evaluate the effect of grain size reduction on the results of NAG testing.
- 3 tailings samples underwent NAG testing in 2009 (Appendix IV-3c).

5.3.3 Data Analysis

A screening level evaluation of the acid generation potential of Mine Rock, sub-economic mineralized Mine Rock, ore, and tailings was conducted using a combination of mineral (sulphide) abundance, the results of ABA, and the results of NAG testing. At a screening level, acid generation potential was assigned to each sample according to the NP to AP ratio (NP/AP). The NP/AP ratio was interpreted according to the commonly used guidelines recommended by Price (1997), as summarized in Table 5-2.

Table 5-2: Acid Rock Drainage Screening Criteria (after Price 1997)

Potential for Acid Rock Drainage	Criteria	Comments
Likely	NP/AP <1	Likely acid generating, unless sulphide minerals are non-reactive.
Uncertain	1< NP/AP <2	Possibly acid generating if NP is insufficiently reactive or is depleted at a rate faster than sulphides.
Low	2< NP/AP <4	Not potentially acid generating unless significant preferential exposure of sulphides along fractures planes, or extremely reactive sulphides in combination with insufficiently reactive NP.
Unlikely	NP/AP > 4	Not expected to generate acidity.

AP = acid potential; NP = neutralization potential

The results of NAG testing were then used to confirm the acid generation potential indicated by the ABA evaluation. During the NAG test, sulphide minerals in a sample are completely oxidized with hydrogen peroxide. The acidity generated by sulphide oxidation is in turn consumed by the dissolution of neutralizing minerals. The pH of the resulting solution is an indication of the propensity of the sample to generate acidity, since the test is an inherent measure of the relative proportion of acid generating and acid consuming mineral phases.

The results of NAG testing were assessed according to the typical interpretation recommended by AMIRA (2002):

- NAG pH values greater than 4.5 indicate that a sample is unlikely to be potential acid generating.
- NAG pH values less than 4.5 indicate that a sample could generate acidity upon the complete oxidation of sulphide minerals and dissolution of minerals that are soluble in the highly oxidizing conditions that exist at the completion of the NAG test.

Sulphide-sulphur concentrations are also commonly used to classify rock with respect to acid generation since very low sulphide concentrations do not possess substantial potential for generation of long term acidity. The sulphide values can often be rapidly assessed during operational monitoring and as such are often used as operational indicators for acid generation potential for the purposes of waste management. As such, the measured sulphide-sulphur concentrations were evaluated in the context of the NP/AP ratio of rock samples and NAG-pH. The purpose of this evaluation was to determine if a screening level cut-off concentration that can be used to classify "potentially acid generating" from "non acid generating" rock.

In addition to the above static tests, acid generation potential was confirmed with short-term and long-term laboratory leach testing, and the field tests that are currently underway at the NICO Project site. This is necessary since, for several reasons, no single NP/AP ratio, sulphide-sulphur concentration, or NAG-pH has universal applicability with respect to acid generation prediction. The actual threshold values for a particular solid are material specific, and could depend on several factors, including: the relative proportion and concentration of acid generating and acid neutralizing minerals; the morphology (i.e., grain size, texture and crystallinity) acid generating and acid neutralizing minerals; the chemical composition of the constituent minerals in a sample; and, rock texture and site specific exposure conditions.

5.3.4 Results

5.3.4.1 Mine Rock, Sub-Economic Mineralized Mine Rock, and Ore

Detailed results of ABA and NAG testing of samples Mine Rock, sub-economic mineralized rock, ore, and tailings are presented in Appendix IV-3. Figures 5-2 through 5-7 present select results of ABA and NAG testing.

The total sulphur content of Mine Rock samples (including drill core, outcrop samples and bulk sample stockpile samples) ranged from <0.01 to 1.60%. The dominant sulphur species in all lithologies of Mine Rock was sulphide-sulphur (Figure 5-2). With the exception of one sample of breccia, all samples of feldspar porphyry, wacke, siltstone and breccia Mine Rock contained less than 0.3% sulphide-sulphur. The sulphide-sulphur content of rhyolite and BRS Mine Rock was greater, ranging from <0.01 to 1.4% in rhyolite, <0.01 to 0.35% in BRS (+magnetite), and from <0.01 to 1.4% in BRS (±magnetite).

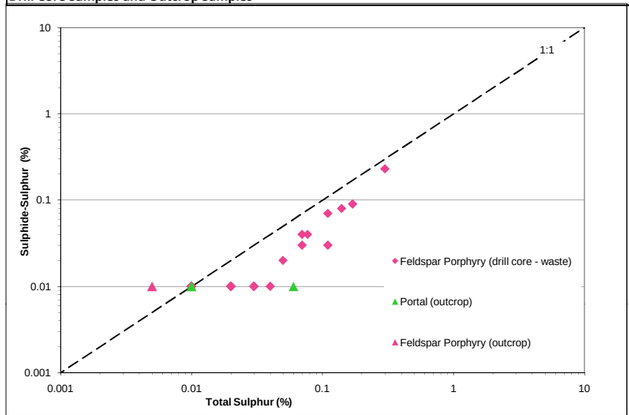
The NP of Mine Rock samples varied from -13.6 to 190 t $CaCO_3$ / 1000 t (Figure 5-3). Several samples reported negative bulk NP values, indicating the presence of stored mineral acidity in the sample. One sample of drill core, representative of a fault zone, contained 190 t CaCO3 / 1000 t NP. Neutralization potential was less than 10 t $CaCO_3$ /1000 t in most Mine Rock samples.

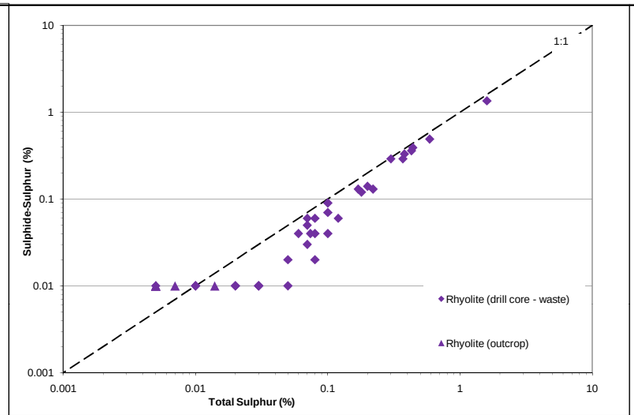
The total carbon content of Mine Rock samples ranged from <0.01 to 2.62%. Carbonate NP calculated using the inorganic carbon concentrations, was less than the bulk NP in all but 7 Mine Rock samples (Figure 5-3). The dominance of NP indicates that the dissolution of non-carbonate minerals (i.e., silicate minerals) contributed to the measurement of bulk NP.

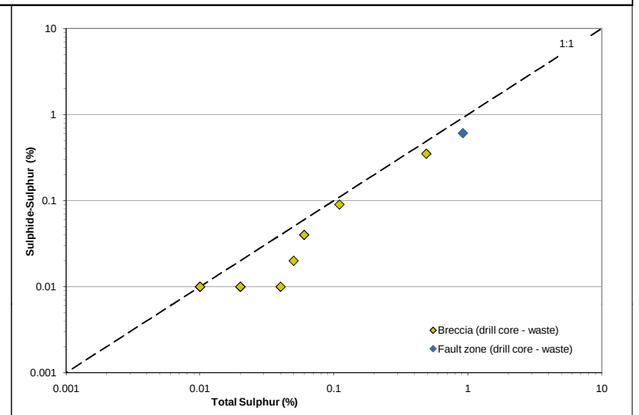
Sub-economic mineralized rock samples reported total sulphur concentrations that ranged from 0.059 to 0.628% (0.02 to 0.6 % sulphide-sulphur). The NP of sub-economic mineralized rock samples ranged from 7.9 to 18.1 t $CaCO_3$ / 1000 t.

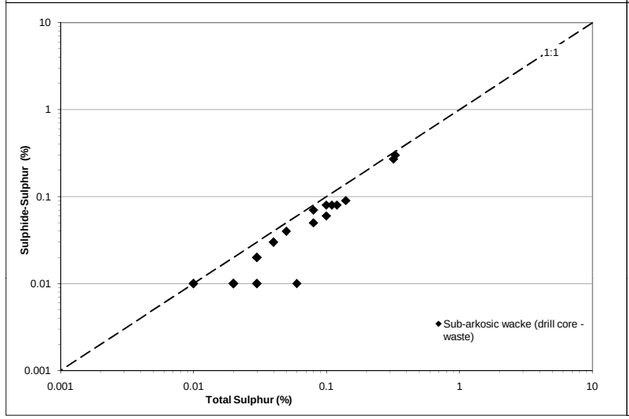
Figure 5-2
Total Sulphur vs. Sulphide Sulphur - Mine Rock Rock and Ore
NICO Project, Fortune Minerals Ltd.

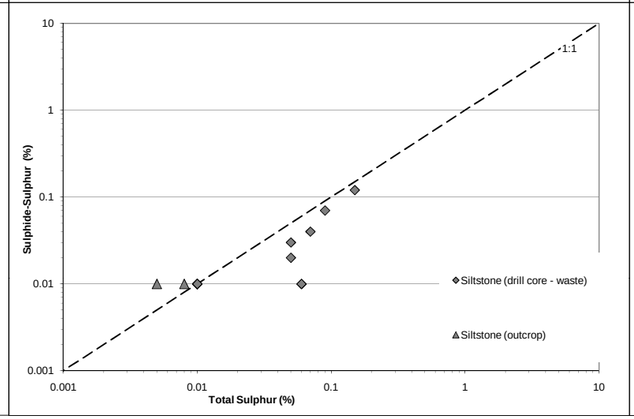
Drill Core Samples and Outcrop Samples

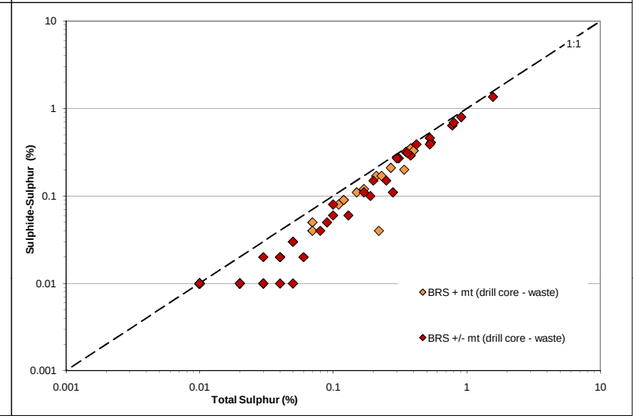




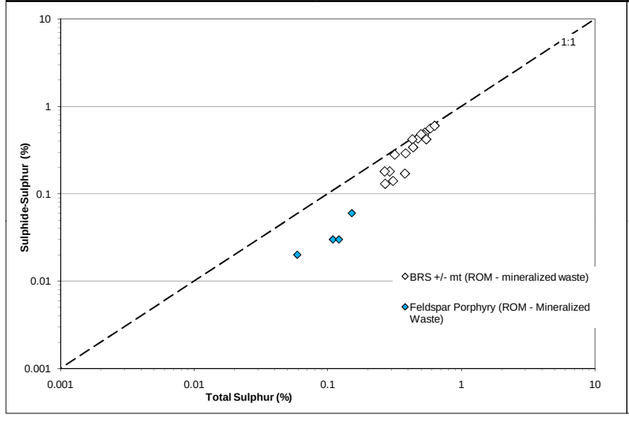




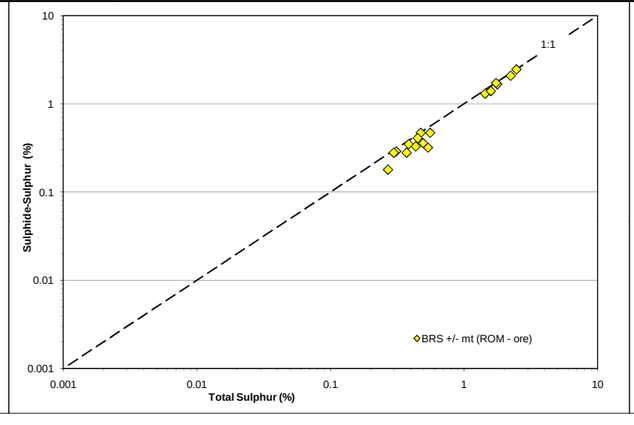




Sub-Economic Mineralized Mine Rock - ROM stockpiles



Ore - ROM Stockpiles



Tailings

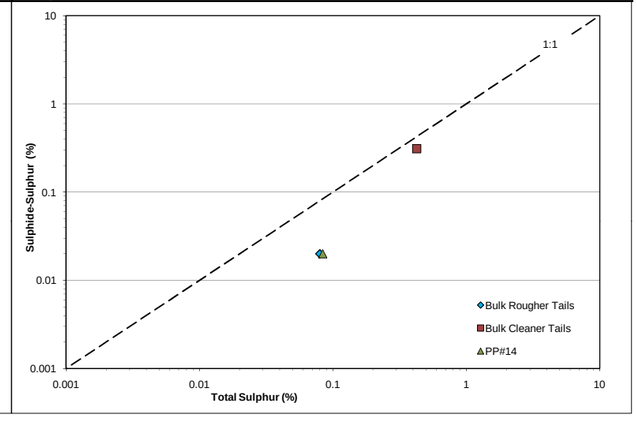
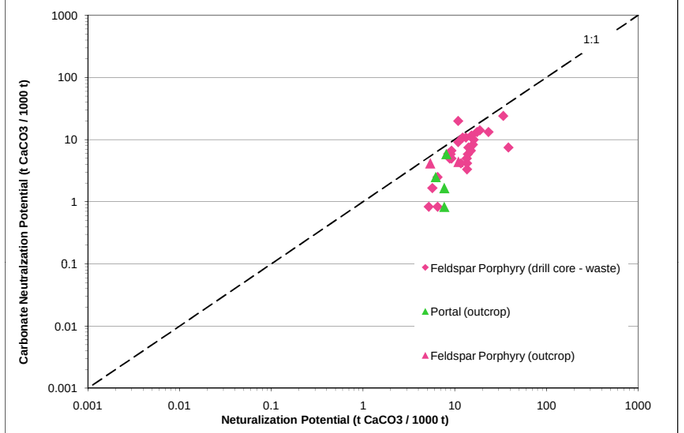
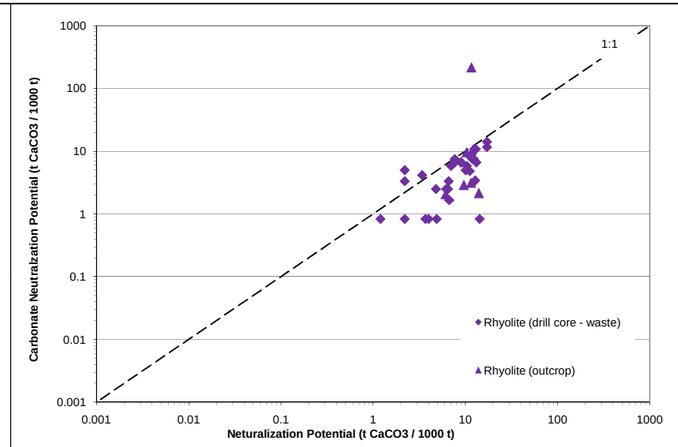
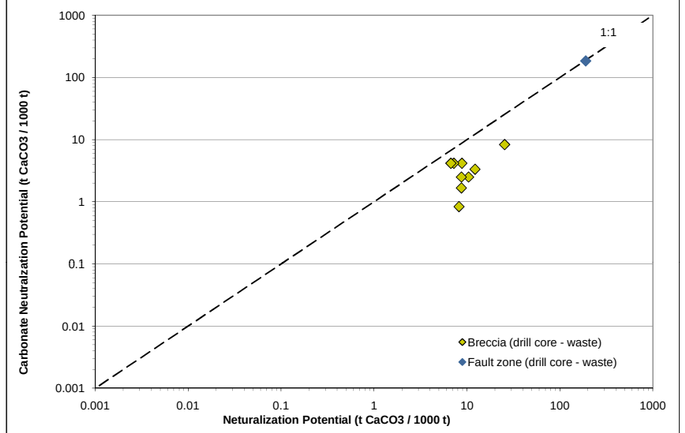


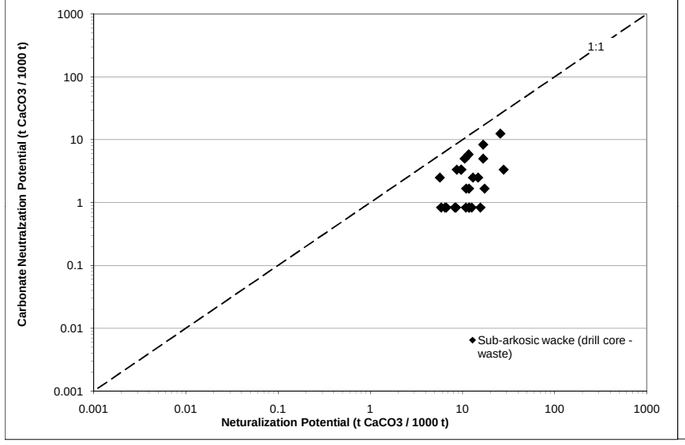
Figure 5-3
Neutralization Potential (NP) vs. Carbonate Neutralization Potential (CaNP) - Waste Rock and Ore
NICO Project, Fortune Minerals Ltd.

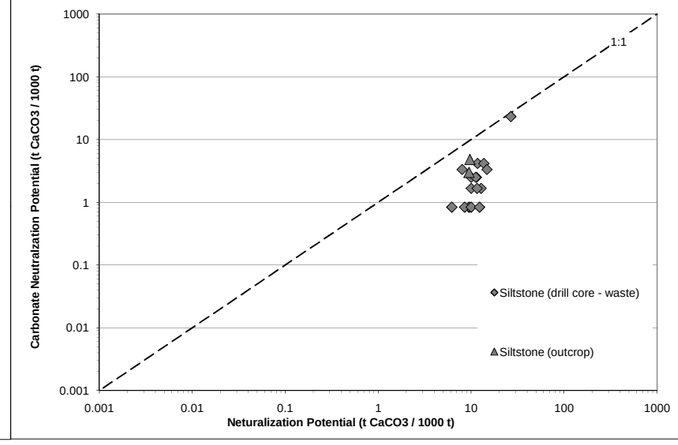
Drill Core Samples and Outcrop Samples

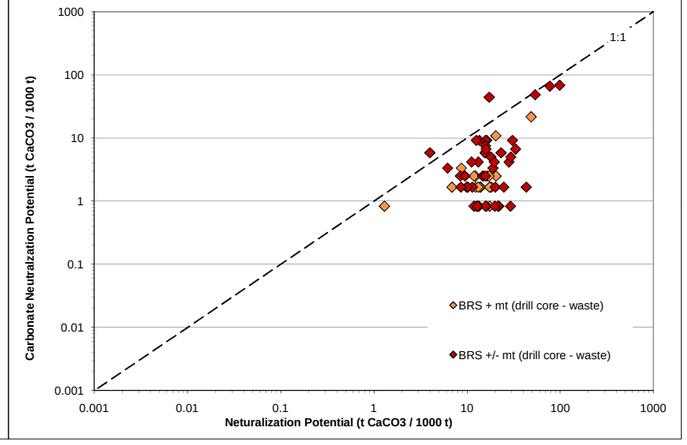




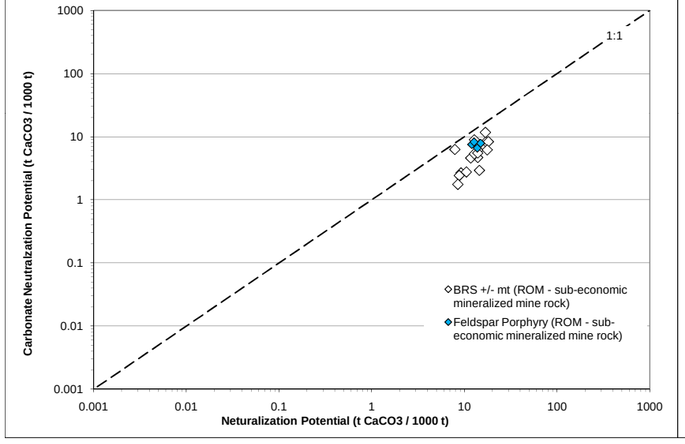




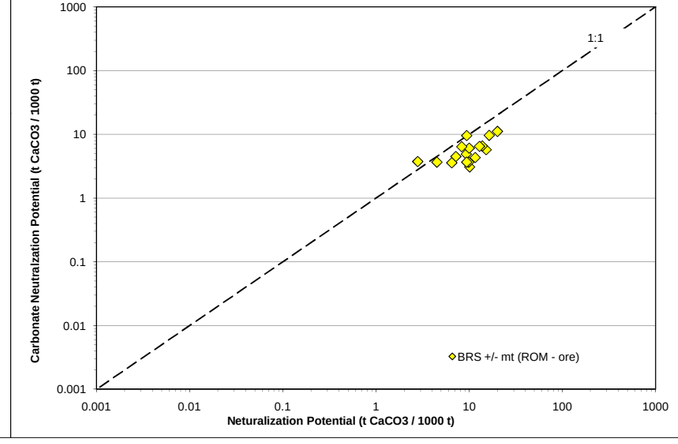




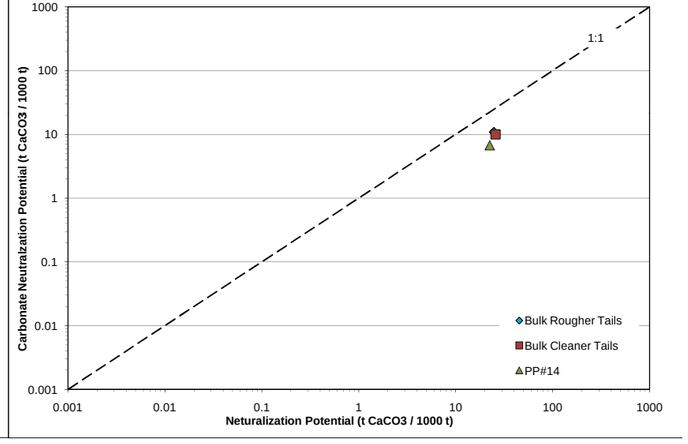
Sub-Economic Mineralized Mine Rock - ROM stockpiles



Ore - ROM Stockpiles



Tailings



The total sulphur content of ore samples ranged from 0.04 to 2.47%. The dominant sulphur species in ore samples was sulphide-sulphur (Figure 5-2). Consistent with the results of mineralogical analysis, which indicated the accumulation of sulphide minerals such as arsenopyrite and pyrite in the ore zone, all but 2 samples of ore contained greater than 0.3% sulphide-sulphur. Ore samples contained little NP, ranging from 2.80 to 20.1 t $CaCO_3$ / 1000 t (Figure 5-3). The total carbon content of ore samples ranged <0.01 to 0.13%. Carbonate NP was slightly less than bulk NP, indicating that the dissolution of silicate minerals affected the NP measurement.

The acid generation potential of samples of Mine Rock, sub-economic mineralized rock, and ore was evaluated based on the NP/AP criteria outlined in Table 5-2, sulphide-sulphur concentrations and NAG-pH. Table 5-3 summarizes the acid generation potential of Mine Rock, sub-economic mineralized rock, and ore.

The acid generation potential of Mine Rock, sub-economic mineralized rock, and ore (by lithology) is presented in Figure 5-3. Most samples of Mine Rock are considered unlikely to generate acidity according to NP/AP ratio: 77% of all Mine Rock samples had NP/AP ratios greater than 4. Only 14% of the Mine Rock samples submitted for ABA have an NP/AP ratio indicative of a potential for acid generation (i.e., NP/AP < 2). The remaining 9% of the Mine Rock samples have an uncertain acid generation potential (i.e., NP/AP between 2 and 4).

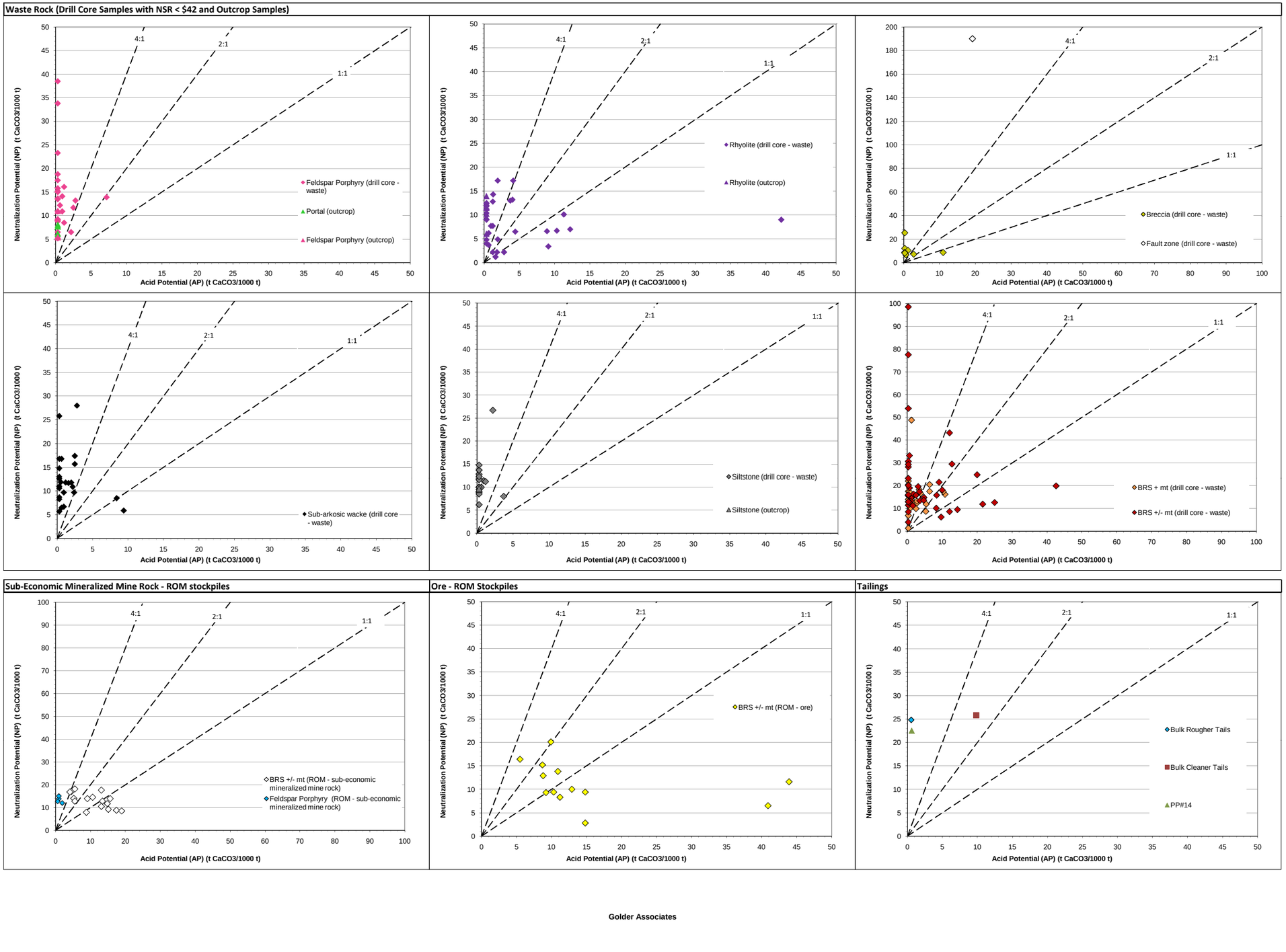
As demonstrated in Figure 5-4, a reasonable correlation exists between NP/AP ratio and Sulphide-sulphur content. Most samples with a likely potential for acid generation (i.e., NP/AP < 2) contained greater than 0.3% sulphide-sulphur.

Table 5-3: Acid Generation Potential of Mine Rock, Ore, and Tailings According to the Results of Acid Base Accounting and Net Acid Generation Testing

Lithology	Number of Samples (ABA)	Percent of Samples				Percent of Samples		Number of Samples (NAG)	Percent of Samples	
		NP/AP<1	1<NP/AP<2	2<NP/AP<4	NP/AP>4	Sulphide-sulphur > 0.3%	Sulphide-sulphur < 0.3%		NAG-pH < 4.5	NAG-pH > 4.5
Mine Rock										
Feldspar Porphyry	34	0%	3%	3%	94%	0%	100%	1	100%	0%
Rhyolite	40	25%	8%	8%	60%	13%	88%	2	100%	0%
Breccia	9	11%	0%	11%	78%	11%	89%	N/A	N/A	N/A
Fault Zone	1	0%	0%	0%	100%	100%	0%	N/A	N/A	N/A
BRS (+ magnetite)	25	8%	12%	16%	64%	16%	84%	N/A	N/A	N/A
BRS (± magnetite)	42	12%	10%	14%	64%	19%	81%	N/A	N/A	N/A
Sub-Arkosic Wacke	25	4%	4%	0%	92%	4%	96%	N/A	N/A	N/A
Siltstone	18	0%	0%	6%	94%	0%	100%	N/A	N/A	N/A
Sub-economic Mineralized Rock (ROM Stockpiles)										
BRS (± magnetite)	16	50%	19%	25%	6%	56%	44%	16	44%	56%
Feldspar Porphyry	4	0%	0%	0%	100%	0%	100%	4	100%	0%
Ore (ROM Stockpiles)										
BRS (± magnetite)	17	71%	24%	6%	0%	76%	24%	19	37%	63%
Tailings										
Bulk rougher tailings	1				100%	100%		1	0	100%
Bulk cleaner tailings	1				100%		100%	1	0	100%
PP#14	1				100%	100%		1	0	100%

ABA = acid base accounting; AP = acid potential; BRS = black rock schist; NAG = net acid generation; NP = neutralization potential; ROM = run-of-mine

Figure 5-4
Evaluation of Acid Generation Potential - Waste Rock and Ore
NICO Project, Fortune Minerals Ltd.



Sub-economic mineralized rock and ore have a greater potential for acid generation, on a whole, than Mine Rock. The sulphide-sulphur content is greater in sub-economic mineralized rock and ore than Mine Rock that occurs distal to the ore zones. Up to 55% of the sub-economic mineralized rock samples and 79% of the ore samples submitted for ABA have NP/AP ratios less than 2 (Figure 5-4). All samples with NP/AP ratios less than 2 contained greater than 0.3% sulphide-sulphur (Figure 5-5).

A limited number of drill core samples and samples collected from the bulk sample stockpiles were submitted for NAG testing. Although the NAG testing dataset largely consisted of sub-economic mineralized rock and ore collected from the bulk sample stockpiles, the correlation between NAG pH and ABA parameters can be used to confirm the ABA classification criteria outlined in Table 5.2 (Figure 5-6):

- The NAG pH of samples of rhyolite and feldspar porphyry varied from 7.01 to 7.87. These samples had NP/AP ratios greater than 4 (Figure 5-6) and contained less than 0.3% sulphide-sulphur (Figure 5-7). The results of NAG testing confirm that Mine Rock with low sulphide content is unlikely to generate acidity.
- The NAG pH of sub-economic mineralized rock varied from 3.24 to 8.84. All samples of mineralized waste with NAG-pH values less than 4.5 had NP/AP ratios less than 2 (Figure 5-6), and contained greater than 0.3% sulphide-sulphur (Figure 5-7).
- The NAG pH of ore varied ranged from 2.23 to 8.13. Again, an excellent correlation existed between NP/AP ratio, sulphide-sulphur content and NAG-pH.

The results of ABA and NAG testing indicate that Mine Rock, in general, has a low potential for acid generation. Sub-economic mineralized rock that occurs in close proximity to ore zones has a greater potential for acid generation. As indicated in Table 5-1, metals that correlate strongly with sulphide-sulphur include arsenic and cobalt. According to the correlation matrices in Appendix V, trace metals generally did not correlate with NP or total carbon concentrations. This result indicates that the oxidation of sulphide minerals could result in the release of metals including arsenic and cobalt to solution.

Figure 5-5

Sulphide-Sulphurvs NP/AP ratio - Waste Rock, Ore and Tailings
NICO Project, Fortune Minerals Ltd.

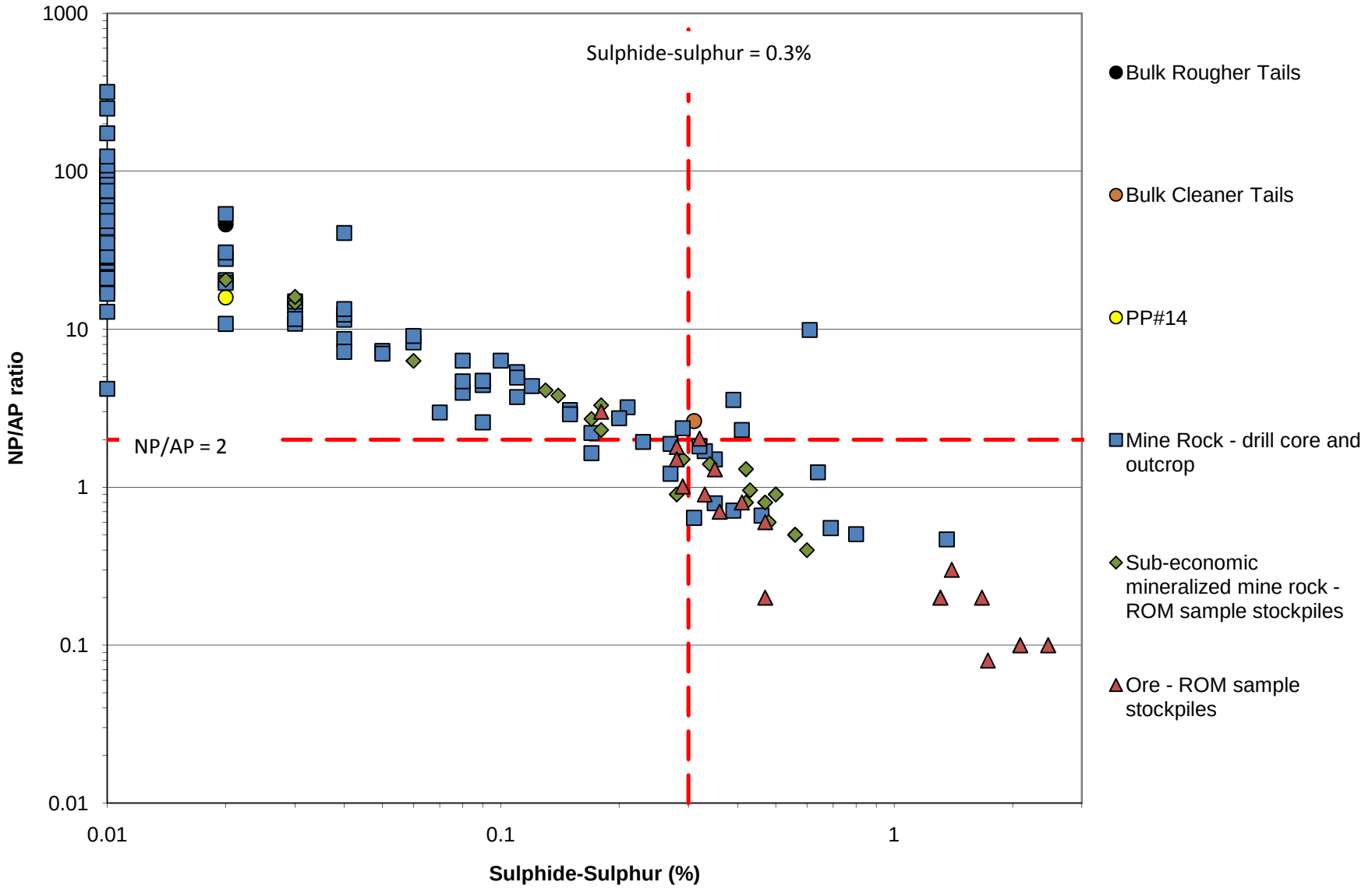


Figure 5-6

NAG-pH vs NP/AP ratio - Waste Rock, Ore and Tailings
NICO Project, Fortune Minerals Ltd.

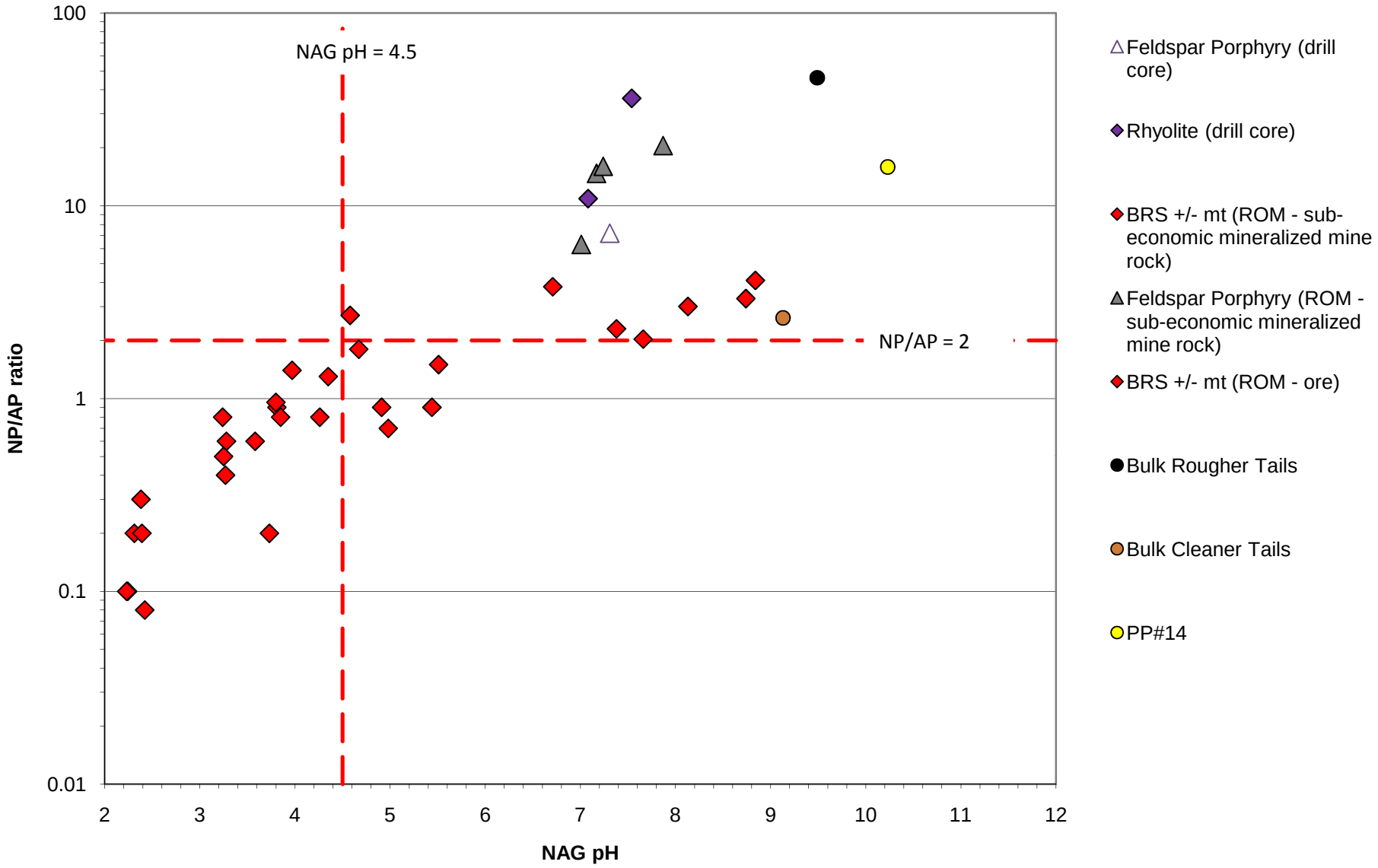
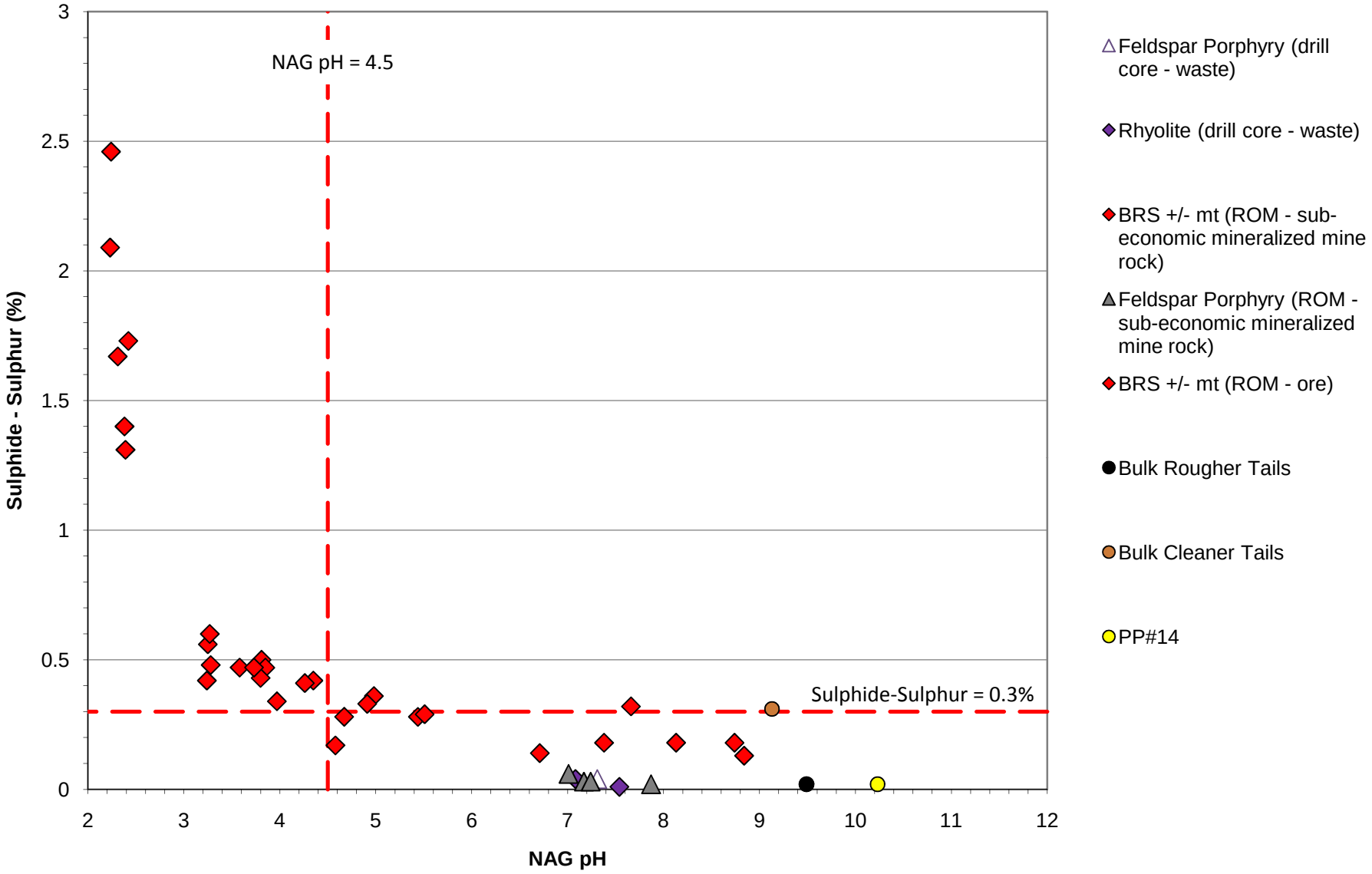


Figure 5-7

NAG-pH vs Sulphide-Sulphur (%) - Waste Rock , Ore and Tailings
NICO Project, Fortune Minerals Ltd.



Golder Associates

5.3.4.2 Tailings

The results of ABA and NAG testing of tailings samples (including bulk rougher tails, bulk cleaner tails, PP#14 and NICO Field Test Blend) are summarized in Table 5-2, and Figures 5-2 through 5-6.

The total sulphur content of bulk rougher tails and PP#14 was 0.08%, dominated by sulphate sulphur. The total sulphur content of the bulk cleaner tailings was 0.43%, which was dominated by sulphide-sulphur (Figure 5-2). Similar to Mine Rock and ore, the NP of tailings was low, ranging from 23 to 26 t $CaCO_3$ / 1000 t. Carbonate NP, calculated using the inorganic carbon concentrations, was less than the bulk NP in all tailings samples. The dominance of NP indicates that the NP measurement was affected by the dissolution of non-carbonate minerals (i.e., silicates). NP and total carbon measurements agree with the results of mineralogical analysis, which indicate that calcite is present in very low quantities in the tailings samples.

The acid generation potential of tailings samples is low, owing to the low sulphide-sulphur content of the tailings samples (Figure 5-4). Net acid generation testing confirmed that tailings have a very low acid generation potential (Figure 5-6 and Figure 5-7). Net acid generation pH values ranged from 9.1 and 10.2, indicating that sufficient NP exists in the tailings samples to buffer the acidity generated by the complete oxidation of sulphide minerals present.

5.4 Short-Term Leach Testing

5.4.1 Overview

Short-term leach testing was conducted to determine metals that could leach from samples of Mine Rock, sub-economic mineralized rock, ore, and tailings, respectively, at concentrations requiring further consideration in the context of site water quality. The objectives of short-term leach testing were to: perform a screening level evaluation of the metal leaching potential of the various waste materials at the NICO Project, and to identify correlations between leachate pH, solid phase concentrations, and leachate concentrations by rock type/waste material.

The results of short-term leach tests are commonly used to estimate the potential composition of runoff that could result from the rapid dissolution of soluble mineral phases. Evaluation of short-term leach tests in the context of leaching capability under site conditions should be conducted with caution. The results of these tests do not directly translate to the expected environmental behaviour of Mine Rock, for several reasons:

- Often, minerals present in the finest grain size component control the chemical composition of runoff and infiltration from blasted Mine Rock. Although this effect was accounted for by testing the finer component of ROM rock in the bulk sample stockpiles, it is possible that all compositional and grain size heterogeneities were not captured during the sampling process. The majority of the geochemistry dataset consists of samples of exploration drill core and outcrop that were crushed and ground prior to leach testing.
- The geochemical test sample size and leachate volume are significantly less than the mass of rock and volume of water interacting with material in an operational setting (i.e., Mine Rock piles or tailings impoundments).
- The contact between the test solution and solid test charge is enhanced relative to the contact between runoff/infiltration water and rock or tailings in site conditions, owing to the nature of agitation during the test.

5.4.2 Sample Selection

Short-term leach testing was conducted iteratively, as the understanding of the project progressed and different materials became available for sampling. Several test methods were used to evaluation the short-term leaching potential of Mine Rock, sub-economic mineralized rock, ore and tailings, including SPLP, SFE, and NAG testing.

Synthetic leachate precipitation procedure was conducted to evaluate the stability of samples in weakly acidic leachate. Samples of Mine Rock and tailings were submitted for SPLP (4:1 leachate to solid ratio, using a standard dilute pH 5 sulphuric / nitric acid solution), including:

- 84 samples of exploration drill core submitted for SPLP in 2004 (Appendix IV-4a); and
- 4 samples of tailings submitted for SPLP in 2009 (Appendix IV-4b).

Shake flask extraction was carried out on samples of exploration drill core, mineralized ROM Mine Rock, and ROM ore. Shake flask extraction simulates the dissolution of soluble mineral phases from a sample in de-ionized water (i.e., neutral pH solution). SFE was conducted on samples collected in 2008 using 2 methods of sample preparation:

- 3 samples of exploration drill core (Appendix IV-5a), and 8 samples of ROM sub-economic mineralized rock and ore (Appendix IV-5b) samples were crushed and ground to a maximum grain size of 9.5 mm prior to SFE.
- 65 samples of ROM sub-economic mineralized rock and ore did not undergo grain size reduction prior to SFE, to better represent actual grain sizes observed, and reduce uncertainty that could be introduced in the testing by crushing and grinding (Appendix IV-5c).

To evaluate the composition of leachate that could result from the complete oxidation of sulphide minerals and dissolution of non-sulphide minerals, NAG supernatant water quality was analyzed after oxidation by hydrogen peroxide but before sample titration. Net acid generation supernatant analysis was performed on samples collected in 2008, including:

- 2samples of exploration drill core (Appendix IV-6a).
- 22 samples of ROM sub-economic mineralized rock and ore (Appendix IV-6b).

5.4.3 Data Analysis

The results of short-term leach tests are sensitive to test methodology (i.e., leachate-to-solid ratio, leachate composition and pH, grain size reduction). The same sample can report a range of leachate concentrations depending on the method of short-term leach testing used. Therefore, the results of short-term leach tests are discussed by method of leach testing to evaluation the leachability of Mine Rock, sub-economic mineralized rock, ore, and tailings samples in specific laboratory test conditions.

The results of short-term leach test results were compared to the site-specific water quality objectives (SSWQO) for the NICO Project, as outlined in Appendix VI. The purpose of this evaluation is to qualitatively identify parameters that leach from Mine Rock, sub-economic mineralized rock, ore, and tailings samples at concentrations that may require further evaluation in the context of overall site water quality. The SSWQO do not directly apply to the results of short-term leach tests.

5.4.4 Results

5.4.4.1 Mine Rock, Sub-Economic Mineralized Mine Rock and Ore

Synthetic Precipitation Leaching Procedure

The results of SPLP conducted on samples of Mine Rock are presented in Appendix IV-4a. Table 5-4 summarizes select results of SPLP with respect to parameters that occur at concentrations in excess of the SSWQO. Parameters presented in Table 5-4 were selected based on the range of solid phase concentrations, and metals known to occur in association with ore mineralization at the NICO Project.

Table 5-4: Summary of the Results of Short-Term Leach Testing of Mine Rock (Drill Core) – Synthetic Precipitation Leaching Procedure

		Feldspar Porphyry		Rhyolite		Breccia		BRS (+ magnetite)		BRS (± magnetite)		Sub-Arkosic Wacke		Siltstone	
	n[a]	13		14		4		12		22		11		8	
	Reference Criteria[b]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]
pH	6.5 - 9	8.4- 9.8	0	6.8- 9.7	0	8.6- 9.4	0	8.6- 9.8	0	7.8- 9.9	0	8.0- 9.8	0	8.8- 9.8	0
Sulphate (mg/L)	500	4.4- 30	0	5- 47	0	2.5- 21	0	4.0- 8.6	0	3.7- 20	0	13- 24	0	5- 19	0
Aluminum (mg/L)	0.41	0.23- 5.6	12	0.34- 7.3	13	0.51- 1.3	4	0.88- 3.3	12	0.15- 2.9	21	3.5- 15	11	0.98- 14	8
Arsenic (mg/L)	0.05	0.00- 2.1	7	0.008- 1.9	12	0.18- 0.68	4	0.05- 1.9	12	0.02- 10	16	0.013- 0.90	6	0.005- 0.25	2
Cadmium (mg/L)	0.00015	0.0005- 0.0005	13	0.0005- 0.0005	14	0.0005- 0.0005	4	0.0005- 0.0005	12	0.0005- 0.0005	22	0.0005- 0.0005	11	0.0005- 0.0005	8
Cobalt (mg/L)	0.01	0.0003- 0.006	0	0.0003- 0.104	9	0.0007- 0.012	2	0.0006- 0.018	1	0.0003- 0.009	0	0.0006- 0.019	2	0.0003- 0.004	0
Copper (mg/L)	0.022	0.0008- 0.006	0	0.0015- 0.208	6	0.0008- 0.016	0	0.0007- 0.036	2	0.0007- 0.007	0	0.0008- 0.041	2	0.0010- 0.007	0
Iron (mg/L)	1.5	0.07- 7.5	6	0.21- 7.0	13	0.05- 1.0	0	1.3- 2.7	11	0.4- 7	21	9.1- 43	11	1.3- 45	7
Molybdenum (mg/L)	0.073	0.0003- 0.027	0	0.0007- 0.012	0	0.0008- 0.010	0	0.0003- 0.007	0	0.0003- 0.013	0	0.0003- 0.002	0	0.0003- 0.002	0
Lead (mg/L)	0.0076	0.0001- 0.003	0	0.0002- 0.008	1	0.0003- 0.001	0	0.0003- 0.0008	0	0.0001- 0.01	1	0.0010- 0.021	1	0.0002- 0.002	0
Antimony (mg/L)	0.03	0.002- 0.014	0	0.002- 0.009	0	0.002- 0.008	0	0.004- 0.054	2	0.003- 0.199	5	0.002- 0.038	1	0.004- 0.010	0
Selenium (mg/L)	0.005	0.005- 0.005	0	0.005- 0.005	0	0.005- 0.005	0	0.005- 0.005	0	0.005- 0.005	0	0.005- 0.005	0	0.005- 0.005	0
Uranium (mg/L)	0.027	0.0002- 0.0057	0	0.0006- 0.0071	0	0.0003- 0.001	0	0.0001- 0.0007	0	0.0001- 0.0028	0	0.0003- 0.0019	0	0.0005- 0.0017	0
Zinc (mg/L)	0.11	0.002- 0.14	3	0.004- 0.19	10	0.006- 0.012	0	0.007- 0.023	0	0.004- 0.034	0	0.093- 0.25	7	0.002- 0.16	5

[a] Total number of samples.
[b] Reference criteria as listed in Appendix VI.
[c] Number of samples with leachate concentrations in excess of the reference criteria.
BRS = black rock schist; mg/L = milligrams per Litre

Shake Flask Extraction

Shake flask extraction was conducted on 2 samples of drill core (rhyolite Mine Rock) collected in 2008 (Appendix IV-5a). Table 5-5 summarizes the results of SFE of rhyolite Mine Rock in the context of the reference criteria for the NICO Project.

Table 5-5: Summary of the Results of Short-Term Leach Testing of Mine Rock (Drill Core) – Shake Flask Extraction

		Rhyolite		Feldspar Porphyry	
	n[a]	2		1	
	Reference Criteria[b]	Results	n (ex)[c]	Results	n (ex)[c]
pH	6.5 - 9	8.9- 9	0	8.85	0
Sulphate (mg/L)	500	2.1- 4.8	0	4	0
Aluminum (mg/L)	0.41	0.264- 0.372	0	0.358	0
Arsenic (mg/L)	0.05	0.116- 0.303	2	0.379	1
Cadmium (mg/L)	0.00015	0.000005- 0.00001	0	0.000008	0
Cobalt (mg/L)	0.01	0.0003- 0.001	0	0.00025	0
Copper (mg/L)	0.022	0.005- 0.007	0	0.0005	0
Iron (mg/L)	1.5	0.29- 0.3	0	0.42	0
Molybdenum (mg/L)	0.073	0.010- 0.035	0	0.0264	0
Lead (mg/L)	0.0076	0.0001- 0.0003	0	0.00014	0
Antimony (mg/L)	0.03	0.014- 0.018	0	0.0778	1
Selenium (mg/L)	0.005	0.001- 0.001	0	0.001	0
Uranium (mg/L)	0.027	0.002- 0.005	0	0.00187	0
Zinc (mg/L)	0.11	0.002- 0.003	0	0.003	0

[a] Total number of samples.

[b] Reference criteria as listed in Appendix VI.

[c] Number of samples with leachate concentrations in excess of the reference criteria.

mg/L = milligrams per Litre

Several samples of mineralized, ROM rock were collected from the bulk sample stockpiles, to evaluate the presence of soluble minerals in rock that had been stored on surface for a period of 1 to 2 years. All samples of ROM rock were submitted for SFE without grain size reduction (i.e., “unprepared samples”) (Appendix IV-5b). Table 5-6 compares the results of SFE conducted on unprepared samples of ROM sub-economic mineralized Mine Rock and ore to the reference criteria.

Eight samples of rock were split into 2 sub-samples. A split of each sample underwent SFE without grain size reduction. The other split was crushed and ground to a maximum grain size of 9.5 mm to evaluate the effect of grain size reduction on the leachability of ROM rock samples (“prepared samples”) (Appendix IV-5c). Appendix IV-5d compares the results of SFE conducted on unprepared samples the results of SFE conducted on prepared samples. In all cases, the pH of the unprepared sample was greater than that of the sample which had been crushed and ground. With the exception of arsenic, concentrations of most trace metals were greater in the crushed and ground samples. Arsenic concentrations were greatest in the samples which had not undergone any form of sample preparation.

Table 5-6: Summary of the Results of Short-Term Leach Testing of Sub-Economic Mineralized Mine Rock and Ore (ROM Stockpiles) – Shake Flask Extraction

		Sub-economic Mineralized Rock (ROM Stockpiles)				Ore (ROM Stockpiles)	
		Feldspar Porphyry		BRS (± magnetite) / BRS (+ magnetite)		BRS (± magnetite) / BRS (+ magnetite)	
	n[a]	4		19		42	
	Reference Criteria[b]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]
pH	6.5 - 9	9.2- 9.5	0	9.0- 10	0	8.1- 9.7	0
Sulphate (mg/L)	500	2.1- 6.9	0	3.8- 24	0	2.3- 86	0
Aluminum (mg/L)	0.41	0.33- 0.52	3	0.04- 0.31	0	0.04- 0.48	1
Arsenic (mg/L)	0.05	1.6- 2.5	4	0.0- 2.9	18	0.02- 9.6	40
Cadmium (mg/L)	0.00015	0.000003- 0.0001	1	0.000003- 0.00009	0	0.000003- 0.00031	2
Cobalt (mg/L)	0.01	0.0004- 0.0007	0	0.0001- 0.0013	0	0.0001- 0.004	0
Copper (mg/L)	0.022	0.0005- 0.0005	0	0.0005- 0.0032	0	0.0005- 0.001	0
Iron (mg/L)	1.5	0.19- 0.41	0	0.14- 1.1	0	0.01- 1.0	0
Molybdenum (mg/L)	0.073	0.004- 0.007	0	0.002- 0.016	0	0.001- 0.01	0
Lead (mg/L)	0.0076	0.0003- 0.0006	0	0.00008- 0.0006	0	0.00002- 0.001	0
Antimony (mg/L)	0.03	0.01- 0.02	0	0.05- 0.15	19	0.01- 0.10	39
Selenium (mg/L)	0.005	0.006- 0.009	4	0.013- 0.062	19	0.003- 0.095	24
Uranium (mg/L)	0.027	0.002- 0.007	0	0.0001- 0.0008	0	0.0004- 0.007	0
Zinc (mg/L)	0.11	0.001- 0.002	0	0.001- 0.005	0	0.001- 0.004	0

[a] Total number of samples.

[b] Reference criteria as listed in Appendix VI.

[c] Number of samples with leachate concentrations in excess of the reference criteria.

BRS = black rock schist; ROM = run-of-mine; mg/L = milligrams per Litre

Comprehensive Analysis of Net Acid Generation Leachates

Appendix IV-6a presents the results of comprehensive analysis of NAG leachates from 2 samples of rhyolite Mine Rock. Table 5-7 presents parameters in NAG leachates that exceed the reference criteria.

Net acid generation leachates from select samples of sub-economic mineralized rock and ore (ROM stockpiles) were submitted for comprehensive analysis (Appendix IV-6b). Table 5-8 presents a summary of parameters in NAG leachates from sub-economic mineralized rock and ore that occur at concentrations in excess of the reference criteria.

Table 5-7: Summary of the Results of Short-Term Leach Testing of Mine Rock (Drill Core) – Comprehensive Analysis of Net Acid Generation Leachates

		Rhyolite	
	n[a]	2	
	Reference Criteria[b]	Results	n (ex)[c]
pH	6.5 - 9	6.8- 7.4	0
Sulphate (mg/L)	500	15- 51	0
Aluminum (mg/L)	0.41	0.07- 0.17	0
Arsenic (mg/L)	0.05	0.02- 0.13	1
Cadmium (mg/L)	0.00015	0.000006- 0.00004	0
Cobalt (mg/L)	0.01	0.013- 0.11	2
Copper (mg/L)	0.022	0.0031- 0.007	0
Iron (mg/L)	1.5	0.02- 0.03	0
Molybdenum (mg/L)	0.073	0.0094- 0.125	1
Lead (mg/L)	0.0076	0.00005- 0.00005	0
Antimony (mg/L)	0.03	0.007- 0.019	0
Selenium (mg/L)	0.005	0.001- 0.002	0
Uranium (mg/L)	0.027	0.0001- 0.005	0
Zinc (mg/L)	0.11	0.006- 0.038	0

[a] Total number of samples.

[b] Reference criteria as listed in Appendix VI.

[c] Number of samples with leachate concentrations in excess of the reference criteria.

mg/L = milligrams per Litre

Table 5-8: Summary of the Results of Short-Term Leach Testing of Sub-Economic Mineralized Mine Rock and Ore (ROM Stockpiles) – Comprehensive Analysis of Net Acid Generation Leachates

		Sub-economic Mineralized Rock (ROM Stockpiles)				Ore (ROM Stockpiles)	
		Feldspar Porphyry		BRS (± magnetite) / BRS (+ magnetite)		BRS (± magnetite) / BRS (+ magnetite)	
	n[a]	3		9		10	
	Reference Criteria[b]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]
pH	6.5 - 9	7.0- 7.3	0	3.1- 7.7	7	2.1- 6.7	9
Sulphate (mg/L)	500	30- 47	0	52- 200	0	69- 630	4
Aluminum (mg/L)	0.41	0.03- 0.58	1	0.01- 1.5	5	0.01- 12	8
Arsenic (mg/L)	0.05	2.8- 6.0	3	0.005- 6.9	8	0.010- 26	9
Cadmium (mg/L)	0.00015	0.00003- 0.00008	0	0.00004- 0.0001	2	0.00003- 0.0011	3
Cobalt (mg/L)	0.01	0.0008- 0.01	1	0.0085- 13	8	0.07- 27	10
Copper (mg/L)	0.022	0.0005- 0.002	0	0.0005- 9.4	5	0.0033- 2.5	8
Iron (mg/L)	1.5	0.02- 0.08	0	0.01- 16	2	0.01- 39	3
Molybdenum (mg/L)	0.073	0.07- 0.16	2	0.0007- 0.11	4	0.0011- 0.13	1
Lead (mg/L)	0.0076	0.00005- 0.00006	0	0.00002- 0.0082	0	0.00003- 0.005	0
Antimony (mg/L)	0.03	0.02- 0.03	1	0.001- 0.11	3	0.002- 0.05	1
Selenium (mg/L)	0.005	0.02- 0.02	3	0.032- 0.16	9	0.011- 0.13	10
Uranium (mg/L)	0.027	0.00007- 0.0004	0	0.00003- 0.02	1	0.00048- 0.09	5
Zinc (mg/L)	0.11	0.006- 0.04	0	0.006- 0.79	5	0.022- 0.91	5

[a] Total number of samples.

[b] Reference criteria as listed in Appendix VI.

[c] Number of samples with leachate concentrations in excess of the reference criteria.

BRS = black rock schist; ROM = run-of-mine; mg/L = milligrams per Litre

5.4.4.2 Tailings

Synthetic Precipitation Leaching Procedure

Appendix IV-4b presents the results of SPLP conducted on 4 samples of tailings. Parameters leached from the samples at concentrations requiring further consideration with respect to overall site water quality were as follows are summarized in Table 5-9.

Table 5-9: Summary of the Results of Short-Term Leach Testing of Tailings – Synthetic Precipitation Leaching Procedure

	Reference Criteria[a]	Bulk Rougher Tails	Bulk Cleaner Tails	PP#14
pH	6.5 - 9	9.61	9.53	8.94
Sulphate (mg/L)	500	N/A	N/A	N/A
Aluminum (mg/L)	0.41	0.808	1.24	0.0292
Arsenic (mg/L)	0.05	0.807	1.25	0.271
Cadmium (mg/L)	0.00015	< 0.000003	1E-05	< 0.000003
Cobalt (mg/L)	0.01	0.0079	0.0164	0.000996
Copper (mg/L)	0.022	0.0038	0.0051	0.007
Iron (mg/L)	1.5	3.75	5.92	0.02
Molybdenum (mg/L)	0.073	0.00517	0.0074	0.00712
Lead (mg/L)	0.0076	0.0012	0.0018	0.00018
Antimony (mg/L)	0.03	0.018	0.033	0.0217
Selenium (mg/L)	0.005	0.008	0.019	0.014
Uranium (mg/L)	0.027	0.0113	0.0145	0.013
Zinc (mg/L)	0.11	0.026	0.047	0.021

[a] Reference criteria as listed in Appendix VI.

N/A = indicates that the parameter was not measured in solution; mg/L = milligrams per Litre

Comprehensive Analysis of Net Acid Generation Leachates

Detailed results of comprehensive analysis of tailings NAG leachates are presented in Appendix IV-6c. Table 5-10 presents a summary of the results of NAG testing in the context of the reference criteria.

Table 5-10: Summary of the Results of Short-Term Leach Testing of Tailings – Comprehensive Analysis of Net Acid Generation Leachates

	Reference Criteria[a]	Bulk Rougher Tails	Bulk Cleaner Tails	PP#14
pH	6.5 - 9	N/A	N/A	N/A
Sulphate (mg/L)	500	N/A	N/A	N/A
Aluminum (mg/L)	0.41	1.25	0.97	1.31
Arsenic (mg/L)	0.05	0.18	1.84	0.824
Cadmium (mg/L)	0.00015	0.000034	3.6E-05	< 0.000003
Cobalt (mg/L)	0.01	0.0225	0.00997	0.00726
Copper (mg/L)	0.022	0.0183	0.0074	0.0093
Iron (mg/L)	1.5	0.06	0.02	0.05
Molybdenum (mg/L)	0.073	0.0204	0.053	0.0197
Lead (mg/L)	0.0076	0.00015	0.00007	0.0002
Antimony (mg/L)	0.03	0.0277	0.0858	0.0338
Selenium (mg/L)	0.005	0.013	0.048	0.014
Uranium (mg/L)	0.027	0.0011	0.00151	0.0012
Zinc (mg/L)	0.11	< 0.001	< 0.001	0.001

[a] Reference criteria as listed in Appendix VI.

N/A = indicates that the parameter was not measured in solution; mg/L = milligrams per Litre

5.5 Tailings Decant Water Quality Analysis

5.5.1 Overview

Water was decanted from select tailings samples and submitted for analysis. The composition of this decant water is likely to most closely resemble that of process water that will be discharged with the tailings samples relative to the other samples tested during the geochemistry baseline studies. It is however acknowledged that refinements in process design and site-specific conditions will influence the actual tailings water composition during operations and at closure. Two methods of decant water quality analysis were performed: decant water quality analysis, and aging tests:

- Water was decanted from each sample of bulk rougher tailings and cleaner flotation tailings, respectively, and submitted for chemical analysis. Analysis of this water provides an indication of the chemical composition of process water in contact with tailings.
- Water decanted from bulk rougher tailings during the construction of the tailings field tests at the NICO Project site was submitted for analysis at ALS Environmental in Edmonton, Alberta.
- Water was decanted from cleaner flotation tailings (PP #14) at SGS Lakefield.

The results of short-term leach test results were compared to the reference criteria for the NICO Project, defined in Appendix VI. The purpose of this evaluation is to qualitatively identify parameters in tailings decant water that may require further evaluation in the context of overall site water quality.

5.5.2 Results

The results of tailings decant water quality analysis are presented in Appendix IV-7. Table 5-11 presents a summary of the results of decant water quality analysis in the context of the reference criteria.

Table 5-11: Summary of the Results of Tailings Decant Water Quality Analysis

	Reference Criteria[a]	Bulk Rougher Tails (FC-6)	PP#14
pH	6.5 - 9	8.2	8.18
Sulphate (mg/L)	500	132	60
Dissolved Metals			
Aluminum (mg/L)	0.41	0.09	0.08
Arsenic (mg/L)	0.05	0.22	0.625
Cadmium (mg/L)	0.00015	0.0004	5.5E-05
Cobalt (mg/L)	0.01	0.0045	0.00141
Copper (mg/L)	0.022	0.0021	0.002
Iron (mg/L)	1.5	0.235	0.11
Molybdenum (mg/L)	0.073	0.0603	0.0534
Lead (mg/L)	0.0076	<0.0001	0.00
Antimony (mg/L)	0.03	0.0142	0.012
Selenium (mg/L)	0.005	0.0569	0.0623
Uranium (mg/L)	0.027	0.0952	0.0363
Zinc (mg/L)	0.11	0.003	<0.001

[a] Reference criteria as listed in Appendix VI.
mg/L = milligrams per Litre

5.6 Tailings Process Water Analysis

Fortune initiated a pilot plant in 2010 for the purposes of metallurgical testing. Seven pilot plant test runs were completed using 2 ore samples: P3 (a sample having typical to high bismuth concentrations, and low cobalt) and P4 (a sample having typical cobalt concentrations, and low bismuth). The combination of the 2 samples, results in composite P5 which has cobalt and bismuth concentration of typical ore.

The pilot plant was run over a period of 7 days. The various pilot plant test runs are labeled according to the day of the 7 day duration test run. Samples of recycled water from the pilot plant were collected at the end of each pilot plant test run. The mass load in process water samples is considered to be a reasonable representation of the mass that could accumulate during the cycling of water through the mill. Process water will be discharged from the process plant as a component of the tailings slurry.

The results of process water analysis were compared to the reference criteria for the NICO Project, defined in Appendix VI. The purpose of this evaluation is to qualitatively identify parameters in tailings process water that may require further evaluation in the context of overall site water quality.

5.6.1 Results

The results of process water analysis are presented in Appendix IV-8. Table 5-12 presents a summary of the results of process water analysis in the context of the reference criteria.

Arsenic and selenium speciation were completed on process water samples collected on the final day of pilot plan operation. No difference in selenium speciation was noted. The relative proportions of trivalent and pentavalent arsenic were similar in process water; however, process water contained slightly more trivalent arsenic. Geochemical testing of solid samples collected from the pilot plant was ongoing as of the date of preparation of this report.

Table 5-12: Summary of the Results of Tailings Process Water Analysis

	Pilot Plant Shift	PP-01	PP-02	PP-03	PP-03	PP-05	PP-7A
	Day of pilot plant operation	1	2	3	3	5	7
	Time of sample collection	16:00	16:00	11:00	16:00	14:30	13:00
	Reference Criteria[a]						
pH	6.5 - 9	8.72	8.56	8.43	8.57	8.51	8.02
Sulphate (mg/L)	500	95	83	77	100	110	140
Aluminum (mg/L)	0.41	0.06	0.07	0.04	0.07	0.09	0.05
Arsenic (mg/L)	0.05	0.035	0.045	0.033	0.038	0.028	0.025
Cadmium (mg/L)	0.00015	0.000026	0.000056	0.00004	0.000048	0.000054	0.000088
Cobalt (mg/L)	0.01	0.001092	0.00103	0.00235	0.00229	0.00215	0.00185
Copper (mg/L)	0.022	0.0009	0.0019	0.0016	0.0012	0.0006	0.0015
Iron (mg/L)	1.5	0.014	0.011	< 0.002	0.003	0.005	0.008
Molybdenum (mg/L)	0.073	0.03553	0.0357	0.0466	0.046	0.0517	0.07904
Lead (mg/L)	0.0076	0.00053	0.0001	0.00088	0.00005	0.00006	0.00016
Antimony (mg/L)	0.03	0.0093	0.0098	0.0107	0.0084	0.0171	0.0214
Selenium (mg/L)	0.005	0.065	< 0.005	0.019	0.008	< 0.005	< 0.005
Uranium (mg/L)	0.027	0.007833	0.00803	0.0101	0.00928	0.0119	0.017088
Zinc (mg/L)	0.11	< 0.002	< 0.002	0.004	< 0.002	< 0.002	0.007
As^{+3} (mg/L)							0.018
As^{+5} (mg/L)							0.008
Se^{4} (mg/L)							< 0.005
Se^{6} (mg/L)							< 0.005

[a] Reference criteria as listed in Appendix VI.

mg/L = milligrams per Litre

5.7 Long-Term Leach Testing

5.7.1 Overview

Long-term, laboratory leach tests were conducted using humidity cells, according to the protocol outlined in ASTM D5744-96 (Standard Method for Accelerated Weathering of Solid Materials Using a Modified Humidity Cell) (ASTM 2001). Method ASTM D 5744-96 is a commonly used standard technique for accelerated weathering, which has gained widespread acceptance by regulatory agencies.

Humidity Cell Tests (HCTs) are repetitive leach tests. Samples are placed in a weathering chamber (i.e., a humidity cell) designed to provide control over air, temperature, and moisture content. The samples undergo a weakly cycling of air and water: for 3 days, the cell is inundated with wet air, followed by 3 days of inundation with water-saturated air. On the seventh day, the sample is leached with 1 Litre of distilled water.

Humidity cells provide a conservative approximation of rates of mineral oxidation. Although not directly analogous to actual rates of weathering in site conditions, the results of humidity cell tests can provide meaningful trends for chemical reactions of interest, including sulphide oxidation, metal leaching, and mineral dissolution.

5.7.2 Sample Selection and Test Duration

Humidity cell tests of Mine Rock and ore were initiated in 2004. Twelve samples were submitted for humidity cell testing (Table 5-13). Seven Mine Rock humidity cell tests were conducted for a period of 40 weeks. The remaining 5 samples underwent humidity cell testing for a period of 169 weeks to evaluate longer-term trends in Mine Rock reactivity.

Samples were selected from each of the major rock types present at the NICO Project. Samples were selected to achieve compositional representation of the main rock types based on the results of static testing (i.e., ABA, trace metal analysis, and results of SPLP). Samples were selected for testing prior to the completion of the mine block model. None of the kinetic test samples were collected from zones classified as ore in the mine block model. Although some samples were collected from zones outside the extent of the proposed Open Pit, the results of static testing indicate that the composition of these samples is analogous to the composition of rock that occurs within the outline of the Open Pit. Therefore, the results of these kinetic tests are relevant to the evaluation of the long-term geochemical characteristics of Mine Rock that will be encountered during mining.

Tailings humidity cell tests were initiated in 2009. One sample of each of the main tailings types from site was submitted for humidity cell testing (Table 5-14). Tailings humidity cell tests were discontinued after approximately 20 weeks. Supplemental tailings humidity cell tests were initiated in 2011. The results of the supplemental tailings tests were not available at the date of preparation of this report.

Table 5-13: Mine Rock Samples Submitted for Humidity Cell Testing

Sample ID	Test Duration (Number of Weeks)	Sulphide-sulphur (%)	Neutralization Potential (t $CaCO_3$/1000 t)	NP/AP	Arsenic (ppm)
Feldspar Porphyry					
100859	40	0.02	12	20	21
100913	40	0.04	16	13	65
Rhyolite					
100863	169	<0.01	11	36	200
100932	169	0.49	0	0	200
100872	40	0.01	12	40	36
Breccia					
100925	169	0.01	8.7	28	200
BRS (+ magnetite)					
100890	40	0.03	10.2	11	1700
100977	40	0.04	14	12	1100
BRS (± magnetite)					
100802	40	<0.01	28	90	41
100907	169	0.27	10	1.2	5100
Sub-Arkosic Wacke					
100881	40	0.02	17	27	38
Siltstone					
100914	169	<0.01	9.5	31	5

AP = acid potential; BRS = black rock schist; NP = neutralization potential; t = tonne; ppm = parts per million; % = percent; t $CaCO_3$/1000 t = tonnes calcium carbonate per one thousand tonnes

Table 5-14: Tailings Samples Submitted for Humidity Cell Testing

Sample ID	Test Duration (Number of Weeks)	Sulphide-sulphur (%)	Neutralization Potential (t $CaCO_3$/1000 t)	NP/AP	Arsenic (ppm)
Bulk Rougher Tails	20	0.02	24.8	46	170
PP#14	22	0.02	22.5	15.9	280

AP = acid potential; NP = neutralization potential; t = tonne; ppm = parts per million; % = percent

5.7.3 Data Analysis

Humidity cell tests are design to evaluate rates of mineral reaction in controlled, laboratory conditions. The objection of the humidity cell testing program was to evaluate the rate of oxidation of sulphide minerals and dissolution of minerals capable of contributing NP, metal concentration trends, and mineral depletion rates over time. This was achieved by tracking concentrations of select, diagnostic parameters over the duration of the test, including:

- parameters indicative of the processes of sulphide oxidation (i.e., pH and sulphate);

- parameters indicated of the processes of carbonate mineral dissolution (i.e., alkalinity); and
- metals of interest defined based on the results of solid phase analysis and short-term leach testing, including aluminum, arsenic, cobalt, iron, molybdenum, selenium, and zinc.

Concentrations of the parameters listed above were compared to the reference criteria outlined in Appendix VI to qualitatively identify parameters that require further consideration within the context of the overall site water quality.

The results of humidity cell testing were using to conduct sulphide and NP depletion calculation. Depletion calculations, based on the relative rate of production of sulphate and alkalinity in humidity cell leachate, are a useful method of predicting the time to onset of acid generation (if ever) in laboratory conditions. Sulphide and NP depletion calculations were conducted to evaluate the rate of depletion of acid producing (i.e., sulphide) and acid neutralizing (i.e., carbonate) minerals from the kinetic testing samples. Empirical rates of NP depletion were calculated according to the recommendations in Price (1997), which assumes that the NP depletion is equivalent to the rate of sulphate production and the rate of alkalinity production/acidity consumption. If acid producing minerals are depleted from the humidity cell prior to soluble, neutralizing minerals, it is unlikely that acid generating conditions will be realized in the humidity cell. However, if the rate of dissolution of carbonate minerals exceeds the rate of oxidation of sulphide minerals, acid generation could occur.

5.7.4 Results

The subsequent sections provide a detailed overview of the results of kinetic testing, including an overview of the potential for long-term persistence of acid generation and metal leaching in the Mine Rock and tailings humidity cell tests.

5.7.4.1 Mine Rock Humidity Cell Tests

Detailed results of Mine Rock humidity cell tests are presented in Appendix VII-1. Appendix VIII-1 presents concentration trends of select parameters in each humidity cell test over time.

Feldspar Porphyry

Two samples of feldspar porphyry were submitted for humidity cell testing: 100859 (Appendix VII-1a) and 100913 (Appendix VII-1b). Feldspar porphyry samples submitted for kinetic testing had low sulphide-sulphur concentrations (0.02% and 0.04%, respectively). Kinetic testing of over a period of 40 weeks indicated the following:

- Leachate pH values were relatively stable throughout the duration of the kinetic tests, varying between 6.79 and 7.71 in sample 100859, and 6.93 and 8.8 in sample 100913.
- After the initial flushing of the humidity cell tests, sulphate concentrations decreased from 3.3 mg/L (100859) and 3.7 mg/L (100913) to less than the analytical detection limit of 0.5 mg/L.
- Aluminum concentrations increased over time in sample 100859, exceeding the reference criteria of 0.1 mg/L during the first flush (0.13 mg/L) and week 35 (0.13 mg/L). In sample 100913, aluminum concentrations peaked during the initial flush of the cell (0.33 mg/L), and stabilized after week 5 with longer-term concentrations ranging from 0.06 to 0.12 mg/L.

- Both samples reported arsenic concentrations in excess of the reference criterion of 0.005 mg/L throughout the duration of the 40 week test. Arsenic concentrations ranged from 0.008 to 0.073 mg/L in 100859 and from 0.006 to 0.065 mg/L in 100913, decreasing to stable concentrations after the initial flush of the cells.
- Cadmium concentrations did not exceed the analytical detection limit of 0.0001 mg/L.
- Cobalt concentrations remained below the detection limit of 0.0003 mg/L in both samples, with the exception of a spike at week 10 in sample 100859 (0.168 mg/L).
- Copper concentrations were below the reference guidelines of 0.004 mg/L throughout testing on both samples, with the exception of a spike at week 10 in sample 100859 (0.219 mg/L).
- Iron concentrations remained below the reference criterion of 0.3 mg/L in all but week 15 of testing. In week 15, iron concentrations were 2.83 mg/L in 100859 and 0.53 mg/L in 100913.
- Molybdenum concentrations decreased over time in both samples.
- Lead concentrations did not exceed the analytical detection limit of 0.0002 mg/L.
- Selenium concentrations did not exceed the detection limit of 0.005 mg/L during the 40 week period of kinetic testing.
- Antimony concentrations varied from <0.0004 to 0.0071 mg/L in 100913 and < 0.0004 to 0.0131 mg/L in 100859.
- Lead concentrations ranged from <0.0002 to 0.0011 mg/L in 100913 and 0.0004 to 0.0336 mg/L in 100859.
- Zinc concentrations were less than the reference criteria through the duration of the kinetic tests in both samples.

Concentrations of most parameters were less than the SSWQO in almost all HCT leachate samples collected from feldspar porphyry kinetic tests. Concentrations of iron, cobalt and copper (100859) and arsenic (100913) exceeded the SSWQO in one out of 40 leachates. Uranium exceeded the SSWQO in 2 leachates in 100859. In general, the low-sulphide feldspar porphyry samples submitted for humidity cell testing had a low potential for acid generation and metal leaching.

Rhyolite

Three samples of rhyolite were submitted for humidity cell testing. Samples 100863 and 100872 had low sulphide-sulphur contents (0.01%), whereas the sulphide content of 100932 was 0.5%. Kinetic testing was conducted on sample 100872 over a period of 40 weeks. Samples 100863 and 100932 underwent kinetic testing for a period of 169 weeks to confirm long-term trends in acid generation and metal leaching. The results of kinetic testing of rhyolite samples are presented in Appendix VII-1c through VII-1e.

Kinetic testing of low sulphide samples 100872 and 100863 indicated the following:

- Neutral leachate pH values maintained throughout the duration of testing, varying from 5.01 to 8.59 in 100863 and 6.8 to 8.48 in 100872.
- Sulphate concentrations were low in both samples, varying from <0.5 to 6.3 mg/L in 100863 and <0.5 to 2.1 mg/L in 100872.

- Aluminum concentrations varied from 0.02 to 0.2 mg/L in 100863 and <0.01 to 0.14 mg/L in 100872.
- Arsenic concentrations were similar to or exceeded the SSWQO of 0.05 mg/L in most leachate samples from 100863 (ranging from 0.0399 to 0.543 mg/L). Concentrations ranged from 0.013 to 0.113 mg/L in 100872.
- Cadmium concentrations did not exceed the analytical detection limit of 0.0001 mg/L.
- Cobalt concentrations were generally less than the analytical detection limit of 0.0003 mg/L throughout the 40 week test of 100872. Cobalt concentrations increased over time in sample 100863, ranging from 0.00098 to 0.00674 mg/L.
- Copper concentrations varied from <0.0008 to 0.0037 mg/L in 100863, and <0.0008 to 0.002 mg/L in 100872.
- Iron concentrations varied from <0.1 to 0.40 mg/L in 100863 and <0.02 to 0.62 mg/L in 100872.
- Molybdenum concentrations ranged from 0.0006 to 0.0305 mg/L in 100863 and <0.0003 to 0.0276 mg/L in 100872.
- Lead concentrations were either less than or equal to the analytical detection limit of 0.0002 mg/L.
- Antimony concentrations varied from 0.00051 to 0.0384 mg/L in 100863, and 0.0049 to 0.0742 mg/L in 100872.
- Selenium concentrations did not exceed the analytical detection limits through the duration of testing of 100863 and 100872.
- Zinc concentrations varied from <0.001 to 0.0056 mg/L in 100863 and from <0.001 to 0.004 mg/L in 100872.

With the exception of arsenic, low-sulphide rhyolite samples had a low potential for acid generation and metal leaching. Arsenic concentrations exceeded the SSWQO in many leachates from low-sulphide rhyolite humidity cell tests.

Results of kinetic testing of sample 100963, which contained 0.5% sulphide-sulphur, were as follows:

- Leachate pH varied from 4.36 to 7, stabilizing at weakly acidic values (i.e., less than pH 5) after 20 weeks of testing.
- Sulphate concentrations varied from 1.6 to 29 mg/L over the 169 week duration of testing. Steady state sulphate concentrations were less than 10 mg/L.
- Aluminum concentrations varied from 0.0032 to 0.21 mg/L.
- Arsenic concentrations decreased from an initial concentration of 0.02 mg/L to 0.002 mg/L.
- Cadmium concentrations did not exceed the analytical detection limit of 0.0001 mg/L.
- Cobalt concentrations decreased from 0.348 mg/L to 0.0125 mg/L through the 169 week test duration.

- Copper concentrations varied from 0.0336 to 0.67 mg/L. Concentrations increased to 0.67 mg/L through the first 20 weeks of testing, decreasing to longer-term concentration between 0.1 and 0.3 mg/L.
- Iron concentrations increased over time in leachates from sample 100932, ranging from 0.02 to 0.69 mg/L.
- Molybdenum concentrations were at or below the analytical detection limit for the majority of the 169 week testing period.
- Lead concentrations were either less than or equal to the analytical detection limit of 0.0002 mg/L.
- Antimony ranged from <0.0004 to 0.0009 mg/L.
- Selenium concentrations did not exceed the analytical detection limits during the 169 week test.
- Uranium varied from 0.0004 to 0.0031 mg/L.
- Zinc concentrations varied from 0.002 to 0.016 mg/L. Zinc did not exceed the reference criterion of 0.03 mg/L.

Sample 100963 generated acidity from the onset of testing. Copper and cobalt concentrations exceeded the SSWQO in most leachates collected from 100963. The results of kinetic testing indicate that potentially acid generating rhyolite can leach metals at concentrations of the SSWQO.

Breccia

One sample of breccia, 100925, underwent kinetic testing for a period of 169 weeks (Appendix VII-1f). Select results of kinetic testing of 100925 are presented in Appendix VII-1f:

- Neutral pH values, between 6 and 6.5, were maintained for the majority of the test period. pH values less than 6 were measured in 7 out of 169 weeks of testing.
- Sulphate concentrations decreased from 1.4 mg/L in the first week of testing to <0.5 mg/L.
- Aluminum concentrations exceeded the reference criterion of 0.1 mg/L in week 2, with a concentration of 2.17 mg/L. After week 2, aluminum concentrations varied between <0.01 to 0.06 mg/L.
- Arsenic concentrations exceeded reference criteria throughout testing. Arsenic concentrations decreased from 0.113 mg/L during the initial weeks of testing to longer-term concentration of 0.01 mg/L during later weeks of testing.
- Cadmium concentrations did not exceed the analytical detection limit of 0.0001 mg/L.
- Cobalt concentrations ranged from 0.0013 to 0.00017 mg/L.
- Copper concentrations varied between <0.0008 to 0.0034 mg/L.
- Iron concentrations ranged from 0.01 to 0.19 mg/L
- Molybdenum concentrations varied between 0.00002 to 0.00538 mg/L.
- Lead concentrations ranged from <0.0002 to 0.0008 mg/L.
- Antimony ranged from 0.00024 to 0.0028 mg/L.

- Selenium concentrations did not exceed the analytical detection limits during the 169 week test.
- Uranium ranged from <0.0002 to 0.0007 mg/L.
- Zinc concentrations ranged from 0.0005 mg/L to 0.0023 mg/L.

In general, breccia had a low potential for metal leaching, demonstrated b ythe results of kinetic testing of sample 100925. Concentrations of arsenic exceeded the SSWQO during the early weeks of testing. Acidic pH values were measured in some HCT leachates collected near the end of the 169 week test duration.

Black Rock Schist + Magnetite

Two samples of BRS + mt were submitted for kinetic testing: 100890 (0.03% sulphide) and 100977 (0.04% sulphide). Detailed results of kinetic testing are reported in Appendix VII-1g and VI-1h, respectively. Appendix VII-1g and Appendix VII-1h present select results over the 40 week duration of kinetic testing.

The results of kinetic testing of BRS + mt were as follows:

- Leachate pH varied from 6.39 to 7.9 in 100890 and 5.73 to 7.83 in 100977.
- Both samples reported low sulphate concentrations over the duration of testing. Sulphate varied from <0.5 to 3.7 mg/L in 100890 and <0.5 to 1.6 mg/L in 100977.
- Aluminum decreased from an initial concentration of 0.17 mg/L to 0.02 mg/L in 100890 and from 0.13 mg/L to 0.01 mg/L in 100977.
- Arsenic concentrations decreased from 0.611 to 0.105 mg/L in 100890, and 0.113 to 0.01 in sample 100977.
- Cadmium concentrations did not exceed the analytical detection limit of 0.0001 mg/L.
- Cobalt concentrations ranged from <0.0003 mg/L to 0.0012 mg/L in 100890. Sample 100977 reported cobalt concentrations less than the detection limit of 0.0003 mg/L through the duration of the 40 week test.
- Copper concentrations were generally less than the analytical detection limit of 0.0008 mg/L in both samples.
- Iron concentrations were generally less than or close to the analytical detection limit of 0.02 mg/L in both samples, with the exception of week 15 of testing of 100890 which reported an iron concentration of 3.67 mg/L.
- Molybdenum concentrations decreased during the initial flushing of the samples from 0.0085 mg/L (100890) and 0.0014 mg/L (100977) to less than the analytical detection limit of 0.0003 mg/L.
- Selenium concentrations did not exceed the detection limit of 0.005 mg/L.
- Lead and uranium concentrations were at or near the analytical detection limits.
- Antimony concentrations ranged from 0.0012 to 0.0484 mg/L in 100890, and 0.001 to 0.0183 mg/L in 100977.

- Zinc concentrations rarely exceed the analytical detection limit of 0.001 mg/L during the 40 week period of testing of both samples.

The results of kinetic testing of low-sulphide BRS + mt sample 100977 and 100890 indicate a low potential for acid generation. However, BRS +mt has the potential to leach concentrations of arsenic in excess of the SSWQO, as indicated by the results of kinetic test 100890.

Black Rock Schist ± Magnetite

Two samples of BRS ± mt were submitted for humidity cell testing. Sample 100802, which had a sulphide content of <0.01%, underwent kinetic testing for a period of 40 weeks. Sample 100907 had the second highest Sulphide-sulphur content of the kinetic testing dataset (0.27% sulphide-sulphur). Sample 100907 underwent kinetic testing for a period of 169 weeks. Detailed results of humidity cell testing of sample 100802 and 100907 are presented in Appendix VII-1i and Appendix VII-1j, respectively.

Results of kinetic testing for the low sulphide sample of BRS ± mt (100802) were as follows (Appendix VII-1i):

- Leachate pH values varied from 5.74 to 7.65.
- Sulphate concentrations decreased from 1.1 mg/L to <0.5 mg/L over the 40 week duration of testing.
- Aluminum concentrations ranged from 0.02 to 0.07 mg/L, below the reference criterion of 0.1 mg/L.
- Arsenic concentrations exceeded the analytical detection limit of 0.005 mg/L only once during the 40 week period of testing (0.006 mg/L in week 2).
- Cadmium concentrations did not exceed the analytical detection limit of 0.0001 mg/L.
- Cobalt concentrations were below the analytical detection limit of 0.0003 mg/L.
- Copper concentrations varied from <0.0008 to 0.0012 mg/L, never exceeding the reference criterion of 0.004 mg/L.
- Iron concentrations were generally less than 0.08 mg/L, with the exception of week 15 of testing (1.54 mg/L).
- Molybdenum concentrations decreased from 0.0006 mg/L to less than the analytical detection limit of 0.0003 mg/L.
- Selenium concentrations did not exceed the analytical detection limits.
- Lead and uranium concentrations were at or near the analytical detection limits.
- Antimony concentrations ranged from 0.0012 to 0.0484 mg/L in 100890, and 0.001 to 0.0183 mg/L in 100977.
- Zinc concentrations varied from <0.001 to 0.002 mg/L, below the reference criterion of 0.03 mg/L.

Appendix VII-1j presents select results of kinetic testing of sample 100907:

- Leachate pH decreased from approximately 7.5 at the start of the 169 week test to approximately 6 at the terminus of testing. Values as low as pH 3.88 were measured during the final weeks of testing.

- Sulphate concentrations decreased from sulphate concentrations decreased 2.2 mg/L (100907) to <0.5 mg/L during the 169 week duration of the test. One sample (week 161) reported a sulphate concentration of 3.8 mg/L.
- Aluminum concentrations varied from <0.01 to 0.13 mg/L, exceeding the reference criterion of 0.1 mg/L once during the initial flushing of the cell (week 0).
- Arsenic concentrations ranged from 0.0076 to 0.191 mg/L. The highest arsenic concentrations were measured during the initial flush of the HCT, decreasing to concentrations of approximately 0.007 to 0.03 mg/L for the remainder of the test.
- Cadmium concentrations did not exceed the analytical detection limit of 0.0001 mg/L.
- Cobalt concentrations increased over time from below the detection limit to 0.00045 mg/L.
- Copper concentrations varied between <0.0008 mg/L and 0.112 mg/L, exceeding the reference criterion of 0.004 mg/L in one sample (week 5).
- Iron concentrations were generally near, or less than, the analytical detection limit of 0.02 mg/L. One sample collected in week 15 contained 6.08 mg/L iron.
- Molybdenum ranged from <0.0003 to 0.0015 mg/L.
- Selenium concentrations did not exceed the analytical detection limits.
- Antimony concentrations ranged from 0.00068 to 0.0257 mg/L.
- Lead concentrations ranged from < 0.0002 to 0.0252 mg/L, and uranium from < 0.0002 to 0.0013 mg/L.
- Zinc concentrations were generally less than 0.02 mg/L, with the exception of one sample collected in week 5 (0.109 mg/L).

Black rock schist ± Magnetite with a low sulphide content has a low potential for acid generation and metal leaching, as indicated by the results of kinetic testing of 100802.

Black rock schist ± Magnetite with a sulphide content of approximately 0.3 % has a greater long-term potential for acid generation and metal leaching (i.e., arsenic), indicated by the results of kinetic testing of sample 100907. Discrete, low pH leachate measurements made during the final weeks of testing are likely the result of long-term depletion of buffering capacity from the BRS ± Magnetite.

Sub-Arkosic Wacke

One sample of sub-arkosic wacke was submitted for kinetic testing. Sample 100881 had a sulphide content of 0.02%. Kinetic testing was conducted on this sample for a period of 40 weeks (Appendix VII-1k). Select results of kinetic testing are plotted in Appendix VII-1k.

The results of kinetic testing indicated the following:

- Leachate pH ranged from 6.66 to 8.66, stabilizing at approximately 7 after 10 weeks of testing.
- Sulphate concentrations decreased from approximately 2.1 mg/L at the onset of testing to less than the analytical detection limit of 0.5 mg/L.

- Aluminum concentrations decreased from 0.13 mg/L during the first week of testing to 0.02 mg/L. The reference criterion of 0.1 mg/L was exceeded only during the first week of testing.
- Arsenic concentrations remained above the guideline criteria of 0.005 mg/L during the entire 40 week test, ranging from 0.019 to 0.066 mg/L.
- Bismuth concentrations remained below the detection limit of 0.0003 mg/L.
- Cadmium concentrations did not exceed the analytical detection limit of 0.0001 mg/L.
- Cobalt concentrations remained below the detection limit of 0.0003 mg/L of leachate collected in week 2, which contained 0.004 mg/L cobalt.
- Copper concentrations were below the reference criterion of 0.004 mg/L, with the exception of one sample (week 10, 0.0137 mg/L copper).
- Iron concentrations were less than the reference criterion of 0.3 mg/L, except in week 15, when leachate contained 7.99 mg/L iron.
- Molybdenum concentrations varied from 0.0003 to 0.0035 mg/L, less than the reference criterion of 0.15 mg/L.
- Selenium concentrations did not exceed the analytical detection limit of 0.005 mg/L.
- Antimony concentrations ranged from 0.0004 to 0.003 mg/L.
- Lead and uranium concentrations were at or near the analytical detection limits.
- Zinc concentrations varied between <0.001 and 0.002 mg/L, less than the reference criterion of 0.03 mg/L.

The results of kinetic testing of sample 100881 indicate that low-sulphide wacke has a low potential for acid generation and metal leaching.

Siltstone

One sample of siltstone (100914) underwent kinetic testing over a period of 169 weeks. Sample 100914 contained <0.01% sulphide-sulphur. Detailed results of kinetic testing are presented in Appendix VII-1l, and select results are plotted in Appendix VII-1l.

The results of kinetic testing indicated the following:

- Leachate pH decreased from initial values of approximately 7.5 to 6, with discrete occurrences of acidic pH values (i.e., less than 5.5) measured in leachates collected after 120 weeks of testing.
- Sulphate concentrations were generally less than the analytical detection limit of 0.5 mg/L, ranging to 3.2 mg/L.
- Aluminum concentrations decreased from 0.26 mg/L to 0.01 mg/L, exceeding the reference criterion of 0.1 mg/L only during the initial flushing of the sample.
- Arsenic concentrations decreased over time from 0.011 to 0.0003 mg/L, exceeding the reference criterion of 0.005 mg/L during the first 5 weeks of testing.

- Bismuth concentrations were less than the analytical detection limit for the duration of testing.
- Cadmium concentrations did not exceed the analytical detection limit of 0.0001 mg/L.
- Cobalt concentrations ranged from 0.000009 to 0.000126 mg/L.
- Copper concentrations varied between <0.0008 and 0.0012 mg/L.
- Iron concentrations were varied between 0.02 and 0.06 mg/L for most of the 169 week test duration, with the exception of week 15 (7.73 mg/L iron).
- Molybdenum concentrations decreased from 0.0076 mg/L to <0.00003 mg/L.
- Selenium concentrations were less than the analytical detection limit for the duration of testing.
- Antimony concentrations ranged from 0.0003 to 0.019 mg/L.
- Lead and uranium concentrations were at or near the analytical detection limits.
- Zinc concentrations ranged from <0.0004 to 0.005 mg/L.

In general, low-sulphide siltstone (represented by 100914) has a low potential for acid generation and metal leaching. However, discrete measurements of low pH leachates were made during the final weeks of testing. This is likely the result of the long-term consumption of buffering capacity in the siltstone.

5.7.4.2 Tailings Humidity Cell Tests

Detailed results of humidity cell tests conducted on tailings are presented in Appendix VII-2. Concentration trends of select parameters are presented in Appendix VIII-2.

Bulk Rougher Tailings

One sample of bulk rougher tailings, with a sulphide-sulphur content of 0.02%, underwent kinetic testing for a period of 20 weeks. The results of kinetic testing of bulk rougher tailings are presented in Appendix VII-2a.

Kinetic testing of over a period of 20 weeks indicated the following:

- pH values have been relatively stable since the start of testing, ranging from 7.28 to 7.77.
- Sulphate concentrations in bulk rougher tails leachate decreased from 18 mg/L during the initial flush of the samples to 4 mg/L.
- Aluminum concentrations ranged from 0.02 to 0.05 mg/L.
- Arsenic concentrations varied from 0.097 during the initial flush of the cell to stable concentrations of approximately 0.03 mg/L during later weeks of testing.
- Cadmium concentrations ranged from <0.000003 to 0.000114 mg/L.
- Cobalt concentrations have ranged from 0.0004 to 0.0001 mg/L.
- Copper concentrations were generally less than the analytical detection limit of 0.001 mg/L.
- Iron concentrations ranged from 0.02 to 0.05 mg/L.

- Molybdenum concentrations varied between decreased from 0.004 to 0.0005 mg/L through the duration of testing.
- Lead concentrations ranged from 0.00003 to 0.00022 mg/L, and antimony from 0.003 to 0.0057 mg/L.
- Uranium concentrations ranged from 0.003 to 0.015 mg/L.
- Selenium concentrations varied between 0.002 and 0.004 mg/L.
- Zinc concentrations were below the detection limit (0.01 mg/L).

The results of kinetic testing of bulk rougher tailings suggest a low long-term acid generation and metal leaching potential in laboratory conditions. As discussed in Section 5.8, field scale tests were initiated using large-scale samples of bulk rougher tailings to determine the metal leaching potential of tailings in site specific conditions.

PP#14

Appendix VII-2c presents the results of kinetic testing of PP#14:

- pH varied between 6.57 and 7.75 through the duration of the test.
- Aluminum concentrations ranged from 0.03 to 0.05 mg/L.
- Arsenic concentrations exceeded reference guidelines throughout the test, decreasing from 0.05 mg/L to a steady state concentration of approximately 0.02 mg/L.
- Cadmium concentrations ranged from <0.000003 to 0.000067 mg/L.
- Cobalt concentrations varied between 0.0006 mg/L to 0.0012 mg/L.
- Copper concentrations were less than the analytical detection limit of 0.001 mg/L for most of the test.
- Iron concentrations decreased from 0.12 mg/L during the initial week of testing to approximately 0.02 mg/L.
- Molybdenum concentrations ranged from 0.0017 mg/L to 0.0036 mg/L.
- Lead concentrations ranged from <0.00002 to 0.00009 mg/L, and antimony from 0.002 to 0.005mg/L.
- Uranium concentrations ranged from 0.001 to 0.005 mg/L.
- Selenium concentrations varied between <0.001 to 0.003 mg/L.
- Zinc concentrations remained below the detection limit (0.01 mg/L).

The results of kinetic testing of PP#14 suggest that the combined bulk rougher and bulk cleaner tailings have a low long-term potential for acid generation and metal leaching in laboratory conditions.

5.7.5 Persistence of Acid Generation and Metal Leaching in Mine Rock and Tailings Humidity Cell Tests

The results of kinetic testing were used to calculate rates of sulphide and NP depletion to predict the lag time to the onset of acid generating conditions (if ever) in laboratory scale samples of Mine Rock and tailings. The calculation use the last 5 weeks of data and assume that all sulphide and NP are available for reaction.

These calculations are estimates, at best, since there will be variable site specific exposure conditions, such as the variation in grain size between the crushed samples of Mine Rock in the laboratory versus the grain size distribution of Mine Rock, and the nature of water to rock / tailings contact).

A summary of results for the kinetic testing of Mine Rock are presented in Table 5-15. Depletion calculations indicate that samples 100932 (rhyolite) and 100907 (BRS±mt) have a long-term potential for acid generation. The onset of acidic conditions occurred at week 20 in 100932. The results of kinetic testing of 100907 trended towards acidic conditions throughout the 169 week duration of testing. Despite the onset of acid generating conditions, both samples reported relatively low concentrations of sulphate through the duration of testing (i.e., below 10 mg/L after the initial flushing of the cells). These concentration trends indicate a relatively slow, steady rate of sulphide oxidation and metal release. Acid generation is the result of the lack of available NP in the samples.

Concentrations of metals that occurred at elevated concentrations in short-term leach tests, including aluminum, iron, copper, and zinc, rarely exceeded the reference criteria in long-term leachates. Trace metal concentrations peaked during the initial flush of the cells (i.e., during the dissolution of soluble mineral phases), stabilizing at long-term, steady state concentrations. In general, arsenic concentrations peaked during the initial flush of the cells, stabilizing at long-term concentrations after several weeks of laboratory testing. Most Mine Rock HCTs reported measureable long-term arsenic concentrations; however, only one HCT reported a long-term arsenic concentration in excess of the SSWQO for arsenic. Sample 100890 (BRS (+ magnetite)) had a solid phase concentration of 1900 parts per million (ppm) arsenic. The long-term arsenic concentration in this HCT was 0.119 mg/L.

A summary of results for the kinetic testing of tailings are presented in Table 5-16. Kinetic testing confirmed that tailings are unlikely to generate acidity in the long-term. Long-term arsenic concentrations in tailings samples were less than steady state concentrations from Mine Rock HCTs and less than the SSWQO. In addition, selenium concentrations in long-term HCT leachates were less than the SSWQO for selenium. Long-term concentrations of all other metals that occurred at elevated concentrations in short-term tailings leachates and decant water, including aluminum, cadmium, copper, iron, and zinc, were less than the reference criteria.

Table 5-15: Summary of Long-Term Acid Generation and Metal Leaching Potential in Mine Rock Humidity Cell Tests

Sample ID	Sulphide Depletion			NP Depletion			Acid Generation Potential	Metal Leaching Potential	
	Sulphide -sulphur (%)	Depletion Rate (mg/kg/week)	Time to Depletion (Years)	NP (t $CaCO_3$/ 1000 t)	Depletion Rate (mg/kg/week)	Time to Depletion (Years)		Solid Phase Arsenic Concentration (ppm)	Steady-State Arsenic (mg/L)[a]
Feldspar Porphyry									
100859	0.02	0.16	24	12	6	41	Non-ARD	21	0.008
100913	0.04	0.16	48	16	7	41	Non-ARD - negligible sulphide content	65	0.007
Rhyolite									
100863	<0.01	0.16	8	11	4	45	Non-ARD	200	0.0493
100932	0.49	2.0	45	0	N/A[b]	N/A[b]	ARD - acid generated during kinetic testing	200	0.0022
100872	0.01	0.18	10	12	8	29	Non-ARD	36	0.0135
Breccia									
100925	0.01	0.16	8	9	1	148	Non-ARD	200	0.0094
BRS (+ magnetite)									
100890	0.03	0.16	34	10	2	84	Non-ARD	1700	0.119
100977	0.04	0.16	46	14	3	90	Non-ARD	1100	0.01
BRS (± magnetite)									
100802	<0.01	0.16	11	28	2	246	Non-ARD	41	<0.005
100907	0.27	0.18	285	10	0	514	ARD - acid generated during kinetic testing	5100	0.03
Sub-Arkosic Wacke									
100881	0.02	0.16	8	10	1	165	Non-ARD	38	0.038
Siltstone									
100914	<0.01	0.16	24	17	4	85	Non-ARD	5	0.0003

[a] Average concentration measured during the last 5 weeks of kinetic testing (i.e., “steady state” concentration)

[b] Initial NP is zero and therefore these calculations cannot be competed.

ARD = acid rock drainage; BRS = black rock schist; NP = neutralization potential; mg/kg/week = milligram per kilogram per week; mg/L = milligram per Litre; t = tonne; ppm = parts per million

Table 5-16: Summary of Long-Term Acid Generation and Metal Leaching Potential in Tailings Humidity Cell Tests

Sample ID	Sulphide-Depletion			NP Depletion			Acid Generation Potential	Metal Leaching Potential	
	Sulphide-sulphur (%)	Depletion Rate (mg/kg/week)	Time to Depletion (Years)	NP (t $CaCO_3$/ 1000 t)	Depletion Rate (mg/kg/week)	Time to Depletion (Years)		Arsenic (ppm)	Steady-State Arsenic (mg/L)[a]
Bulk Rougher Tailings	0.02	1.4	2	25	9	51	Non-ARD	170	0.03
PP#14	0.02	5.4	0	23	22	19	Non-ARD	280	0.025

[a] Average concentration measured during the last 5 weeks of kinetic testing (i.e., “steady state” concentration)

ARD = acid rock drainage; NP = neutralization potential; mg/kg/week = milligram per kilogram per week; mg/L = milligram per Litre; t = tonne; ppm = parts per million

5.8 Field Scale Testing

5.8.1 Overview

Several large-scale field scale geochemical leach tests were constructed at the NICO site in 2008 and 2009, using samples of ROM rock collected from the bulk sample stockpiles and pilot plant tailings. The field tests, referred to as "field cells" were constructed to evaluate the long-term reaction rates of sub-economic mineralized rock, ore and tailings in ambient site conditions. Field cells consist of a large mass of sample that is contained in a large, enclosed container that remains open to the atmosphere (Appendix II). Ambient precipitation filters through the field cells. Leachates collected from the field cell on a monthly basis represent the interaction/reaction of the input water (i.e., ambient precipitation for field cells) with the minerals of the test material.

The principal objective of the field cell program at the NICO Project is to evaluate the rate of reaction of subeconomic mineralized Mine Rock, ore, and tailings in the sub-arctic conditions that prevail at the NICO Project site. This information will form a key input to operational and post-closure engineering designs at the NICO Project, including mine planning and site design (i.e., tailings and rock disposal), evaluation of mitigation strategies, and consideration of long-term treatment options.

Despite the inherent advantages to field scale testing (i.e., larger sample size and site specific weathering conditions), certain limitations remain with respect to the application of field cell data for prediction of full scale geochemical characteristics of mine facilities, including:

- Due to natural geological variability, samples selected for field cell construction may not represent the compositional variability of the overall materials to be encountered at the site. Five field sub-economic mineralized rock and ore field cells were constructed with samples of feldspar porphyry and BRS in August 2008. The 3 tailings field cells constructed in April 2010 represent the dominant tailings type (bulk rougher tailings).
- Field cell temperatures will closely resemble ambient air temperatures. The internal temperature in mine waste containment facilities constructed at the site could differ from the ambient air temperature.
- Air completely infiltrates the field cells; however, complete infiltration of air may not occur in mine waste containment facilities constructed at the site.
- Due to physical containment of the rock and tailings within the field cells, infiltration contacts a high proportion of material surfaces. It is probable that a significant portion of reaction products will be removed by infiltration through the field cells. The contact between solids and infiltration may not be the same in actual the mine waste containment facilities at the site, owing to lower water to solid ratios.

5.8.2 Sample Selection

Field cells were installed at the NICO Project to evaluate the long-term stability of Mine Rock, ore and tailings in site-specific conditions. Each field cell consists of a single rock type, ore type, or tailings type. Large scale samples of sub-economic mineralized rock and ore used in field cell construction were collected from the ROM stockpiles in August 2008. The method of sample collection is outlined in Appendix II. Five samples weighing approximately 200 kg were collected from 5 stockpiles, respectively (Table 5-16). Stockpiles were targeted for

sampling based on the ore grade assays provided by Fortune geologists, and field observations made during the sample collection.

Large scale samples of the tailings products that could be produced at the NICO site were provided by SGS Lakefield. These samples are the product of metallurgical pilot plant testing that was conducted in 2008. Samples were shipped to the NICO site for field cell construction, which took place in April 2010 (Table 5-16).

Representative sub-samples of each sample used for field cell construction were submitted for geochemical characterization, including static testing, mineralogy, and grain size analysis to quantify the source of reaction products measured in field cell leachate. The results of geochemical analysis of samples used to construct the field cells are reported in Sections 5.1 through 5.5. Table 5-17 summarizes key parameters in samples used to construct the field cells at the NICO Project.

Table 5-17: Overview of Composition of Sub-Economic Mineralized Mine Rock, Ore and Tailings Field Cells

Field Cell ID	Description	Date of Installation	Sulphide-sulphur %	NP (t $CaCO_3$/1000 t)	NP/AP	NAG-pH	Arsenic ppm	Bisuth ppm
Sub-Economic Mineralized Mine Rock								
FC-1	Feldspar Porphyry with some BRS (Oct 5 DS)	24-Aug-08	0.02	12.7	20.5	7.87	1200	320
FC-2	BRS (Oct 9 NS)	24-Aug-08	0.18	12.8	2.3	7.38	580	4900
FC-3	BRS (Mar 10 NS)	24-Aug-08	0.29	13.9	1.5	5.51	5400	2600
FC-4	BRS (Mar 8 NS)	24-Aug-08	0.34	14.5	1.4	3.97	4300	2200
Ore								
FC-5	BRS / Ore (Aug 28 DS)	24-Aug-08	1.4	11.6	0.3	2.38	33 000	380
Tailings								
FC-8, 9, and 10	Bulk Rougher Tails	16-Mar-09	0.02	24.8	46	9.49	170	460

AP = acid potential; BRS = black rock schist; NAG = net acid generation; NP = neutralization potential; t = tonne; ppm = parts per million

5.8.3 Data Analysis

Leachate samples were collected from the field cells several times between the date of construction and September 2010. Samples are collected during the spring/summer months (i.e., May/June through September). The results of analysis of leachates collected, to date, are presented in Appendix IX. Monthly leachates are submitted for analysis including standard parameters (i.e., pH, alkalinity and conductivity), nitrate and nitrite, major ions, and dissolved trace metals.

The composition of field cell leachates was compared to the reference criteria outlined in Appendix VI. This comparison was performed to qualitatively identify parameters that require further consideration within the context of the overall site water quality. It is anticipated that several years of evaluation of the sub-economic mineralized Mine Rock, ore, and tailings field cells will be required to develop meaningful concentration trends, indicative of reaction rates in site conditions. Field cell tests were ongoing at the date of preparation of this report.

5.8.4 Results

Sub-Economic Mineralized Mine Rock – FC-1, FC-2, FC-3, and FC-4

Sub-economic mineralized Mine Rock samples were used to construct 4 field cells. Two of the sub-economic mineralized rock field cells (FC-1 and FC-2) have a low potential for acid generation, according to the results of ABA and NAG testing. FC-3 has an uncertain potential for acid generation. Sample FC-4 is considered likely to generate acidity based on the results of ABA and NAG testing.

Detailed results of field cell leachate analysis conducted during the first year of testing are presented in Appendix IX. Table 5-18 summarizes the results of field cell leachate analysis available at the date of preparation of this report.

Neutral pH values have been measured in sub-economic mineralized mien rock field cell leachates since the date of installation in 2008. Parameters that occurred at concentrations in excess of SSWQO in field cell leachates include arsenic, selenium, molybdenum, antimony, and uranium. Stable concentration trends have not yet been achieved in field cell leachates; monitoring of field cell leachate concentration trends is ongoing to determine the rate of mineral reaction in sub-economic mineralized Mine Rock in site conditions.

Nitrate and nitrite concentrations were measured in sub-economic mineralized rock field cell leachates, as summarized in Table 5-17. Nitrate is a primary component of the blasting agent ANFO (NH_4NO_3). ANFO residuals often remain in ROM rock after blasting, which is the likely source of nitrate and nitrite concentrations in field cell leachates. Ongoing field cell monitoring will evaluate the rate of decomposition of nitrogen species over time in site specific conditions.

Ore – FC-5

One field cell was constructed with rock collected from a bulk sample stockpile that contained ore (as defined by Fortune geologists at the time of sample collection). The results of ABA and NAG testing indicated a likely potential for acid generation. The solid phase arsenic concentration of this sample was the greatest of all field cell samples at 33 000 ppm.

Appendix IX presents detailed results of field cell leachate analysis, as summarized in Table 5-17.

Neutral leachate pH conditions have been maintained in leachate from FC-5 since the date of installation of the field cell. Arsenic concentrations have been consistently greater than 1 mg/L in FC-5 field cell leachate, exceeding the SSWQO of 0.05 mg/L. In addition to arsenic, parameters that occurred at concentrations in excess of SSWQO in field cell leachates include sulphate, cadmium, cobalt, molybdenum, lead, selenium, and uranium. Stable concentration trends have not yet been achieved in field cell leachates; monitoring of FC-5 is ongoing to determine the rate of reaction of ore in site specific conditions.

Concentrations of nitrate and nitrite were measured in ore field cell leachates collected during the first year of monitoring (Table 5-18). Field cell monitoring will evaluate the decomposition of nitrogen species in site specific conditions.

Table 5-18: Summary of Results of Field Cell Leachate Analysis (September 2008 to September 2010) – Sub-Economic Mineralized Mine Rock (FC-1 through FC-4) and Ore (FC-5)

	Description	Sub-economic Mineralized Rock (ROM Stockpiles)								Ore (ROM Stockpiles)	
	Field Cell ID	FC-1		FC-2		FC-3		FC-4		FC-5	
	n[a]	7		5		5		7		7	
	Reference Criteria[b]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]
pH	6.5 - 9	7.3- 8	0	7.8- 8	0	7.1- 7.9	0	7.4- 7.9	0	7.5- 7.8	0
Sulphate (mg/L)	500	31- 197	0	29- 284	0	63- 284	0	213- 363	0	140- 960	1
Aluminum (mg/L)	0.41	<0.010- 0.039	0	<0.01- 0.01	0	<0.010- 0.088	0	<0.010	0	<0.010	0
Arsenic (mg/L)	0.05	0.08- 0.24	7	0.003- 0.01	0	0.01- 0.04	0	0.005- 0.05	1	1.4- 2.3	7
Cadmium (mg/L)	0.00015	<0.0001- 0.0002	1	<0.00010	0	<0.0001- 0.0002	1	<0.0001- 0.0001	0	<0.0001- 0.0003	2
Cobalt (mg/L)	0.01	0.0013- 0.0062	0	0.0002- 0.0013	0	0.0024- 0.0038	0	0.0008- 0.0058	0	0.0010- 0.0105	1
Copper (mg/L)	0.022	0.0019- 0.0039	0	0.0018- 0.0038	0	0.0030- 0.0049	0	0.0018- 0.0038	0	0.0016- 0.0053	0
Iron (mg/L)	1.5	<0.005- 0.019	0	<0.005- 0.019	0	<0.010- 0.118	0	<0.005- 0.021	0	<0.005- <0.010	0
Molybdenum (mg/L)	0.073	0.02- 0.12	1	0.010- 0.030	0	0.01- 0.05	0	0.006- 0.012	0	0.02- 0.14	1
Lead (mg/L)	0.0076	<0.00010	0	<0.0001	0	<0.00010	0	<0.00010	0	<0.00010	0
Antimony (mg/L)	0.03	0.023- 0.064	4	0.02- 0.023	0	0.021- 0.058	4	0.015- 0.032	3	0.034- 0.090	7
Selenium (mg/L)	0.005	0.003- 0.03	5	0.035- 0.099	3	0.012- 0.04	5	0.028- 0.09	7	0.003- 0.04	6
Uranium (mg/L)	0.027	0.04- 0.16	7	0.014- 0.042	1	0.001- 0.059	2	0.002- 0.030	1	0.01- 0.33	6
Zinc (mg/L)	0.11	<0.001- 0.0097	0	0.0011- 0.006	0	0.0035- 0.0035	0	0.0012- 0.006	0	0.0011- 0.026	0

[a] Total number of samples.

[b] Reference criteria as listed in Appendix VI.

[c] Number of samples with leachate concentrations in excess of the reference criteria.

ROM = run-of-mine; mg/L = milligrams per Litre

Tailings – FC-8, FC-9, and FC-10

Three field cells were constructed using a sample of bulk rougher tailings from the 2008 pilot plant. The results of ABA and NAG testing, and laboratory scale humidity cell testing indicate that the bulk rougher tailings have a low potential for acid generation. Appendix IX presents detailed results of tailings field cell leachate analysis, as summarized in Table 5-19.

Neutral leachate pH conditions have been maintained in tailings field cell leachates. Parameters that occur at concentration in excess of the SSWQO in tailings field cell leachates include: arsenic, selenium, and uranium. Iron, aluminum, lead, cobalt, and copper exceeded the SSWQO in one sample collected from FC-8 immediately after field cell set-up. Stable concentration trends have not yet been achieved in the tailings field cell leachates; monitoring of the tailings field cells is ongoing to determine the rate of reaction of ore in site specific conditions.

Table 5-19: Summary of Results of Field Cell Leachate Analysis (April to September 2010) – Bulk Rougher Tailings (FC-8, FC-9, and FC-10)

	Description	Bulk Rougher Tailings					
	Field Cell ID	FC-8		FC-9		FC-10	
	n[a]	4		3		3	
	Reference Criteria[b]	Results	n (ex)[c]	Results	n (ex)[c]	Results	n (ex)[c]
pH	6.5 - 9	7.8- 8.0	0	7.7- 7.9	0	7.8- 8.0	0
Sulphate (mg/L)	500	27- 206	0	10- 213	0	59- 192	0
Aluminum (mg/L)	0.41	0.01- 7.4	1	<0.01- 0.036	0	<0.01- 0.013	0
Arsenic (mg/L)	0.05	0.07- 0.41	4	0.08- 0.13	3	0.14- 0.20	3
Cadmium (mg/L)	0.00015	<0.000- 0.0001	0	<0.00010	0	<0.0001- 0.00011	0
Cobalt (mg/L)	0.01	0.0004- 0.05	1	0.0006- 0.0018	0	0.0002- 0.0015	0
Copper (mg/L)	0.022	0.0008- 0.02	1	0.0009- 0.0019	0	0.0008- 0.0027	0
Iron (mg/L)	1.5	<0.010- 31	1	<0.010- 0.147	0	<0.010- 0.048	0
Molybdenum (mg/L)	0.073	0.002- 0.038	0	0.001- 0.040	0	0.004- 0.034	0
Lead (mg/L)	0.0076	<0.0001- 0.0125	1	<0.00010	0	<0.0001- 0.0002	0
Antimony (mg/L)	0.03	0.013- 0.028	0	0.007- 0.018	0	0.016- 0.023	0
Selenium (mg/L)	0.005	0.004- 0.04	3	0.002- 0.04	2	0.011- 0.04	3
Uranium (mg/L)	0.027	0.067- 0.16	4	0.021- 0.21	2	0.094- 0.25	3
Zinc (mg/L)	0.11	0.0016- 0.204	1	0.0017- 0.004	0	0.0025- 0.0076	0

[a] Total number of samples.

[b] Reference criteria as listed in Appendix VI.

[c] Number of samples with leachate concentrations in excess of the reference criteria.

mg/L = milligrams per Litre

6.0 GEOCHEMICAL FACTORS INFLUENCING MINE WASTE MANAGEMENT

Based on the results of the geochemical characterization program, key factors that could influence the overall Mine Rock and tailings management, mitigation, and treatment requirements at the NICO Project include:

- distribution of acid generating materials; and
- distribution of solid phase arsenic and selenium, and associated leaching potential.

The distribution of acid generating minerals (i.e., sulphide minerals) and metals in ore and waste lithologies at the NICO Project is a function of the degree of mineralization of the host rocks (associated with metamorphic alteration) and proximity to the ore zone. The following sections provide an overview of the causes of mineral emplacement and resulting mineral distribution within the NICO ore body, followed by an overview of the distribution of acid generating and metal leaching mine wastes. Appendix 3.I of Section 3 of the DAR presents the preliminary Mine Rock management plan for the NICO Project, including a detailed discussion of how the criteria for Mine Rock management were developed. This section provides a high level overview of factors that could influence mine waste management at the NICO Project.

6.1 Mineral Distribution and Emplacement

Ore grade mineralization at the NICO Project is the product of metamorphic alteration (i.e., metasomatism) of existing host rocks. The main rock types that will be encountered during mining include BRS and wacke, rhyolite and feldspar porphyry. Metasomatism of these rocks resulted in the formation of 3 ore zones, referred to as the upper, middle, and lower ore zones, and small lenses of mineralization within the rhyolite and feldspar porphyry. The degree of metamorphic alteration defines the extent of ore-grade and non-ore grade mineralization, and associated geochemical characteristics of site lithologies. Native gold and bismuth and bismuth tellurides are restricted zones of greater metamorphic alteration. The extent of cobaltite mineralization, to some extent, is also restricted. The occurrence of arsenopyrite is widespread, with elevated concentrations noted in both zones of higher grade mineralization and zones of weaker (i.e., non-ore grade) mineralization.

Solids content of the rock is a function of the mineralogy. Analyses of solids content show several metals occurred at concentrations in excess of the average crustal abundances, including antimony, arsenic, bismuth, cobalt, copper, tin and uranium. Elevated concentrations of arsenic, cobalt, and bismuth, in particular, are reasonable in consideration of the alteration and mineralization associated with metamorphic alteration. Statistical analyses indicated that in sub-economic mineralized rock and ore, arsenic and cobalt correlate positively with sulphide-sulphur. Cobaltite [(Co,Fe)AsS] and cobalt-bearing arsenopyrite [FeAsS] are ubiquitous in mineralized zones in the NICO ore deposit.

Although selenium minerals were not identified during exploration stage mineralogical analysis (Petrologic Inc. 1999), follow-up analysis of exploration drill core confirmed the solid phase correlation of selenium and bismuth, indicating that these minerals likely occur in the same mineral phase in mineralized rock. Selenium and bismuth correlate poorly with solid phase concentrations of sulphur, which is consistent with descriptions of the mineralogical occurrence of bismuth in the ore zone. According to Petrologic Inc. (1999), bismuth mineralization occurs as native bismuth and bismuth telluride [$BiTe_3$], with less common bismuthinite [Bi_2S_3] and bismuth sulphosalts. Furthermore, a literature review indicated that bismuth selenide [Bi_2Se_3] is commonly associated

with bismuth ore deposits. The results of solid phase analysis indicate that selenium mineralization is likely associated with the same zones of mineralization in the ore deposit as native bismuth and bismuth telluride.

6.2 Distribution of Acid Generating Materials

The results of ABA indicated that Mine Rock, sub-economic mineralized rock and low grade ore contains relatively little NP; therefore, the acid generation potential of Mine Rock, sub-economic mineralized rock, and ore is largely a function of the sulphide-content of the material. The evaluation of the results of the geochemical characterization program indicated that most Mine Rock can be classified as non potentially acid generating (non-PAG). Sulphide minerals represent the main source of AP in a sample. The range of sulphur concentrations in Mine Rock samples was <0.01 to 1.6% (median 0.05 %). Although Mine Rock has a low buffering capacity (i.e., low carbonate mineral concentrations), the sulphide concentrations in most samples were so low that that the samples were not capable of generating acidic runoff or seepage. Mine Rock samples that contain elevated sulphur concentrations have a higher potential for acid generation. Sub-economic mineralized Mine Rock had a higher potential for acid generation owing greater higher sulphur concentrations (0.06 and 0.63%, median 0.38%).

Sulphide minerals are the primary reactive source of acidity, metals, and sulfate in Mine Rock samples from the NICO Project. Measurement of the sulphur content is an indicator of the potential reactivity of a sample. Sulphide sulphur can be obtained quickly and reliably on-site, which is a key requirement for an operational Mine Rock management tool. On-site measurement of sulphur content by Leco furnace is one of the most common methods used for operational classification of Mine Rock (MEND 2009). Using the sulphide-sulphur content of samples in the geochemical characterization dataset, the occurrence of acid generating waste material is as follows:

- Overall, only 10% of the samples of exploration drill core and outcrop collected from the NICO Project had a potential for acid generation based on sulphide-sulphur content;
  - 13% of the rhyolite Mine Rock samples submitted for geochemical characterization contained greater than 0.3% sulphide-sulphur;
  - 15% of the sub arkosic wacke, BRS (+magnetite), BRS (± magnetite) breccia and faulted Mine Rock samples contained greater than 0.3% sulphide-sulphur; and
  - None of the feldspar porphyry samples submitted for ABA contained greater than 0.3% sulphide-sulphur.
- Sub-economic mineralized rock samples collected from the ROM stockpiles had greater accumulations of sulphide minerals, and therefore has a greater potential to generate acidity, 45% of the samples of sub-economic mineralized Mine Rock submitted for geochemical testing contained greater than 0.3% sulphide sulphur.
- 76% of the ore samples collected from the ROM stockpiles contained greater than 0.3% sulphide-sulphur.

The results of long-term, laboratory humidity cell tests confirmed that samples of Mine Rock with low sulphide-sulphur content have a low potential for acid generation. The results of kinetic tests provide rates for acid generation, acid neutralization, and metal release in laboratory conditions (i.e., enhanced leaching conditions). Of the 12 samples of Mine Rock submitted for kinetic testing, only 2 samples generated acidic leachate pH

values in the duration of the tests. Both samples had sulphide-sulphur concentrations approximately equal to or greater than 0.3%.

The potential for acid generation of sub-economic Mine Rock samples is currently being evaluated using on-site field tests. Field tests were initiated in 2008; although all samples are considered potentially acid generating based on NP:AP ratio and sulphide sulphur content, acidic pH values have not yet been measured in the field cell leachates.

The evaluation of the results of geochemical characterization indicates that rock that contains less than 0.3% sulphide-sulphur has a low long-term potential for acid generation. A mine block model was created to evaluate the concentrations of key metals that could be used for the purpose of Mine Rock classification, including sulphide-sulphur, arsenic and bismuth. Table 6-1 presents preliminary estimates of the tonnage of PAG rock that could be encountered during each year of mining that contains less than 0.3% sulphide-sulphur according to the mine block model.

Table 6-1: Preliminary Mine Rock Production Summary

	Estimated Tonnage[a]			**Total Mine Rock Tonnages[b]**	
Sulphide Sulphur Content	**<0.3%**		**<0.3%**	**Mine Rock**	**Sub-economic Mineralized Mine Rock**
Bismuth Content		**<50 ppm**	**<50 ppm**		
Arsenic Content			**<1,000 ppm**		
Year 1	1 275 412	419 900	197 296	1 019 513	58 877
Year 2	4 749 594	2 730 550	1 210 431	4 898 390	110 416
Year 3	7 696 083	3 165 486	1 020 565	7 751 431	285 586
Year 4	11 973 095	5 155 147	2 579 658	11 193 692	676 627
Year 5	10 322 302	6 647 836	3 668 388	10 048 962	254 404
Year 6	7 299 347	3 878 730	1 822 596	6 274 724	312 153
Year 7	6 379 712	3 819 390	1 924 929	6 142 827	282 159
Year 8	6 503 804	3 849 622	1 975 131	6 334 860	260 530
Year 9	5 999 813	3 907 045	2 278 094	5 917 521	323 976
Year 10	5 034 389	2 914 227	1 963 420	4 748 152	267 470
Year 11	5 364 186	2 943 865	1 883 961	4 894 501	377 169
Year 12	5 843 061	2 895 516	1 699 550	5 664 242	540 102
Year 13	4 051 726	2 124 413	767 512	5 090 228	337 110
Year 14	3 420 996	2 050 381	378 569	5 312 509	410 499
Year 15	3 144 801	1 039 899	243 295	3 991 675	650 796
Year 16	1 167 657	1 167 657	133 077	1 508 183	462 112
Year 17	1 926 132	1 192 298	398 913	1 760 747	253 621
Year 18	1 817 368	1 064 553	342 683	1 899 878	327 120
Year 19	1 883 685	1 278 488	495 467	2 238 879	242 060
Year 20	122 320	92 867	6 838	109 144	36 696

[a] Tonnages provided by P&E Mining Consultants on 2 July 2010. The estimate tonnage of rock represents the total tonnage of rock according to the defined geochemical characteristics.

[b] Total tonnage of Mine Rock produced each year, based on the production schedule provided by P&E Mining Consultants on 9 July 2010.

ppm = parts per million; < = less than; % = percent

Appendix 3.I of Section 3 of the DAR further discusses the preliminary Mine Rock management plan for the NICO Project, including a detailed discussion of the handling of potentially acid generating Mine Rock.

The current mine plan indicates that 31 Mt of tailings will be generated during the life of mine. In general, tailings from the project are predicted to have a low acid generation potential: the NP/AP ratio of bulk rougher tailings was 46; bulk cleaner tailings had an NP/AP ratio of 3.

6.3 Metal Leaching Potential

Laboratory and field scale leach tests were conducted to evaluate the metal leaching potential of Mine Rock, sub-economic mineralized rock, ore and tailings. As discussed in Sections 5.4, 5.5, 5.6 and 5.7, several metals leached at concentrations in excess of the reference criteria for the project in laboratory and field test leachates.

Arsenic and selenium are considered the key metals that may require further evaluation with respect to site water quality. Laboratory leach tests indicate that arsenic and selenium are capable of leaching from mine waste materials in both neutral pH and acidic pH conditions. The following sections provide an overview of the solid phase distribution and leachability of arsenic and selenium in Mine Rock, sub-economic mineralized rock, ore, and tailings at the NICO Project.

6.3.1 Arsenic Distribution

Statistical analysis indicated that arsenic is associated with sulphide and cobalt in sub-economic mineralized rock and ore. Geological descriptions of the deposit indicate that arsenopyrite and cobaltite formed in association with the alteration sequence that formed the NICO ore deposit. However, the correlation between arsenic and sulphide is not as well defined in Mine Rock that occurs outside of the zones of mineralization.

As presented in Figure 6-1, a reasonable correlation exists between solid phase concentrations of arsenic and arsenic concentrations in geochemical test leachates. Short-term leachate concentrations of arsenic correlate strongly with solid phase arsenic concentrations, but not necessarily with solid phase sulphide concentrations. This result indicates that arsenic leachability is not necessarily correlated with the acid generation potential of waste materials from the project. Humidity cell tests confirm that samples with a low acid generation potential are capable of leaching elevated concentrations of arsenic in the long-term. Arsenic leaching potential does not correlate with bismuth mineralization (Figure 6-1). Mine Rock from outside the ore zone is capable of leaching elevated concentrations of arsenic, as well as sub-economic mineralized rock, ore and tailings.

6.3.2 Selenium Distribution

Solid phase selenium concentrations correlate with solid phase bismuth concentrations, indicating that selenium is associated with bismuth mineralization in the ore deposit. Short-term leachate concentrations of selenium correlate with both solid phase bismuth and selenium concentrations (Figure 6-2). Selenium was not detected in short-term leachates or HCT leachates from Mine Rock (i.e., drill core) outside of the mineralized zones. Short-term leachates, decant water and humidity cell test leachates reported concentrations of selenium in excess of the reference criteria. The results of geochemical characterization indicate that selenium leaching potential may be associated with tailings, ore and sub-economic mineralized rock contact waters.

Figure 6-1
Metal Leaching Potential - Short-Term Leach Test Results versus Solid Phase Concentrations (Arsenic)
NICO Project, Fortune Minerals Limited

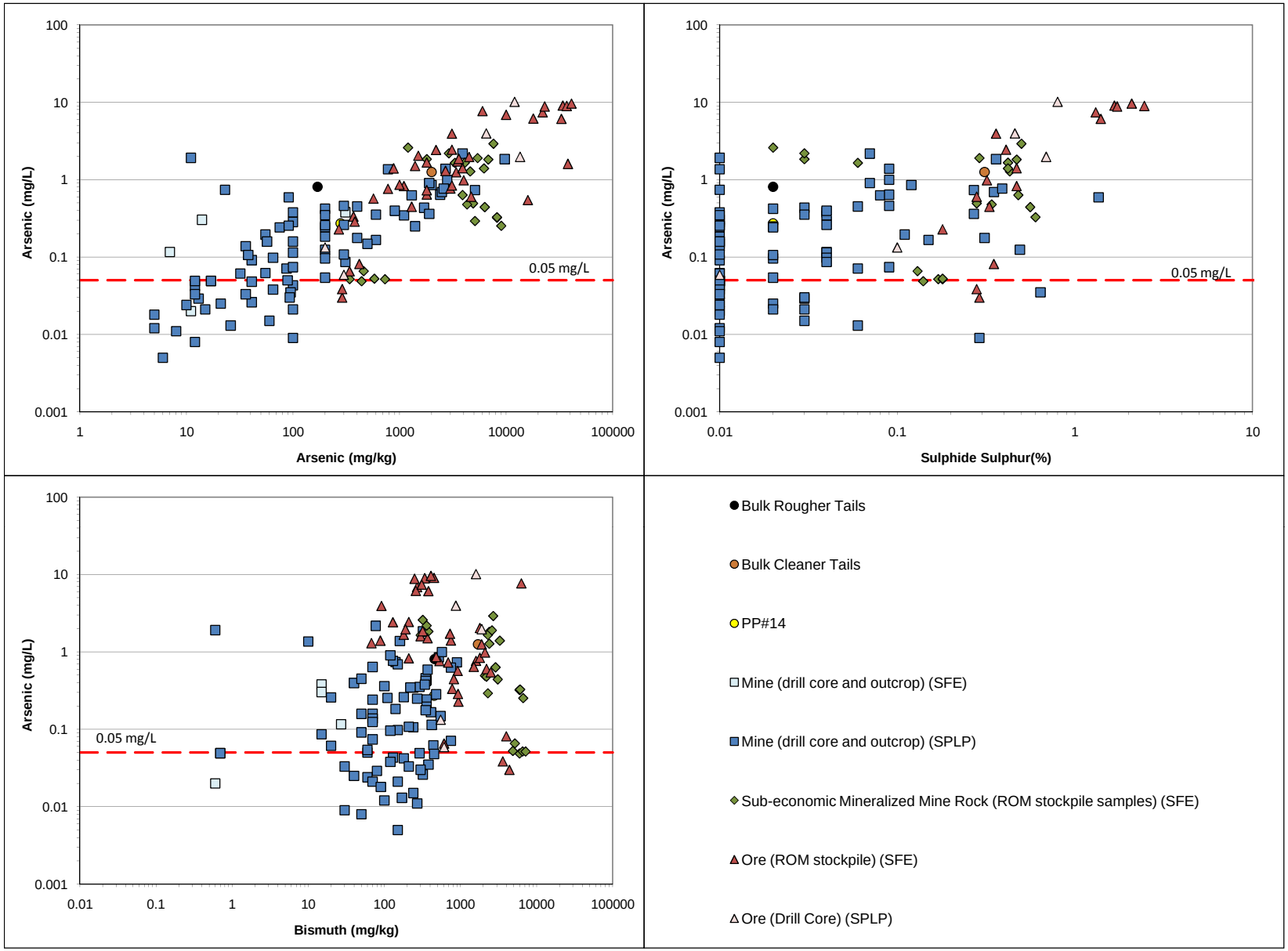
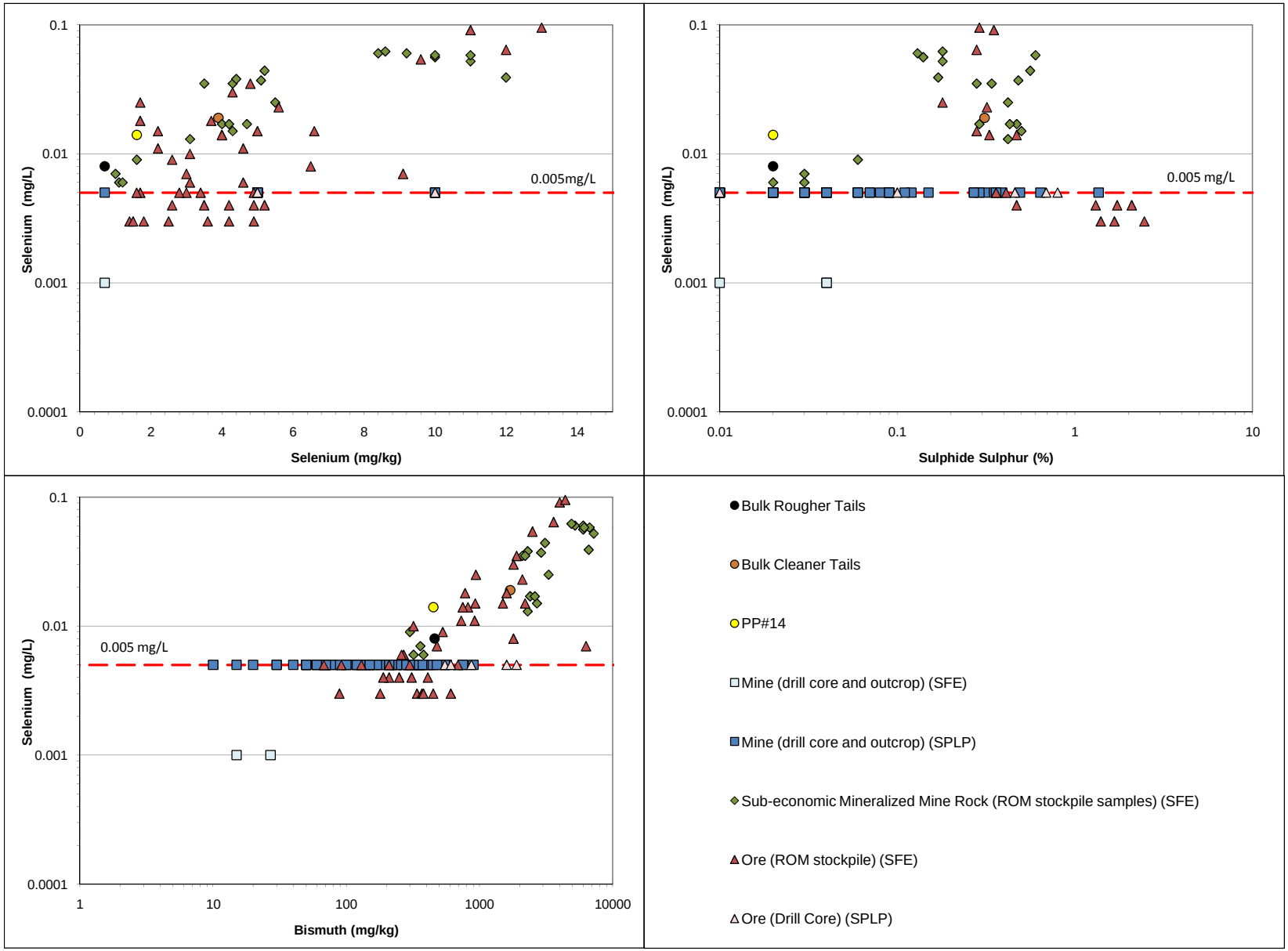


Figure 6-2
Metal Leaching Potential - Short-Term Leach Test Results versus Solid Phase Concentrations (Selenium)
NICO Project, Fortune Minerals Limited



6.3.3 Environmental Behaviour of Arsenic and Selenium

The mobility of arsenic and selenium is strongly dependant on the pH and redox condition of a system. Arsenic mobility is greatest in weakly oxidized to reduced, neutral pH conditions, where the dominant arsenic species is arsenite (As(III)). Selenium mobility is enhanced in oxidized conditions, existing as selenate (Se (VI)). Mobility of these metals is further controlled by the mineral phases in which they occur in mine waste.

The correlation between solid phase and leachate concentrations indicates that selenium and arsenic are soluble in leachates from small-scale laboratory leach tests. Although the results of laboratory leach tests do not directly translate to the expected environmental behaviour of Mine Rock (because of grain size differences, differences in water:rock contact in site conditions, and ambient climatic conditions), the results of laboratory leach tests are a reasonable method of estimating metal leachability in the absence of site specific data. Field cell tests constructed using samples of mineralized, ROM rock also show elevated concentrations of arsenic and selenium leach from ROM in ambient site conditions.

The arsenic and selenium leaching potential of Mine Rock, sub-economic mineralized rock, ore and tailings has been considered with respect to Mine Rock management for the Project. Site management plans, engineering designs and water treatment have accounted for the metal leaching potential of mine wastes.

7.0 SUMMARY OF KEY RESULTS OF GEOCHEMICAL CHARACTERIZATION

This section discusses the key results of the geochemical characterization with respect to the anticipated short and long-term environmental behaviour of Mine Rock, sub-economic mineralized rock, ore, and tailings at the NICO Project.

7.1 Mine Rock, Sub-Economic Mineralized Mine Rock and Ore

- Several trace metals occurred at elevated concentrations in the solid phase, including metals associated with metamorphic alteration and mineralization such as arsenic, bismuth, cobalt, and copper. Arsenic and cobalt are hosted by arsenopyrite and cobaltite, respectively. Bismuth occurs as native bismuth and bismuthinite. Copper is hosted by chalcopyrite. Geological description of the ore body and the results of mineralogical analysis indicate the presence of pyrite and pyrrhotite in site lithologies.
  - Statistical evaluation of the results of solid phase analysis indicated that arsenic and cobalt are strongly associated with sulphide minerals. Solid phase concentrations of selenium correlate strongly with bismuth.
- The results of ABA testing, NAG testing, and kinetic testing all indicate that samples of Mine Rock, sub-economic mineralized rock and ore containing greater than 0.3% sulphide-sulphur have a potential for acid generation:
  - The amount of rock that this represents varies by lithology and degree of mineralization. Overall, approximately 10% of the Mine Rock samples in the geochemical dataset contained greater than 0.3% sulphide-sulphur.
  - Approximately 45% of sub-economic mineralized rock samples contained greater than 0.3% sulphide-sulphur.

  - Approximately 76% of the ore samples contained greater than 0.3% sulphide-sulphur.

- The results of laboratory scale humidity cell tests and short-term leach tests indicate that metal leaching could occur from Mine Rock, sub-economic mineralized rock and ore in both neutral and acidic conditions:
  - Metals including aluminum, arsenic, cobalt, copper, cadmium, iron, antimony, lead, selenium, uranium, and zinc leached at concentrations in excess of the reference criteria in neutral pH, short-term leachates from Mine Rock, sub-economic mineralized rock and ore.
  - NAG test leachate analysis indicated that several parameters could mobilize from Mine Rock, sub-economic mineralized rock and ore should oxidizing, acid generating conditions be achieved, including sulphate, aluminum, arsenic, cadmium, cobalt, copper, iron, molybdenum, antimony, selenium, uranium, and zinc.
- Field cell tests were constructed using samples of ROM sub-economic mineralized Mine Rock and ROM ore. Leachates collected during the first year of monitoring reported concentrations of arsenic and selenium in excess of the reference criteria, indicating that arsenic and selenium are capable of leaching from sub-economic mineralized rock and ore in site conditions. Field cell monitoring is ongoing.
- Field cell leachates also contained elevated concentrations of nitrate and nitrite, the products of dissolution of blasting residuals present in the ROM rock.

7.2 Tailings

- Solid phase analysis of tailings samples indicated that concentrations of several metals occur at concentrations in excess of average crustal abundances. Elevated concentrations of arsenic, bismuth, antimony and selenium were measured in all tailings samples.
- Bulk rougher, bulk cleaner and blended tailings samples consist primarily of silicate minerals (mainly biotite and actinolite). Magnetite was detected in minor quantities in all bulk tailings samples. Mineralogical analysis of tailings identified no sulphide minerals: sulphur analysis indicated that the sulphide-sulphur content ranged from 0.02 to 0.31 % in tailings samples.
- Tailings samples contained relatively low NP in the form of calcite, which occurred in minor concentrations in all samples. The results of ABA, NAG testing, and kinetic testing indicate that tailings are unlikely to generate acidity.
- The solid phase composition of tailings is consistent with the results of trace metal analysis of samples of ore collected from ROM stockpiles. Although no sulphide minerals were detected in tailings samples, mineralogical analysis identified the measurable concentrations of the mineral claudetite, a water-soluble arsenic oxide mineral.
- The results of short term leach tests, laboratory scale humidity cell tests and field scale testing indicate that several metals may require further evaluation within the context of mine waste management; however, the primary metals with potential for leaching are arsenic and selenium.
- Aluminum, arsenic, cobalt, iron, antimony and selenium concentrations were elevated in weakly short-term leach tests. Aluminum, arsenic, cobalt, and antimony were mobile in oxidizing short-term leach tests.

Long-term humidity cell tests indicate that after the initial flushing of the samples, the primary metals leaching over a longer-term are arsenic and selenium.

- Decant water and pilot plant process water from the tailings samples was analyzed in order to provide an indication of the possible composition of water to be discharged to the tailings facility. Dissolved concentrations of arsenic, selenium and uranium were elevated in decant water, and molybdenum and selenium in process water. Nitrate and nitrite were also detected in decant water from the bulk cleaner tailings and from NICO field test blend.

8.0 CONCLUSIONS

The key conclusions of the geochemistry baseline program described in this document are as follows:

Acid Generation Potential

- Based on the samples tested in the geochemical dataset, a relatively small amount of Mine Rock has a potential to generate acidity (10%), a Mine Rock management plan and operational monitoring program has been prepared to minimize the potential for acid generation from the Mine Rock used for the purpose of construction.
- Sub-economic mineralized rock (i.e., sub-economic ore) has a greater potential for acid generation (45% of the samples tested contained greater than 0.3% sulphide-sulphur). Appropriate storage and handling of this material will be required to prevent release of potential acidity that could be produced in the long-term.
- Ore has some potential for acid generation; however, ore will be stored in temporary stockpiles prior to processing. No ore will remain on-site in the long-term. Temporary stockpile areas should be monitored for short-term acid generation.
- The results of static and kinetic testing indicate that tailings samples are unlikely to generate acidity.

Metal Leaching

- The results of geochemical characterization indicate that several metals will require assessment within the context of the tailings and Mine Rock management plan for the NICO Project. Key metals that will require assessment include arsenic and selenium.
  - Based on the results of solid phase analysis, the likely source of elevated arsenic in laboratory leachates is the oxidation of sulphide minerals.
  - Selenium most likely leaches from bismuth minerals associated with ore mineralization.
- Leach testing of all samples show that there is potential for the release of many metals at concentration in excess of the SSWQO.

In addition to metal leaching, possible release of TSS, major ions (such as nitrate and ammonia, chloride, and overall TDS) due to mine development (i.e. mine dewatering, explosives use) will also require evaluation within the context of site discharge. Appropriate mitigation strategies will be required.

Mine planning, project design, and mitigation are required to address the short and long term geochemical stability of Mine Rock, sub-economic mineralized rock ore and tailings at the NICO Project. Mine Rock and

tailings management strategies will require iterative review and refinement during ongoing operations as operational monitoring data becomes available.

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APPENDIX I

Sample Descriptions

Appendix I-1

List of Geochemical Characterization Samples - Exploration Drill Core

NICO Project, Fortune Minerals Limited

Sample Date[1]	Sample Description	Golder Sample Number	Hole	Cross Section	Depth From		To	Block Model Code[2]	Waste Rock / Ore[3]
Jul-04	Breccia	100855	03257	16+50W	47	-	49	300	WASTE
Jul-04	Breccia	100861	03258	16+50W	17	-	26	300	WASTE
Jul-04	Breccia	100874	03259	16+50W	54	-	61	400	WASTE
Jul-04	Breccia	100902	00249	22+00W	4	-	20		WASTE
Jul-04	Breccia	100916	98151	22+00w	13	-	20	300	WASTE
Jul-04	Breccia	100917	98151	22+00w	20	-	28	300	WASTE
Jul-04	Breccia	100925	00233	23+00w	0	-	9	300	WASTE
Jul-04	Breccia	100934	00252	23+00W	27	-	33	400	WASTE
Jul-04	Breccia	100945	03264	17+50W	46	-	53	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100889	00220	17+50W	25	-	32	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100890	00220	17+50W	32	-	50		
Jul-04	Black Rock Schist + Magnetite	100994	00230	21+50W	68	-	73	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100995	00230	21+50W	150	-	170		ORE
Jul-04	Black Rock Schist ± Magnetite	100802	00231	21+50W	73	-	83	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100803	00231	21+50W	83	-	94	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100927	00233	23+00w	45	-	55	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100928	00233	23+00w	58	-	67	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100930	00233	23+00w	111	-	114	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100938	00234	23+00W	1.5	-	9	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100939	00234	23+00W	61	-	77		
Jul-04	Black Rock Schist ± Magnetite	100805	00236	24+00W	38	-	48	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100806	00236	24+00W	48	-	60	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100998	00241	22+00W	91	-	104	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100905	00249	22+00W	62	-	72	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100907	00249	22+00W	82	-	90	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100935	00252	23+00W	97	-	107	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100936	00252	23+00W	107	-	127		
Jul-04	Black Rock Schist + Magnetite	100937	00252	23+00W	184	-	193	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100866	03258	16+50W	136	-	138	500	WASTE
Jul-04	Black Rock Schist + Magnetite	100875	03259	16+50W	96	-	111	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100812	03265	21+00W	145	-	155	500	WASTE
Jul-04	Black Rock Schist ± Magnetite	100965	03267	25+00W	2	-	10	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100966	03267	25+00W	10	-	18	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100967	03270	25+00W	30	-	39	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100968	03270	25+00W	39	-	47	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100969	03270	25+00W	91	-	100	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100976	96011	24+00W	131	-	145	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100977	96011	24+00W	145	-	160	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100978	96011	24+00W	160	-	170	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100979	96011	24+00W	270	-	290		
Jul-04	Black Rock Schist + Magnetite	100909	96016	22+00W	27	-	42	400	WASTE

Created by: KAS

Checked: KJD

Appendix I-1

List of Geochemical Characterization Samples - Exploration Drill Core

NICO Project, Fortune Minerals Limited

Sample Date[1]	Sample Description	Golder Sample Number	Hole	Cross Section	Depth From		To	Block Model Code[2]	Waste Rock / Ore[3]
Jul-04	Black Rock Schist + Magnetite	100911	96016	22+00W	138	-	158		
Jul-04	Black Rock Schist + Magnetite	100912	96016	22+00W	158	-	190		
Jul-04	Black Rock Schist + Magnetite	100949	96023	24+00W	17	-	30	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100950	96023	24+00W	30	-	46		
Jul-04	Black Rock Schist + Magnetite	100983	97035	21+00W	57	-	68	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100989	97036	21+00W	157	-	165	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100990	97036	21+00W	216	-	225	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100991	97036	21+00W	225	-	230	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100970	97060	25+00W	11	-	30		
Jul-04	Black Rock Schist ± Magnetite	100900	97072	22+00W	20	-	37		
Jul-04	Black Rock Schist ± Magnetite	100901	97072	22+00W	55	-	80		
Jul-04	Black Rock Schist ± Magnetite	100947	97102	24+00W	57	-	77		
Jul-04	Black Rock Schist ± Magnetite	100948	97102	24+00W	67	-	78	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100961	98147	25+00W	3	-	12	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100962	98147	25+00W	12	-	21	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100963	98147	25+00W	46	-	61	15	ORE
Jul-04	Black Rock Schist + Magnetite	100923	98150	22+00w	45	-	55	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100924	98150	22+00w	55	-	65	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100918	98151	22+00w	31	-	41	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100919	98151	22+00w	41	-	57		
Jul-04	Black Rock Schist ± Magnetite	100920	98151	22+00w	74	-	79	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100953	98197	17+50W	45	-	50	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100884	98198	17+50W	20	-	30	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100885	98198	17+50W	30	-	41	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100887	98198	17+50W	95	-	110	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100888	98198	17+50W	110	-	130		
Jul-04	Black Rock Schist ± Magnetite	100815	98208	24+00W	0	-	5	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100817	98208	24+00W	76	-	86	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100818	98208	24+00W	86	-	100	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100958	98209	25+00W	47	-	60	400	WASTE
Jul-04	Black Rock Schist ± Magnetite	100959	98209	25+00W	60	-	70	400	WASTE
Jul-04	Black Rock Schist + Magnetite	100814	98419	25+00W	0	-	6		
Jul-04	Fault Zone	100868	03258	16+50W	77	-	83	400	WASTE
Jul-04	Feldspar Porphyry	100891	00220	17+50W	110	-	113	200	WASTE
Jul-04	Feldspar Porphyry	100931	00233	23+00w	115	-	121	200	WASTE
Jul-04	Feldspar Porphyry	100904	00249	22+00W	31	-	36	200	WASTE
Jul-04	Feldspar Porphyry	100908	00249	22+00W	131	-	136	200	WASTE
Jul-04	Feldspar Porphyry	100856	03257	16+50W	56	-	65	300	WASTE
Jul-04	Feldspar Porphyry	100857	03257	16+50W	65	-	79	100	WASTE
Jul-04	Feldspar Porphyry	100858	03257	16+50W	105	-	109	200	WASTE
Jul-04	Feldspar Porphyry	100859	03257	16+50W	110	-	114	500	WASTE

Appendix I-1

List of Geochemical Characterization Samples - Exploration Drill Core

NICO Project, Fortune Minerals Limited

Sample Date[1]	Sample Description	Golder Sample Number	Hole	Cross Section	Depth From		To	Block Model Code[2]	Waste Rock / Ore[3]
Jul-04	Feldspar Porphyry	100867	03258	16+50W	138	-	141	200	WASTE
Jul-04	Feldspar Porphyry	100869	03259	16+50W	3	-	11	200	WASTE
Jul-04	Feldspar Porphyry	100870	03259	16+50W	11	-	22	200	WASTE
Jul-04	Feldspar Porphyry	100876	03259	16+50W	111	-	113	200	WASTE
Jul-04	Feldspar Porphyry	100810	03265	21+00W	69	-	79	200	WASTE
Jul-04	Feldspar Porphyry	100811	03265	21+00W	79	-	89	200	WASTE
Aug-08	Feldspar Porphyry	NICO-08-013	03282		117.04	-	126.2	100	WASTE
Jul-04	Feldspar Porphyry	100913	96016	22+00W	205	-	209	200	WASTE
Jul-04	Feldspar Porphyry	100988	97036	21+00W	151	-	157	400	WASTE
Jul-04	Feldspar Porphyry	100921	98151	22+00w	92	-	105	200	WASTE
Jul-04	Feldspar Porphyry	100892	98152	22+00W	0	-	15	200	WASTE
Jul-04	Feldspar Porphyry	100893	98152	22+00W	15	-	30	200	WASTE
Jul-04	Feldspar Porphyry	100894	98152	22+00W	30	-	45	200	WASTE
Jul-04	Feldspar Porphyry	100895	98152	22+00W	45	-	60	200	WASTE
Jul-04	Feldspar Porphyry	100896	98152	22+00W	96	-	106	200	WASTE
Jul-04	Feldspar Porphyry	100954	98197	17+50W	50	-	60	200	WASTE
Jul-04	Feldspar Porphyry	100955	98197	17+50W	60	-	70	200	WASTE
Jul-04	Feldspar Porphyry	100956	98197	17+50W	70	-	80	200	WASTE
2004	Fortune Minerals Preliminary Samples	Quartz Feldspar Porphyry	03-275	20+00W	86 104	- -	103 114		
2004	Fortune Minerals Preliminary Samples	Feldspar Porphyry	03-376 (03-27	20+00W	3	-	106		
Jul-04	Rhyolite	100992	00230	21+50W	1	-	17		
Jul-04	Rhyolite	100932	00252	23+00W	3	-	13	300	WASTE
Jul-04	Rhyolite	100933	00252	23+00W	13	-	26	300	WASTE
Jul-04	Rhyolite	100852	03257	16+50W	13	-	23	300	WASTE
Jul-04	Rhyolite	100853	03257	16+50W	23	-	33	20	ORE
Jul-04	Rhyolite	100854	03257	16+50W	33	-	43	20	ORE
Jul-04	Rhyolite	100860	03258	16+50W	3	-	16	300	WASTE
Jul-04	Rhyolite	100862	03258	16+50W	27	-	35	20	ORE
Jul-04	Rhyolite	100863	03258	16+50W	35	-	50	300	WASTE
Jul-04	Rhyolite	100864	03258	16+50W	50	-	65	300	WASTE
Jul-04	Rhyolite	100865	03258	16+50W	65	-	77	300	WASTE
Jul-04	Rhyolite	100871	03259	16+50W	22	-	33	300	WASTE
Jul-04	Rhyolite	100872	03259	16+50W	33	-	43	300	WASTE
Jul-04	Rhyolite	100873	03259	16+50W	44	-	54	300	WASTE
Jul-04	Rhyolite	100943	03264	17+50W	27	-	37	300	WASTE
Jul-04	Rhyolite	100944	03264	17+50W	37	-	45	300	WASTE
Aug-08	Rhyolite	NICO-08-011	03282		4.3	-	13.4	300	WASTE
Aug-08	Rhyolite	NICO-08-012	03282		31.7	-	41.3	300	WASTE
Jul-04	Rhyolite	100971	96011	24+00W	3	-	15	300	WASTE

Created by: KAS

Checked: KJD

Appendix I-1

List of Geochemical Characterization Samples - Exploration Drill Core

NICO Project, Fortune Minerals Limited

Sample Date[1]	Sample Description	Golder Sample Number	Hole	Cross Section	Depth From		To	Block Model Code[2]	Waste Rock / Ore[3]
Jul-04	Rhyolite	100972	96011	24+00W	15	-	30	300	WASTE
Jul-04	Rhyolite	100973	96011	24+00W	30	-	45	300	WASTE
Jul-04	Rhyolite	100974	96011	24+00W	45	-	60	300	WASTE
Jul-04	Rhyolite	100975	96011	24+00W	60	-	85		
Jul-04	Rhyolite	100980	97035	21+00W	0	-	10	300	WASTE
Jul-04	Rhyolite	100981	97035	21+00W	10	-	20	35	ORE
Jul-04	Rhyolite	100982	97035	21+00W	20	-	29	30	ORE
Jul-04	Rhyolite	100985	97036	21+00W	0	-	10	300	WASTE
Jul-04	Rhyolite	100986	97036	21+00W	10	-	26		
Jul-04	Rhyolite	100952	98197	17+50W	0	-	15	300	WASTE
Jul-04	Rhyolite	100951	98197	17+50W	15	-	30	300	WASTE
Jul-04	Rhyolite	100878	00246S	17+50W	1	-	10	300	WASTE
Jul-04	Rhyolite	100879	00246S	17+50W	10	-	20	300	WASTE
Jul-04	Rhyolite	100880	00246S	17+50W	20	-	30	300	WASTE
2004	Fortune Minerals Preliminary Samples	Rhyolite	03-272	21+00W	0.6	-	18		
Jul-04	Siltstone	100804	00231	21+50W	235	-	250	500	WASTE
Jul-04	Siltstone	100929	00233	23+00w	105.5	-	110	400	WASTE
Jul-04	Siltstone	100940	00234	23+00W	132	-	138	500	WASTE
Jul-04	Siltstone	101000	00241	22+00W	249	-	256	500	WASTE
Jul-04	Siltstone	100877	03259	16+50W	157	-	165	500	WASTE
Jul-04	Siltstone	100946	03264	17+50W	98	-	101.6	500	WASTE
Jul-04	Siltstone	100914	96016	22+00W	209	-	215	500	WASTE
Jul-04	Siltstone	100984	97035	21+00W	267	-	270	500	WASTE
Jul-04	Siltstone	100964	98147	25+00W	72	-	81	500	WASTE
Jul-04	Siltstone	100922	98151	22+00w	110.5	-	114	500	WASTE
Jul-04	Siltstone	100897	98152	22+00W	108	-	112	500	WASTE
Jul-04	Siltstone	100957	98197	17+50W	130	-	140	400	WASTE
Jul-04	Siltstone	100819	98208	24+00W	148	-	152	500	WASTE
Jul-04	Siltstone	100960	98209	25+00W	126	-	131	500	WASTE
2004	Fortune Minerals Preliminary Samples	Siltstone 1	98-159	18+50W	98	-	173		
2004	Fortune Minerals Preliminary Samples	Siltstone 2	98-170	18+50W	118 194	- -	156 224		
Jul-04	Sub-Arkosic Wacke	100993	00230	21+50W	58	-	68	400	WASTE
Jul-04	Sub-Arkosic Wacke	100801	00231	21+50W	1	-	15	400	WASTE
Jul-04	Sub-Arkosic Wacke	100926	00233	23+00w	9	-	16	300	WASTE
Jul-04	Sub-Arkosic Wacke	100996	00241	22+00W	0	-	10	400	WASTE
Jul-04	Sub-Arkosic Wacke	100997	00241	22+00W	10	-	20	400	WASTE
Jul-04	Sub-Arkosic Wacke	100999	00241	22+00W	105	-	115	400	WASTE
Jul-04	Sub-Arkosic Wacke	100903	00249	22+00W	20	-	27	400	WASTE

Created by: KAS

Checked: KJD

Appendix I-1

List of Geochemical Characterization Samples - Exploration Drill Core

NICO Project, Fortune Minerals Limited

Sample Date[1]	Sample Description	Golder Sample Number	Hole	Cross Section	Depth From		To	Block Model Code[2]	Waste Rock / Ore[3]
Jul-04	Sub-Arkosic Wacke	100906	00249	22+00W	71	-	82	400	WASTE
Jul-04	Sub-Arkosic Wacke	100851	03257	16+50W	10.9	-	13	300	WASTE
Jul-04	Sub-Arkosic Wacke	100941	03264	17+50W	1	-	11	400	WASTE
Jul-04	Sub-Arkosic Wacke	100942	03264	17+50W	11	-	22	400	WASTE
Jul-04	Sub-Arkosic Wacke	100807	03265	21+00W	1	-	10	400	WASTE
Jul-04	Sub-Arkosic Wacke	100808	03265	21+00W	10	-	20	400	WASTE
Jul-04	Sub-Arkosic Wacke	100809	03265	21+00W	20	-	31	400	WASTE
Jul-04	Sub-Arkosic Wacke	100813	03265	21+00W	157	-	160	500	WASTE
Jul-04	Sub-Arkosic Wacke	100910	96016	22+00W	44	-	59	400	WASTE
Jul-04	Sub-Arkosic Wacke	100987	97036	21+00W	63	-	72	400	WASTE
Jul-04	Sub-Arkosic Wacke	100899	97072	22+00W	0	-	10	300	WASTE
Jul-04	Sub-Arkosic Wacke	100915	98151	22+00w	1	-	10	300	WASTE
Jul-04	Sub-Arkosic Wacke	100898	98152	22+00W	113	-	119	500	WASTE
Jul-04	Sub-Arkosic Wacke	100882	98198	17+50W	4	-	10	400	WASTE
Jul-04	Sub-Arkosic Wacke	100883	98198	17+50W	10	-	20	400	WASTE
Jul-04	Sub-Arkosic Wacke	100886	98198	17+50W	66	-	72	20	ORE
Jul-04	Sub-Arkosic Wacke	100816	98208	24+00W	5	-	15	400	WASTE
Jul-04	Sub-Arkosic Wacke	100881	00246S	17+50W	31	-	37	400	WASTE
2004	Fortune Minerals Preliminary Samples	Upper Ore Zone	03-272	21+00W	21 83	- -	81 96		
2004	Fortune Minerals Preliminary Samples	Middle Ore Zone	03-275	20+00W	37	-	74		
2004	Fortune Minerals Preliminary Samples	Lower Ore Zone	03-275	20+00W	120	-	157		

Notes:

1. Date of sample collection.
2. Block model code according to P&E mine block model.
3. Classification of ore according to P&E mine block model.

Appendix I-2

List of Geochemical Characterization Samples - Outcrop Samples from the NICO Project Site

NICO Project, Fortune Minerals Limited

Date Sampled	Location	Number Golder Sample	Lithology	Sampled By
Jul-04	Portal	100821	PORTAL	CMC
Jul-04	Portal	100822	PORTAL	CMC
Jul-04	Portal	100823	PORTAL	CMC
Jul-04	Portal	100824	PORTAL	CMC
Aug-08	Outcrop	NICO-08-001	Rhyolite	MR
Aug-08	Outcrop	NICO-08-002	Rhyolite	MR
Aug-08	Outcrop	NICO-08-003	Rhyolite	MR
Aug-08	Outcrop	NICO-08-004	Rhyolite	MR
Aug-08	Outcrop	NICO-08-005	Rhyolite	MR
Aug-08	Outcrop	NICO-08-006	Rhyolite	MR
Aug-08	Outcrop	NICO-08-007	Feldspar porphyry	MR
Aug-08	Outcrop	NICO-08-008	Siltstone	MR
Aug-08	Outcrop	NICO-08-009	Siltstone	MR
Aug-08	Outcrop	NICO-08-010	Feldspar porphyry	MR

Appendix I-3

Description of Samples Collected from Bulk Stockpiles in 2008
NICO Project, Fortune Minerals Limited

Date Sampled	Sample ID	Pile ID	Depth	Mineralized Waste / Ore	Description	Sampled By
Aug-08	Aug 18 NS-1	Aug 18 NS	0 - 1m	ore	Wet to moist, dark grey to black gravely sand with some boulders up to 30 cm; BRS±mt; visible sulfides include massive arsenopyrite and aggregates of arsenopyrite, pyrite and chalcopyrite in veins and stringers; no visible sulfide alteration.	KAS / MG
Aug-08	Aug 18 NS-2	Aug 18 NS	1 - 2m	ore	Dark grey green, gravely sand with some cobbles and boulders up to 30 to 60 cm; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Aug 18 NS-3	Aug 18 NS	4m	ore	Dark grey, gravely sand with some cobbles and boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Aug 20 NS-1	Aug 20 NS	0 m (Surface)	ore	Dark grey, bouldery, gravely sand; BRS±mt with up to 10% pink FP; visible sulphide include blebby, mg arsenopyrite; aggregates of pyrite, chalcopyrite and arsenopyrite; no visible sulfide alteration; rare visible carbonates	KAS / MG
Aug-08	Aug 20 NS-2	Aug 20 NS	0 - 1m	ore	Dark green grey gravely sand with some boulders up to 40 cm; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Aug 20 NS-3	Aug 20 NS	1 - 2m	ore	Dark green grey, gravely sand with cobbles and boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Aug 20 NS-4	Aug 20 NS	4m	ore	Dark grey green, gravely sand with some boulders; BRS±mt; up to 5 to 10% FP; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Aug 21 NS-1	Aug 21 NS	0 m (Surface)	ore	Dark grey, sandy gravel with angular cobbles and boulders; BRS±mt; up to 10% FP; sulfides in boulders include massive aggregates of chalcopyrite, pyrite and arsenopyrite; no visible sulfide alteration; no visible carbonates.	KAS / MG
Aug-08	Aug 21 NS-2	Aug 21 NS	0 - 1m	ore	Dark grey, gravely sand with some boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates.	KAS / MG
Aug-08	Aug 21 NS-3	Aug 21 NS	2 - 3m	ore	Dark grey, gravely sand with some cobbles and boulders up to 30 cm; BRS±mt; difficult to ascertain visible sulfides	KAS / MG
Aug-08	Aug 21 NS-4	Aug 21 NS	4m	ore	Dark grey, gravely sand with some cobbles and boulders; BRS±mt with rare FP; difficult to ascertain visible sulfides	KAS / MG
Aug-08	Aug 23 DS-1	Aug 23 DS	0 m (Surface)	ore	Dark grey, gravely bouldery sand; BRS±mt with up to 20% pink FP (coarse sand); visible sulphides include cg blebby arsenopyrite and chalcopyrite / pyrite / arsenopyrite aggregates; note sulfides in veins and stringers; no visible sulfide alteration; no visible carbonate	KAS / MG
Aug-08	Aug 23 DS-2	Aug 23 DS	0 - 1m	ore	Dark grey, gravely sand with some boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates.	KAS / MG
Aug-08	Aug 23 DS-3	Aug 23 DS	1 - 3m	ore	Dark grey, gravely sand with some boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates.	KAS / MG
Aug-08	Aug 23 DS-4	Aug 23 DS	4m	ore	Dark grey, gravely sand with some boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates.	KAS / MG
Aug-08	Aug 24 DS-1	Aug 24 DS	0 - 1m	ore	Dark grey, gravely sand with trace boulders up to 30 to 60 cm; BRS±mt; difficult to as visible sulfides, but note presence of arsenopyrite in fines.	KAS / MG
Aug-08	Aug 24 DS-2	Aug 24 DS	1 - 3m	ore	Dark grey, gravely sand with trace boulders and cobbles; BRS±mt; rare visible sulfides in sand size fraction include arsenopyrite and pyrite, chalcopyrite; most fragments difficult to ascertain visible sulfides	KAS / MG
Aug-08	Aug 24 DS-3	Aug 24 DS	4m	ore	Dark grey, gravely sand with trace boulders and cobbles; BRS±mt; rare visible sulfides; difficult to ascertain visible sulfides and carbonates, but note arsenopyrite in fines.	KAS / MG
Aug-08	Aug 27 DS-1	Aug 27 DS	0 m (Surface)	ore	Wet, dark grey boulders with some sand and gravel; boulders up to 30 cm; BRS±mt; visible sulfides include up to 7 to 10% massive aggregates of arsenopyrite, pyrite and chalcopyrite; no visible alteration; note that material is very coarse and very few fines were available to sample	KAS / MG
Aug-08	Aug 27 DS-2	Aug 27 DS	0 - 1m	ore	Moist to dry, dark grey gravely sand with some boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates.	KAS / MG
Aug-08	Aug 27 DS-3	Aug 27 DS	2 - 3m	ore	Moist, dark grey gravely sand with some boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Aug 27 DS-4	Aug 27 DS	4m	ore	Moist, dark grey gravely sand with some boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	FC-5	Aug 28 DS	N/A	ore	Wet, dark grey green gravelly sand with minor cobbles up to 10 to 20 cm in diameter; BRS±mt dominant rock type noted during sample collection; visible sulphides noted in fines	KAS / MG
Aug-08	Aug 28 DS-1	Aug 28 DS	0 - 1m	ore	Moist to dry, dark grey gravely, bouldery sand; BRS±mt; boulders have abundant chalcopyrite, arsenopyrite and pyrite; arsenopyrite noted in fines; no visible carbonates	KAS / MG
Aug-08	Aug 28 DS-2	Aug 28 DS	1 - 2m	ore	Moist, dark grey gravely sand with some cobbles and boulders; BRS±mt; boulders contain massive aggregates of arsenopyrite, pyrite and chalcopyrite; no visible oxidation of sulfides; abundant arsenopyrite in fines.	KAS / MG
Aug-08	Aug 28 DS-3	Aug 28 DS	2 - 3m	ore	Moist, dark grey to black gravely sand with some boulders; BRSmt; sulfides include arsenopyrite, pyrite and chalcopyrite in boulders; abundant arsenopyrite in fines; no visible carbonates.	KAS / MG
Aug-08	Aug 28 DS-4	Aug 28 DS	4m	ore	Moist, dark grey, gravely sand with cobbles and boulders; BRS±mt; visible sulfides include arsenopyrite, chalcopyrite and pyrite; abundant arsenopyrite in fines; no visible carbonate	KAS / MG
Aug-08	FC-3	Mar 10 NS	N/A	waste	Wet, dark grey green, gravelly sand with minor cobbles up to 10 to 20 cm in diameter; BRS±mt dominant rock type noted during sample collection; sulphides noted in fines	KAS / MG
Aug-08	Mar 10 NS-1	Mar 10 NS	0 m (Surface)	waste	Dry, gravely sand with trace cobbles and minor boulders up to 30 cm; BRS±mt; visible sulfides include arsenopyrite, pyrite and chalcopyrite in fractures and in veins; arsenopyrite locally occurs as mg to cg blebs disseminated through rock; chalcopyrite is visibly tarnished; rare visible carbonates	KAS / MG
Aug-08	Mar 10 NS-2	Mar 10 NS	1 - 2m	waste	Moist, dark grey, gravely sand with minor boulders up to 30 cm; BRS±mt; visible sulphides include blebby arsenopyrite in discrete grains and fines; all other fragments difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Mar 10 NS-3	Mar 10 NS	2 - 3m	waste	Moist, dark grey, gravely sand with minor boulders up to 30 cm; BRS±mt; visible sulphides include blebby arsenopyrite and chalcopyrite in discrete grains and fines; all other fragments difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Mar 10 NS-4	Mar 10 NS	4m	waste	Moist, dark grey gravely sand with some boulders up to 30 cm; BRS±mt; visible sulphides include blebby arsenopyrite and pyrite; no visible alteration of sulphide; most fragments difficult to ascertain visible sulphides; note iron staining on rare rock fragments; fines from base of pile rich in FP	KAS / MG
Aug-08	Mar 6 NS-1	Mar 6 NS	0 m (Surface)	waste	Dark grey sandy gravel with cobbles and boulders up to 30 to 60 cm; BRS±mt; sulfides include arsenopyrite (mg to cg, blebby, disseminated through rock), occasional stringers and veins of arsenopyrite, pyrite and chalcopyrite; carbonates noted in fractures / bedding planes; exposed carbonates are friable, highly altered and weathered.	KAS / MG

Appendix I-3

Description of Samples Collected from Bulk Stockpiles in 2008
NICO Project, Fortune Minerals Limited

Date Sampled	Sample ID	Pile ID	Depth	Mineralized Waste / Ore	Description	Sampled By
Aug-08	Mar 6 NS-2	Mar 6 NS	0 - 1m	waste	Dark grey gravely sand with cobbles and boulders up to 60 cm; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Mar 6 NS-3	Mar 6 NS	1 - 2m	waste	Dark grey gravely sand with some cobbles; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Mar 6 NS-4	Mar 6 NS	4m	waste	Dark grey gravely sand with cobbles and boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	FC-4	Mar 8 NS	N/A	waste	Wet, dark grey green, gravelly sand with some cobbles up to 10 to 20 cm; dominant rock type noted during sample collection BRS±mt; visible very fine grained sulphides noted in fines	KAS / MG
Aug-08	Mar 8 NS-1	Mar 8 NS	0 m (Surface)	waste	Dark grey, gravely sand with some boulders and cobbles up to 30 cm; BRS±mt; dominant sulphide is arsenopyrite, which occurs as disseminated mg to cg blebs and rarely in massive stringers (4 to 5%); also note chalcopyrite and pyrite in blebs and aggregates; rare pink FP; no visible carbonates; note abundance of arsenopyrite in fines.	KAS / MG
Aug-08	Mar 8 NS-2	Mar 8 NS	0 - 1m	waste	Dark grey, gravely, bouldery sand; BRS±mt; visible sulphides in boulders include arsenopyrite, pyrite and chalcopyrite (massive and disseminated through rock); sulphides visible in fines; no visible carbonates	KAS / MG
Aug-08	Mar 8 NS-3	Mar 8 NS	1 - 2m	waste	Dark grey gravely sand with some cobbles and rare boulders; BRS±mt; difficult to ascertain visible sulfides and carbonate; note some visible arsenopyrite in fines.	KAS / MG
Aug-08	Mar 8 NS-4	Mar 8 NS	4m	waste	Dark grey gravely sand with trace boulders; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 10 NS-1	Oct 10 NS	0 m (Surface)	ore	Dry, dark grey to pink gravely sand with some boulders up to 30 cm and rare boulders up to 70 cm; dominantly BRS±mt with up to 20 to 30 % pink FP; BRS±mt is massive, dark green to grey, fine grained with blebby pyrite / chalcopyrite /arsenopyrite which occur in bands and stringers; chalcopyrite appears to be fractured and altered; carbonate on fracture surfaces is white and friable, highly weathered	KAS / MG
Aug-08	Oct 10 NS-2	Oct 10 NS	1 - 2m	ore	Moist, dark grey gravely sand with some boulders up to 30 cm to 1 m; BRS±mt with 10% FP; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 10 NS-3	Oct 10 NS	2 - 3m	ore	Moist, dark grey gravely sand with some boulders up to 20 to 80 cm; BRS±mt with 10 to 20% FP; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 10 NS-4	Oct 10 NS	3 - 4m	ore	Moist, dark grey gravely sand with some boulders up to 20 to 80 cm; BRS±mt with 10 to 30% FP; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 11 DS-1	Oct 11 DS	0 m (Surface)	ore	Dry, dark grey sandy gravel with up to 30% boulders 30 cm to 1 m; BRS±mt; visible sulphides include chalcopyrite, pyrite and arsenopyrite; chalcopyrite and pyrite noted to be tarnished and altered; sulphides occur as massive, blebby aggregates and bands; carbonate occurs in fracture coatings and bedding planes; carbonate coatings are highly weathered and friable; reddish brown coatings common on bedding planes and fractures.	KAS / MG
Aug-08	Oct 11 DS-2	Oct 11 DS	0 - 1m	ore	Dry to slightly moist, medium grey gravely sand with boulders up to 20 cm; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 11 DS-3	Oct 11 DS	1 - 2m	ore	Slightly moist, dark grey, gravely sand with cobbles and boulders up to 60 cm; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 11 DS-4	Oct 11 DS	4m	ore	Moist, dark grey, gravely sand with boulders up to 60 cm; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 12 DS-1	Oct 12 DS	0 m (Surface)	ore	Dry, dark green grey, gravely sand with some cobbles and boulders up to 60 cm in diameters; BRS±mt with rare fragments of pink FP; visible sulphides include aggregates of blebby arsenopyrite, pyrite, and chalcopyrite up to 10 cm long; chalcopyrite is visibly altered and tarnished; white carbonate noted in bedding planes; carbonate is friable, visibly weathered	KAS / MG
Aug-08	Oct 12 DS-2	Oct 12 DS	0 - 1m	ore	Dry to moist, dark green grey, gravely sand with trace silt and minor boulders up to 50 cm; note abundance of fines; BRS±mt with rare fragments FP; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 12 DS-3	Oct 12 DS	1 - 2m	ore	Moist, dark grey gravely sand with minor boulders up to 30 cm; BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 12 DS-4	Oct 12 DS	3 - 4m	ore	Moist, dark grey gravely sand with trace cobbles and some boulders 30 to 60 cm; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	FC-1	Oct 5 DS	N/A	waste	Wet, dark grey, gravelly sand with minor cobbles up to 20 cm diameter; FP dominant rock type observed during sample collection, with up to 30% black BRS±mt	KAS / MG
Aug-08	Oct 5 DS-1	Oct 5 DS	0 m (Surface)	waste	Dry, light grey sandy gravely with some boulder up to 40 to 60 cm; ~ 80% pink to grey FP with ~ 20% BRS±mt; no visible sulphides or visible carbonates in FP; rare visible sulphides in BRS±mt	KAS / MG
Aug-08	Oct 5 DS-2	Oct 5 DS	0 - 2m	waste	Moist, dark purplish grey gravely sand with minor boulders; dominantly FP with minor BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 5 DS-3	Oct 5 DS	2 - 4m	waste	Moist, dark grey gravely sand with some boulders up to 60 cm; localized evidence of patchy iron staining on dried boulders; dominantly FP with rare BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 9 DS-1	Oct 9 DS	0 - 1m	ore	Dry, dark grey, gravely sand with trace boulders up to 50 cm, BRS±mt with grace fragments FP; visible sulphides include chalcopyrite, chalcopyrite and arsenopyrite; chalcopyrite is tarnished and weathered; carbonates identified in bands / on fracture coatings, carbonates are friable and weathered; occasional iron staining noted on fractures	KAS / MG
Aug-08	Oct 9 DS-2	Oct 9 DS	2 - 3m	ore	Moist, dark grey, gravely sand with cobbles and boulders up to 60 cm; BRS±mt with trace FP; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 9 DS-3	Oct 9 DS	4m	ore	Moist, dark grey, gravely sand with cobbles and rare boulders; BRS±mt with trace FP; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	FC-2	Oct 9 NS	N/A	waste	Wet, dark grey green, gravelly sand with minor cobbles up to 10 to 20 cm diameter; BRS±mt dominant rock type noted during sample collection	KAS / MG
Aug-08	Oct 9 NS-1	Oct 9 NS	0 m (Surface)	waste	Dry, dark grey to green, gravely sand with some boulders up to 30 to 60 cm in diameter; BRS±mt; note iron staining on some fracture surfaces; visible sulphides include pyrite, chalcopyrite and arsenopyrite; sulphides are visibly altered (tarnished); visibly altered white, friable carbonates noted on fracture planes	KAS / MG
Aug-08	Oct 9 NS-2	Oct 9 NS	0 - 1m	waste	Dry to slightly moist; dark grey; gravely sand with some boulders up to 40 cm; dominantly BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG
Aug-08	Oct 9 NS-3	Oct 9 NS	2 - 4m	waste	Dry to slightly moist; dark grey; gravely sand with rare boulders up to 40 cm; dominantly BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG

Created by: KAS
Checked: KJD

Appendix I-3
Description of Samples Collected from Bulk Stockpiles in 2008
NICO Project, Fortune Minerals Limited

Date Sampled	Sample ID	Pile ID	Depth	Mineralized Waste / Ore	Description	Sampled By
Aug-08	Oct 9 NS-4	Oct 9 NS	4m	waste	Dry to slightly moist; dark grey; gravely sand with minor boulders up to 40 cm; dominantly BRS±mt; difficult to ascertain visible sulfides and carbonates	KAS / MG

Appendix I-4

Description of ROM Rock Samples used to Construct Field Cells

NICO Project, Fortune Minerals Ltd.

Field Cell ID	Sample ID	Sample Description	Sample Mass (kg)	Date of Installation
FC-0	Blank	Silica sand blank	45	24-Aug-08
FC-1	Feldspar Porphyry with some Black Rock Schist (Oct 5 DS)	Wet, dark grey, gravelly sand with minor cobbles up to 20 cm diameter; FP dominant rock type observed during sample collection, with up to 30% black BRS±mt	219	24-Aug-08
FC-2	Black Rock Schist (Oct 9 NS)	Wet, dark grey green, gravelly sand with minor cobbles up to 10 to 20 cm diameter; BRS±mt dominant rock type noted during sample collection	219	24-Aug-08
FC-3	Black Rock Schist (Mar 10 NS)	Wet, dark grey green, gravelly sand with minor cobbles up to 10 to 20 cm in diameter; BRS±mt dominant rock type noted during sample collection; sulphides noted in fines	220	24-Aug-08
FC-4	Black Rock Schist (Mar 8 NS)	Wet, dark grey green, gravelly sand with some cobbles up to 10 to 20 cm; dominant rock type noted during sample collection BRS±mt; visible very fine grained sulphides noted in fines	225	24-Aug-08
FC-5	Black Rock Schist / Low Grade Ore (Aug 28 DS)	Wet, dark grey green gravelly sand with minor cobbles up to 10 to 20 cm in diameter; BRS±mt dominant rock type noted during sample collection; visible sulphides noted in fines	224	24-Aug-08
FC-7,8,9	Bulk Rougher Tailings	Dark green grey, fine grained, saturated tailings.	40, 100 and 60 kg, respectively	29-Apr-10

Appendix I-5

Description of Tailings Samples Submitted for Geochemical Characterization
NICO Project, Fortune Minerals Limited

Sample	Stream	Primary Unit Operation	Intermediate Unit Operation
Tailings			
Bulk Rougher Tailings	Bulk Rougher Tailings	Bulk Rougher Tailings	Cyclone Scavenge
Bulk Cleaner Tailings	Bulk Cleaner Tailings	Bulk Cleaner Tailings	Generally - cyanidation and cyanide destruction
Blended Samples			
PP#14	Represents combined flotation tailings for average ore grade after 2 years of mine life		

Note: Tailings generated at SGS Lakefield under the direction of Fortune.

APPENDIX II

Detailed Methods of Sample Collection and Sample Analysis

1.0 INTRODUCTION

This appendix provides an overview of the methods of sample selection and analysis that form the basis of the geochemical characterization program at the NICO Project. The geochemical characterization program has progressed iteratively since 2004. Methods of sample collection evolved as new materials (i.e., drill core, ROM rock and tailings) became available for sampling.

2.0 SAMPLE SELECTION AND COLLECTION

Sample selection is discussed according to the 3 main periods of sample collection and evaluation: 2004 Mine rock and ore sample program, 2008 Mine rock and ore sample program, and 2008 tailings sample program.

2.1 2004 Mine rock and Ore Sample Program

Screening Level Drill Core Samples - 2004

Fortune provided 8 samples of exploration drill core of the various Mine rock and ore lithologies present at the NICO Project, which were submitted for screening level analysis. These samples were collected over intervals ranging from 10 to 103 metres (m). Most of these sample intervals were considered too large to sufficiently characterize rock types. Furthermore, these samples were generally collected proximal to mineralized areas of the deposit. A more comprehensive geochemical sampling program was required to characterize the range of characteristics of Mine rock.

Exploration Drill Core Samples - 2004

A comprehensive exploration drill core sampling program was initiated for the purpose of assessing the geochemical variability of the rock types encountered during exploration bulk sample mining at the NICO Project. The first phase of this program was a detailed review of geological drill core logs and cross sections (provided by Fortune). This sample campaign was performed early in the NICO Project (i.e., prior to the completion of the mine plan or the mine block model), therefore the relative proportion of each lithology present in the proposed outline of the Open Pit was determined based on the relative proportion of each rock type in the drill core logs.

Sample intervals were selected using the drill core logs proportions according to the relative proportion of each rock type. In total, 169 drill core sample intervals were selected for geochemical characterization. The sample selection process was designed to achieve a final selection that captured the spatial (lateral and vertical) distribution of each lithology. Drill core logs were assessed to ensure that the sample intervals captured the range of compositional variability of each rock type. Samples were selected over 5 to 10 m intervals (approximately), which was considered representative of a bench height or development width that could be expected to be mixed within a single blast.

Samples were collected after visual observation of each selected interval in the field, in consultation with a Fortune site geologist. This step was performed to ensure that the visual characteristics of the core (i.e., lithology, mineralogical composition and state of weathering) were adequately represented by the drill core log descriptions. Samples were collected only after the visual characteristics of the selected interval were confirmed. Each sample consisted of a composite of several sub-samples collected over the total sample interval: a 10 to 15 centimetres (cm) sample of core was collected for each meter of core in the specified interval. The sub-samples were approximately equal in weight and visually representative of the portion of core they represented. All sub-samples for a specified interval were packed into large plastic bags, resulting in a sample

weighing between 3 and 5 kilograms (kg). The sample bags were sealed, and labelled with a unique sample identifier, prior to shipment to the lab.

Outcrop Samples - 2004

Four samples of outcrop were collected from the vicinity of the mine portal. These samples were collected for the purpose of assessing the characteristics of rock encountered during the development of the underground ramp.

2.2 2008 Mine rock and Ore Sample Program

The 2008 sample program consisted of two components: collection of Mine Rock and ore samples from the bulk sample stockpiles and collection of outcrop and drill core samples.

Bulk Sample Stockpile Sample Collection- 2008

A 250 tonne (t) bulk sample was extracted from the mine portal in 2006 and 2007. Mine Rock and ore rock that was excavated during mining of the bulk sample was placed in 34 individual rock piles at the ore and Mine Rock storage area. Each rock pile was segregated according to the date which the material was mined. Fifteen piles consisted of material mined in October 2006, 5 of material mined in March 2007, and 14 of material mined in August 2007. Samples collected from each pile by Fortune geologists were submitted for assay of gold, arsenic, bismuth, cobalt, and copper; the assay values were used to designate each pile as sub-economic mineralized Mine Rock or ore. According to Fortune site geologists, black rock schist was the main rock type in 33 of the piles, and one rock pile consisted of (dominantly) feldspar porphyry.

In August 2008, the individual rock piles were centralized into an area immediately south of the Portal. The amalgamated rock pile was subsequently covered by low permeability geotextile to limit runoff and infiltration from the pile.

During the deconstruction of the individual rock piles, a detailed sample collection program was carried out in order to assess the effects of physical and chemical weathering during the short-term storage of mineralized Mine rock and low grade ore. Sixteen piles were selected for sampling, based on lithology (i.e., ore versus waste), arsenic assay values provided by Fortune and the date which the material was mined. The piles were visually observed by excavating a cross section through the middle of each pile using an excavator. The exposed cross section was logged with respect to visible signs of oxidation and alteration of in situ rock, Mine lithology, grain size variation, and presence of visible seepage pathways. Several samples were collected from each pile to assess compositional variation within the piles, with respect to both primary lithology and secondary effects of weathering. Each sample weighed approximately 3 to 5 kg. Samples were collected in large plastic bags, which were sealed and assigned a unique sample number. The individual samples were packed in large rock pails, which were sealed and labelled prior to shipment to the analytical laboratory. These samples were submitted for a number of tests to evaluate the primary (i.e., unaltered rock) and secondary (i.e., reaction products of physical and chemical weathering) composition of the rock.

Five piles were selected for collection of larger samples (i.e., greater than 200 kg) for the purpose of field scale testing. Stockpiles were selected for field cell construction samples in order to capture the range of arsenic concentrations in the piles in the bulk stockpile area. Four samples were collected piles known to consist of Mine Rock, one sample from an ore pile. The field cell samples were collected primarily from the unaltered zone in the interior of each stockpile. The rock in each sample was collected from a similar range in particle size, ranging

from the fine (sand size) fraction to less than approximately 20 cm. Representative sub-samples of each of these larger samples were submitted for geochemical characterization to confirm solid phase characteristics.

Exploration Drill Core and Outcrop Grab Samples- 2008

Three samples of exploration drill core and 10 outcrop samples were collected from potential borrow areas and locations in the vicinity of the starter dams of the TMA. Exploration drill core samples were collected over 10 m intervals, according to the protocols followed during the 2004 drill core sample program.

Outcrop grab samples were collected from surface rock exposures using a rock hammer.

2.3 2008 Tailings Sample Program

Samples of the tailings products were generated during pilot plant testing conducted at SGS Lakefield, under the direction of Fortune. Tailings samples were collected by SGS Lakefield following the completion of pilot plant testing. Samples of the bulk rougher and bulk cleaner tailings, respectively, were submitted for geochemical characterization in order to evaluate the composition of the potential tailings products.

PP#14 is a mixture of multiple tailings products, which were generated by SGS Lakefield under the direction of Fortune. PP#14 consists of combined bulk rougher and bulk cleaner flotation tailings, representative of material that would be produced after the first 2 years of mining

3.0 SAMPLE ANALYSIS

Acid generation potential and metal-leaching rates were evaluated for each Mine Rock, low grade ore and tailings type using standard static and kinetic testing methods, consistent with the recommendations in Price (1997), MEND (2005), and INAP(2009). Field scale evaluation of mine rock, sub-economic mineralized Mine Rock, ore and tailings was initiated at the NICO Project site in 2008.

The subsequent sections provide an overview of the methods used in the NICO Project geochemical characterization program. Price (1997) should be referred to for extensive descriptions of the test methods.

3.1 Static Tests

Static tests are relatively rapid, one-time tests that are typically used to perform an initial assessment of the acid potential and metal leaching potential of a sample. Fortune contracted SGS Lakefield, in Lakefield Ontario to perform the static tests.

3.1.1 Mineralogy

Select samples of Mine Rock, ore and trace metals were submitted for mineralogical analysis by x-ray diffraction (XRD) using Rietveld refinement. This semi-quantitative method determines the relative occurrences of minerals in a sample. The neutron and x-ray diffraction of powder samples resulted in a pattern characterized by peaks in intensity at certain positions. The height, width and position of these peaks were used to determine many aspects of the materials structure. The Rietveld method used a least squares approach to refine a theoretical line profile from a software library until it matched the measured profile.

3.1.2 Major Element and Trace Metals Analysis

Major and trace element analysis was conducted to quantify the elemental composition of the sample. Mine Rock, sub-economic mineralized Mine Rock, ore and tailings samples were submitted for major element and trace metal analysis.

Major and trace metal analyses was conducted according to the methods listed below:

- whole rock analysis for major oxides (Al_2O_3, CaO, Cr_2O_3, Fe_2O_3, K_2O, MgO, MnO, Na_2O, P_2O_5, SiO_2, TiO_2, V_2O_5) by borate fusion / x-ray fluorescence (XRF) (Claisse 1995; Rouseau 1990);
- metals (Ag, Al, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Sn, Sr, Ti, Tl, U, V, Zn) and metalloids (As and Se) by inductively-coupled plasma mass spectroscopy (ICP-MS), with samples extracted using a concentrated strong acid solution of perchloric, nitric, hydrochloric and hydrofluoric acids (Bock, 1979); and
- mercury by cold vapour atomic absorption spectroscopy (CVAAS), EPA 245.1 methodology (U.S. EPA, 1983).

3.1.3 Modified Acid-Base Accounting (ABA)

Most samples of mine rock, sub-economic mineralized mine rock, ore and tailings were submitted for acid-base accounting (ABA), including the following tests:

- paste pH;
- total sulphur according to ASTM E1915-01 (ASTM, 2001a), and sulphide and sulphate sulphur as outlined in Price (1997), based upon EPA-600 methodology (Sobek et al., 1978);
- total inorganic carbon by LECO (ASTM (2001a); and
- bulk neutralization potential by modified Sobek method as per Lawrence (1990) and UBC (1996) and carbonate neutralization potential (NP).

3.1.4 Net Acid Generation (NAG) Testing

Select samples of mine rock, sub-economic mineralized Mine Rock, ore and tailings were submitted for NAG testing, conducted according to the protocols in AMIRA (2002). The purpose of the NAG test is to ensure complete oxidation of all sulfide minerals.

The results of the NAG test were used to assess the potential of a material to produce acidity after a period of exposure and weathering. During the NAG test, hydrogen peroxide is added to a sample in quantities sufficient to completely oxidize all sulphide minerals. The NAG pH is the pH of the oxidized solution measured at the termination of the test. The NAG pH was a useful indicator of whether a sample contains sufficient internal buffering capacity to neutralize the acidity produced through sulphide oxidation.

NAG testing was performed as described in AMIRA (2002) and Miller et al. (1997). The pH of the oxidized solution was measured after the completion of the reaction, followed by titration of the solution to a pH of 4.5 with sodium hydroxide. Back-titration to a pH of 7 was completed to provide added information on buffering capacity.

Three methods of short-term leach testing were performed on select samples of Mine Rock, sub-economic mineralized mine rock and tailings: synthetic precipitation leaching procedure (SPLP), shake flask extraction (SFE) and comprehensive analysis of NAG leachates. A brief summary of each method is presented below.

Select samples of exploration drill core, outcrop and tailings were submitted for SPLP. The purpose of SPLP is to evaluate the leachability of rock samples in weakly acidic leachate. SPLP was performed according to USEPA method 1312, modified to a 4:1 leachate to solid ratio using a standard dilute sulphuric/nitric acid solution using a pH 5 solution. Prior to SPLP, samples are crushed and ground to a maximum grain size of 9.5 mm. During SPLP, the sample is agitated over a period of 18 hours on a rotary extractor prior to the decant of the SPLP leachate for analysis. SPLP leachates were analysed for the following:

- pH, sulphate by ion chromatography, and ICP metal scan (including Al, As, Ag, Ba, Be, B, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti Tl, U, V, Y. and Zn) and Hg by CVAAS

SFE was conducted on samples of exploration drill core and stockpiled, ROM rock. SFE simulates the dissolution of soluble mineral phases from a sample in de-ionized water (i.e., neutral pH solution). During SFE, a 100 gram sample of rock is leached with 300 mL of de-ionized water over a period of 18 hours. Exploration drill core samples were crushed and ground to a maximum grain size of 9.5 mm prior to SFE. Most ROM rock samples, on the other hand, did not undergo grain size reduction prior to SFE, in order to better represent actual grain sizes observed, and reduce uncertainty that could be introduced in the testing by crushing and grinding. A sub-set of the ROM samples were crushed to a maximum grain size of 9.5 mm prior to leach testing, to evaluate the variation in leachability resulting from grain size reduction. SFE leachates were analysed for the following:

- pH, sulphate by ion chromatography, and ICP metal scan (including Al, As, Ag, Ba, Be, B, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti Tl, U, V, Y, and Zn) and Hg by CVAAS

For select samples, the NAG supernatant water quality was analyzed after oxidation by hydrogen peroxide but before sample titration. The purpose of this evaluation was to determine the composition of leachate that could result from the complete oxidation of sulphide minerals and dissolution of non-sulphide minerals that are soluble in the test conditions. The NAG supernatant was tested for the following parameters:

- pH, alkalinity, acidity, conductivity, sulphate and chloride by ion chromatography, ICP metal scan (including Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se Sn, Sr, Ti, Tl, U, V, W, Y, and Zn) and Hg by CVAAS

3.1.5 Tailings Decant Water and Process Water Evaluation

Two methods of decant water quality analysis were performed:

- Water decanted from samples of bulk rougher tailings, cleaner flotation tailings and the NICO Field Test Blend tailings was submitted for chemical analysis. Analysis of this water provides an indication of the chemical composition of process water in contact with tailings.
    - Water decanted from samples of the bulk rougher tailings and NICO Field Test Blend during the construction of the tailings field cells at the NICO Project site was submitted for analysis at ALS Environmental, including pH, conductivity, alkalinity, Total Dissolved Solids (TDS) and hardness, nitrogen species, and total and dissolved major parameters and metals (Ca, Cl, K, Mg, Na, SO_4, Ag, Al, As. B, Ba, Be, Bi, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, Tl, U, V, and Zn).

- Water was decanted from cleaner flotation tailings (PP #14) at SGS Lakefield. This water was submitted for analysis including pH, conductivity, alkalinity, TDS, nitrogen species, and total and dissolved major parameters and metals (Ca, Cl, K, Mg, Na, SO_4, Ag, Al, As. B, Ba, Be, Bi, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, Tl, U, V, and Zn).

- Aging tests were conducted on NICO Field Test Blend tailings and the Iron-Arsenic Precipitates (copper recovery). The purpose of age testing is to evaluate the composition of the standing column of water (i.e., decant water) that forms as the solid particles settle from the slurry. According to SGS Lakefield (Barbara Bowman, SGS Lakefield, Pers. Comm. June 16, 2009), the aging tests were conducted as follows:
  - The NICO Field Test Blend was generated by recombining pulps and decant solution. The samples were allowed to stand for a period of 56 days. Decant water was collected at Day 0, 1, 14, 21, 28 and 56.
  - Decant water samples were analyzed for by ICP-MS for metals, major ions, pH, acidity, alkalinity, nitrate and ammonia. Samples from the aging test conducted on decant water from NICO Field Test Blend were submitted for cyanide analysis.

- Samples of process water (i.e., water that was recycled through the pilot plant) were collected from the 2010 pilot plant. Samples were submitted for analysis including pH, conductivity, alkalinity, and total and dissolved major parameters and metals (Ca, Cl, K, Mg, Na, SO_4, Ag, Al, As. B, Ba, Be, Bi, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, Tl, U, V, and Zn).

3.2 Kinetic Testing - Laboratory Humidity Cell Tests

Select samples of Mine Rock and tailings were submitted for humidity cell testing. The analytical protocol adopted for the NICO Project humidity cell tests was ASTM D5744-96 (Standard Test Method for Accelerated Weathering of Solid Materials Using a Modified Humidity Cell). Method ASTMD 5744-96 is a widely used standard technique for accelerated weathering. The ASTM method assesses the rate of weathering and release of mass from a solid material sample (ASTM 2001b). The tests are performed in a cylindrical cell measuring 10.2 cm in diameter. Within the cell, a 1 kg rock sample is leached with 1 liter (L) of de-ionize water. The test procedure consists of weekly cycles: for 3 days the cell is provided a steady flow of dry air (less than 10% oxygen), and for 3 days the cell is supplied with a steady flow of water saturated air (95% relative humidity). The cell is leached with a fixed volume of water on the seventh day. The de-ionized water was added as a single batch, with minimal disturbance of the rock. After 1 hour, the cell gravity-drains and the leachate were collected and submitted for chemical analysis. Leachate is analyzed for standard and comprehensive parameters according to the schedule below:

- pH, conductivity, acidity, alkalinity and sulphate, every week;
- for the first 5 cycles (including the initial flush), filtered leachate samples were submitted for dissolved metals analysis by ICP MS, mercury (CVAAS), and chloride;
- after the fifth week, leachate analysis was performed at 5-week intervals (i.e., weeks 10, 15, 20, etc.); and
- all intermediate weekly samples (i.e., weeks in which metals analyses are not completed) were retained and preserved as required, for possible future analyses.

3.3 Field Cells

Several large scale (i.e., > 200 kg) mine rock and ore field cells and tailings field cells (50 to were installed at the NICO Project in 2008 and 2010 to evaluate the long-term stability of rock in site-specific conditions. The principal objective of the field cell program at the NICO Project is to evaluate the potential for acid rock drainage and metal leaching of Mine Rock, low-grade ore and tailings in the site-specific, sub-arctic conditions.

The field cells consist of a 205 L (55 gallon) drum, fitted with a PVC sample outlet and a basal drainage layer of silica sand overlain by geotextile material. During the construction of each field cell, the rock / tailings sample was placed in the drum, which remains open to the atmosphere. Ambient precipitation drains through the sample, exiting through the basal outlet and collecting in a sample container.

Leachate samples are to be collected from the field cells regularly during the wet season. Fortune contracts ALS Environmental (ALS) in Yellowknife, NWT to perform the analysis of the field cell leachate. Field cell leachate samples are analyzed for the following parameters:

- pH, conductivity, alkalinity, acidity, hardness, total suspended solids (TSS) and total dissolved solids (TDS), Cl and SO_4;
- ICP scan, including Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Ti, Tl, U, V, and Zn; and
- Arsenic Speciation.

Field measurements recorded at the time of sample collection include the following:

- pH, conductivity, temperature and visual observations (e.g., discoloration, mineral precipitate, algal growth, etc).

Field cell tests are ongoing, as it is anticipated that several years of additional data collection will be required to achieve meaningful weathering rates.

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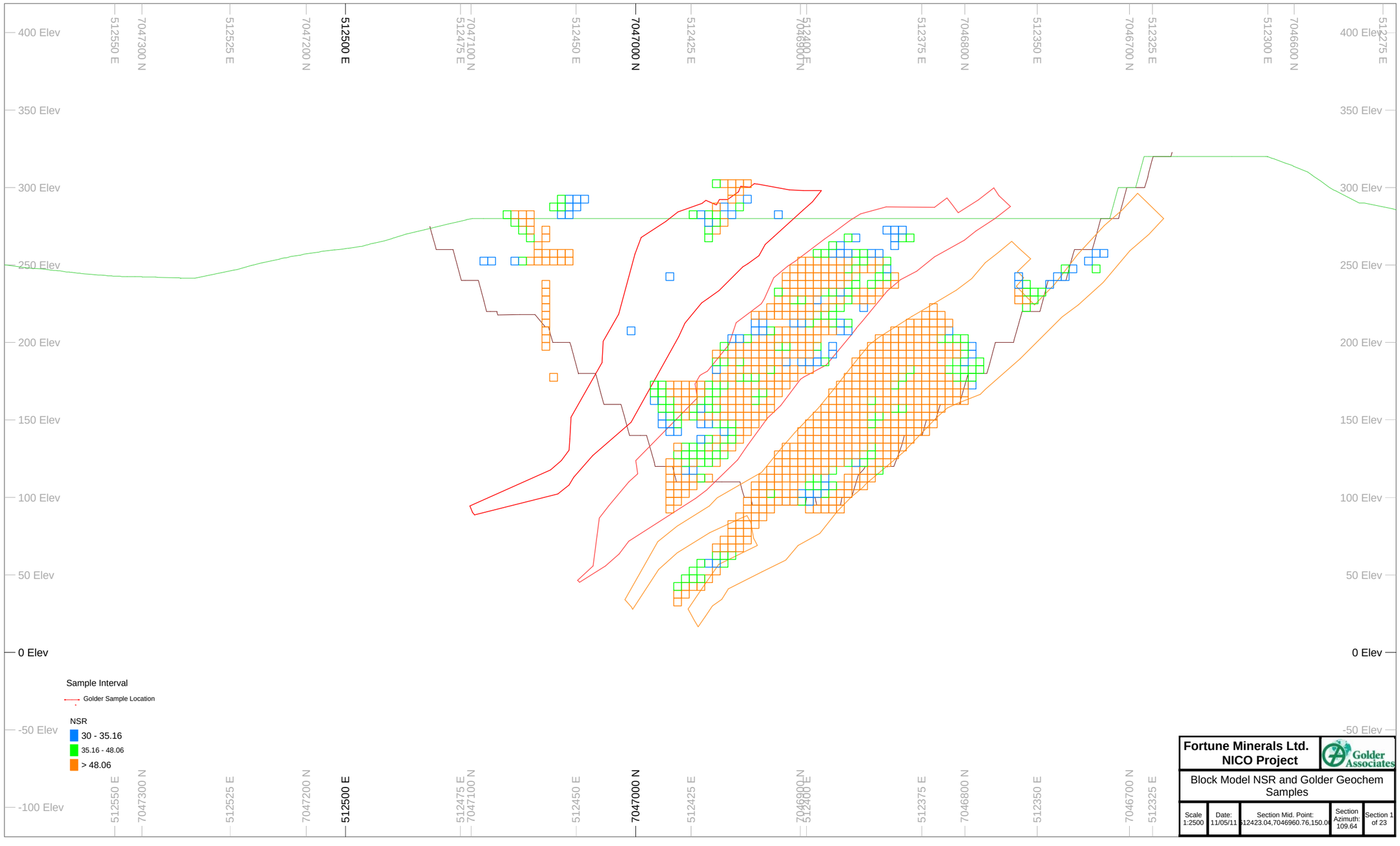
APPENDIX III

Cross Sections



Fortune Minerals Ltd.
NICO Project

Golder Associates

Block Model NSR and Golder Geochem Samples

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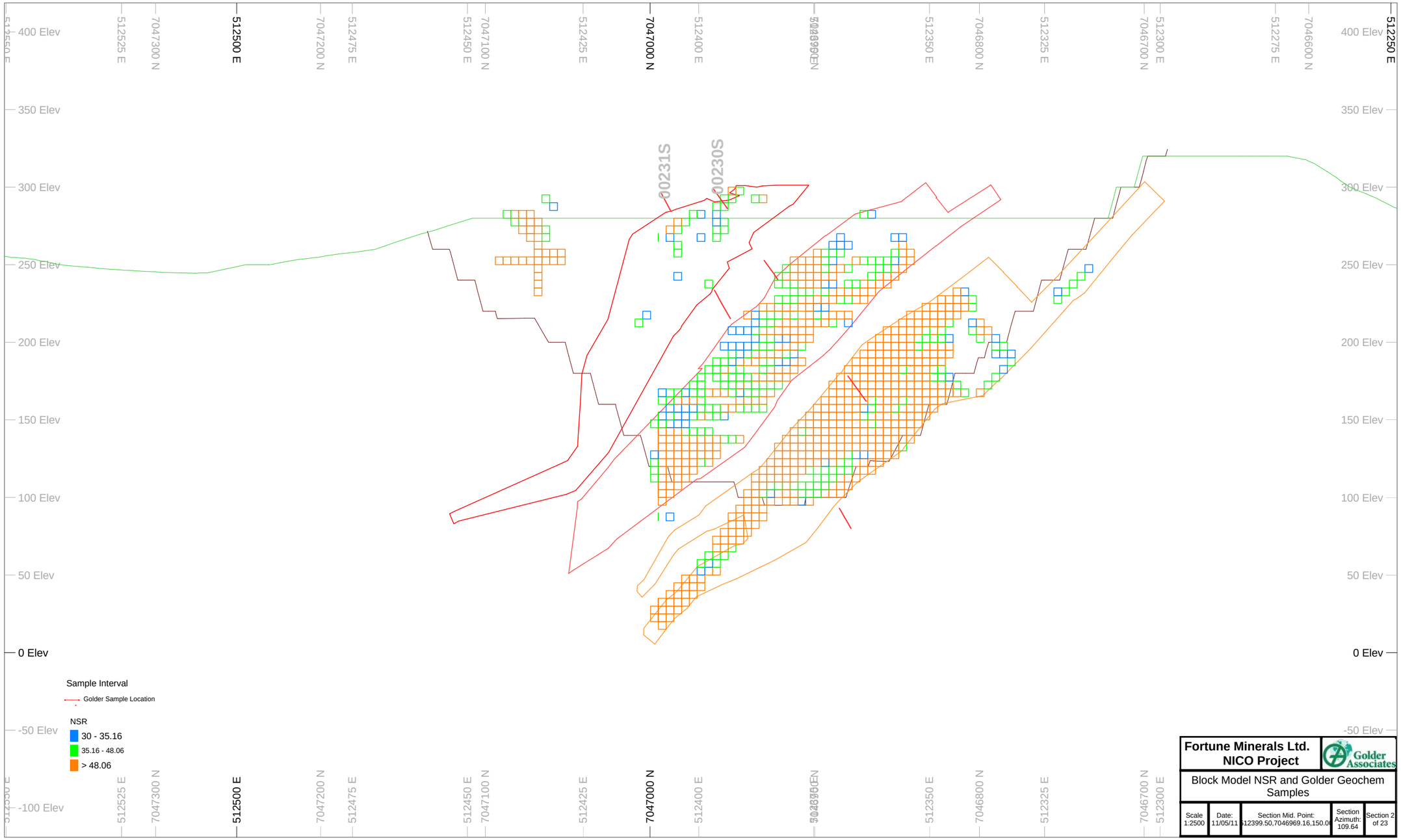

Fortune Minerals Ltd.
NICO Project

Golder Associates

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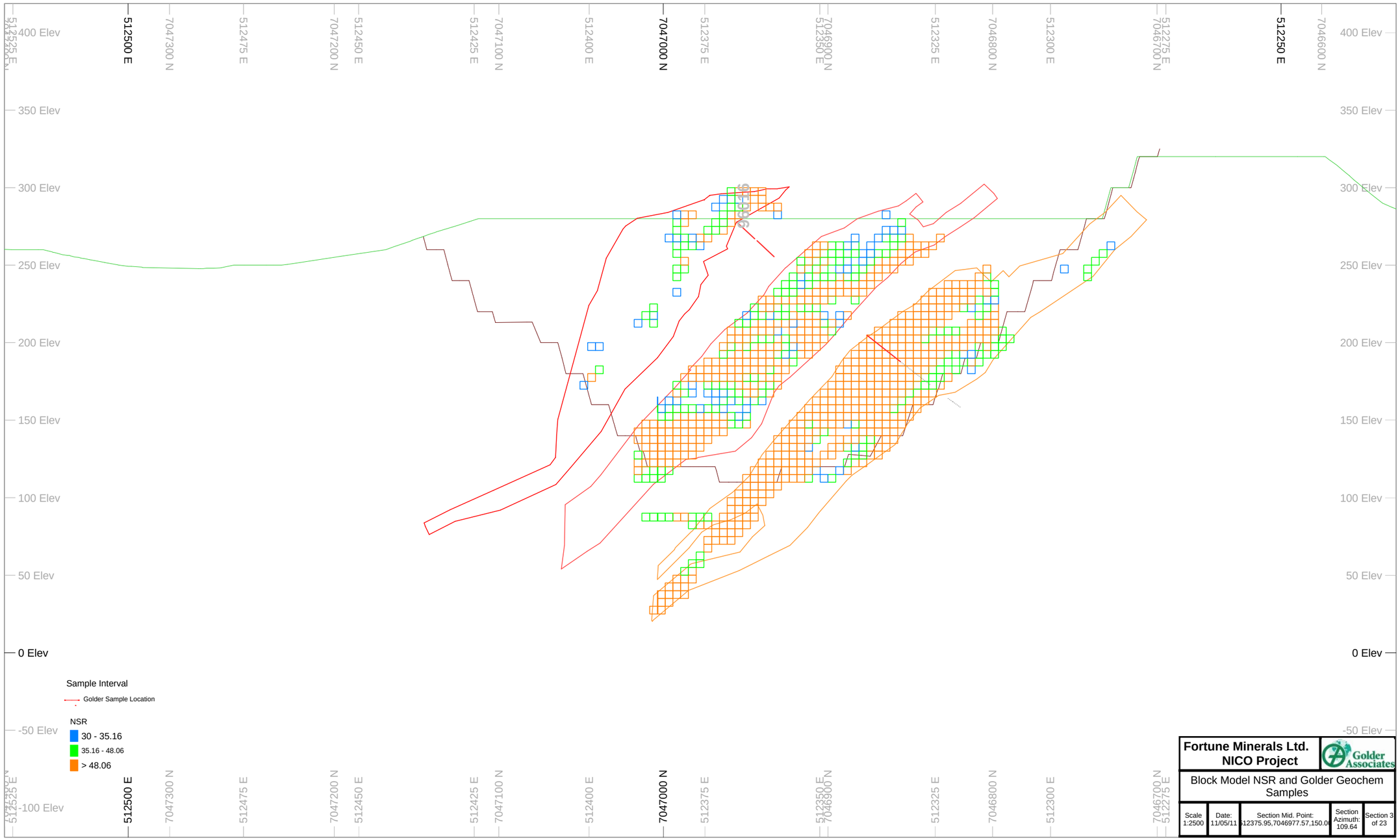
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0 Elev
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> 48.06
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NICO Project
Golder Associates
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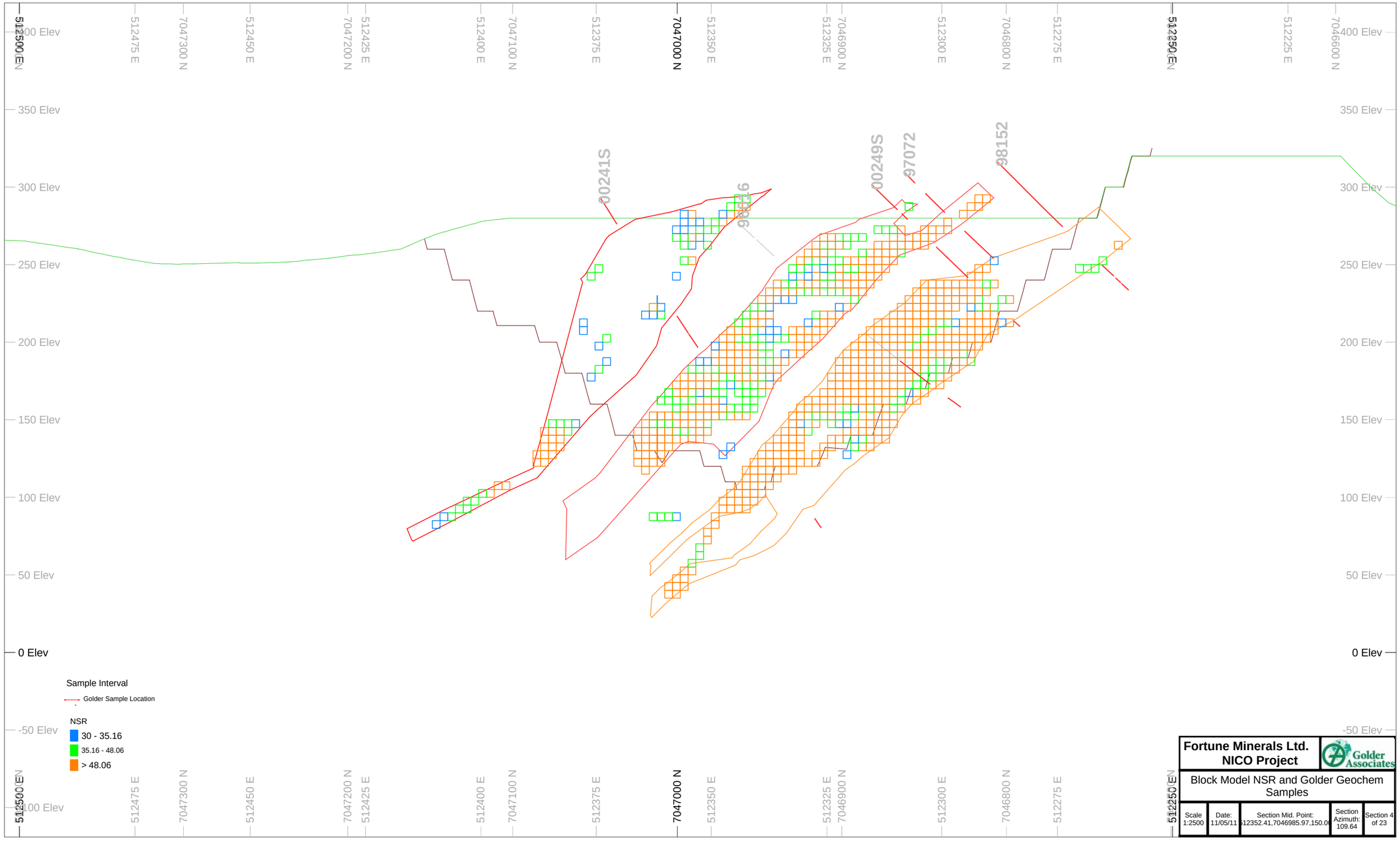
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NICO Project
Golder Associates
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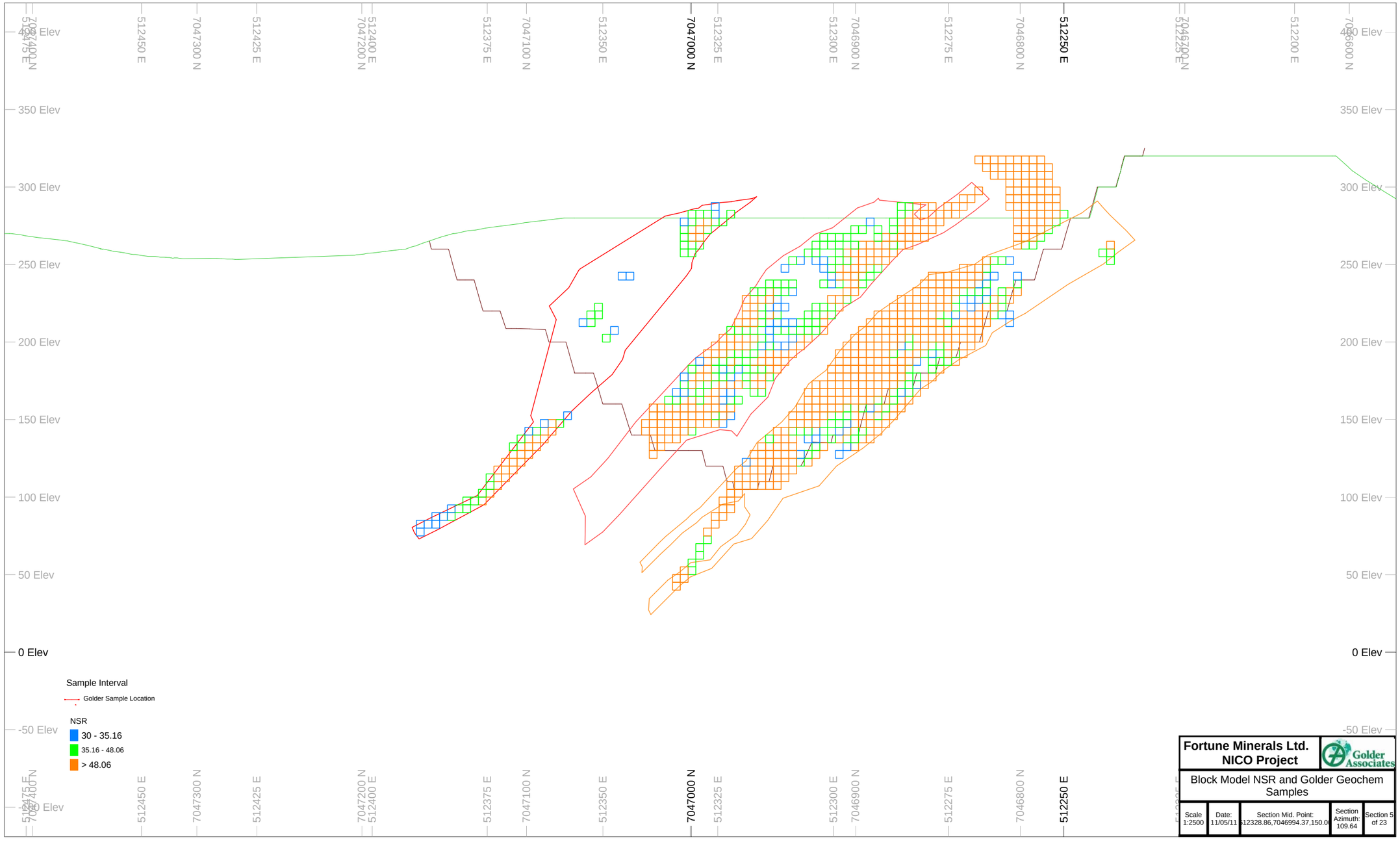
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35.16 - 48.06
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Fortune Minerals Ltd.
NICO Project
Golder Associates
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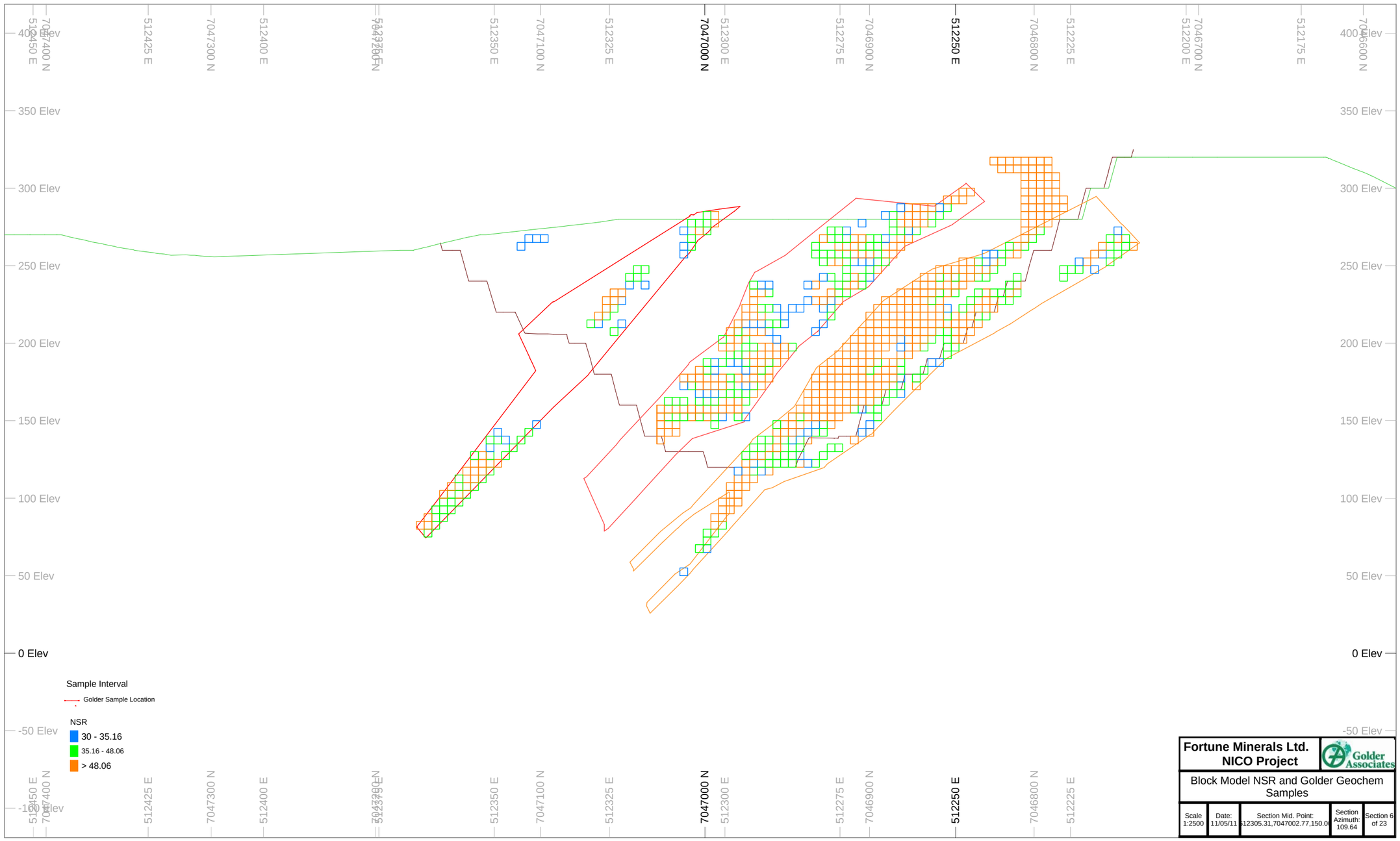

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Block Model NSR and Golder Geochem Samples

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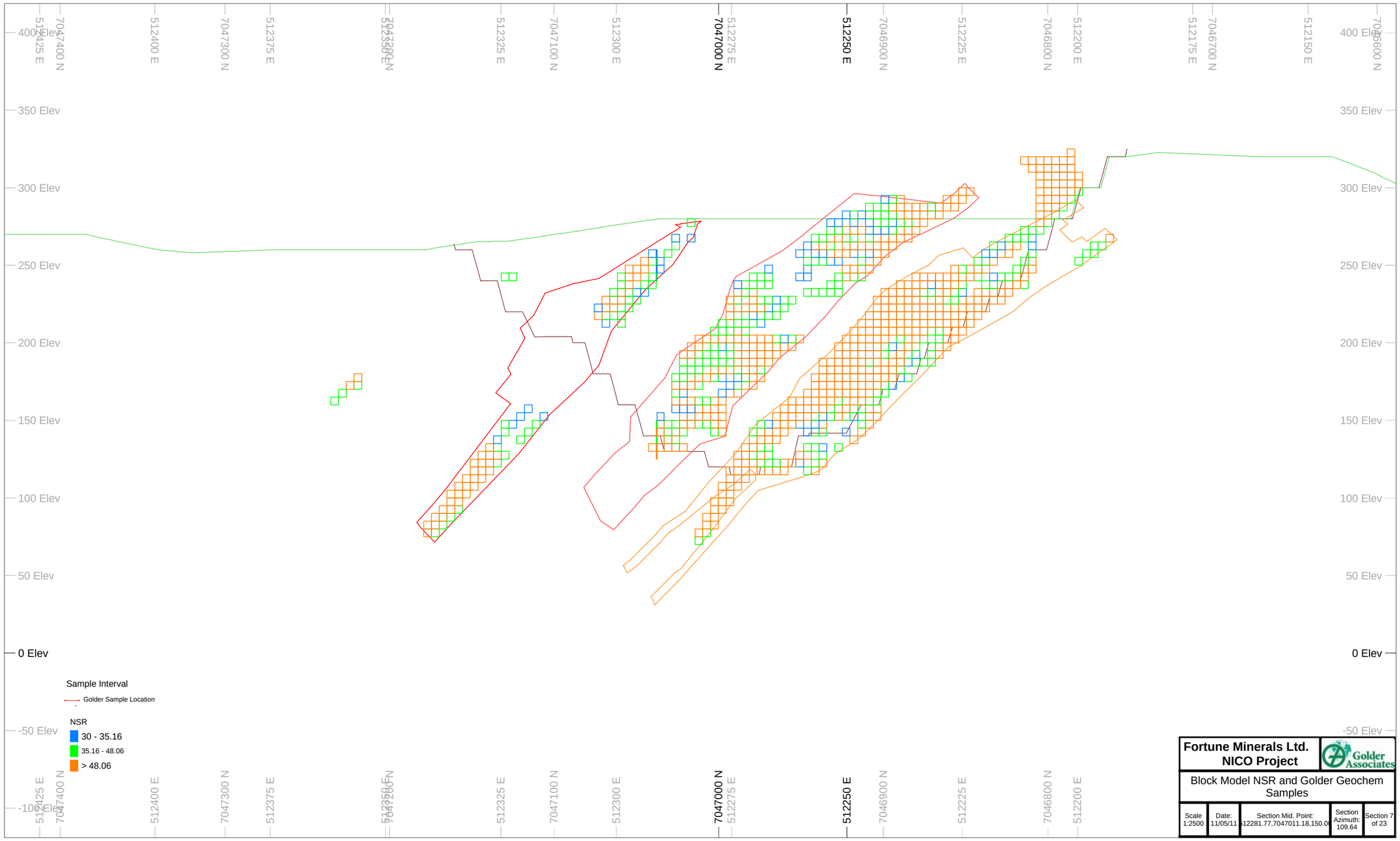

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NICO Project

Golder Associates

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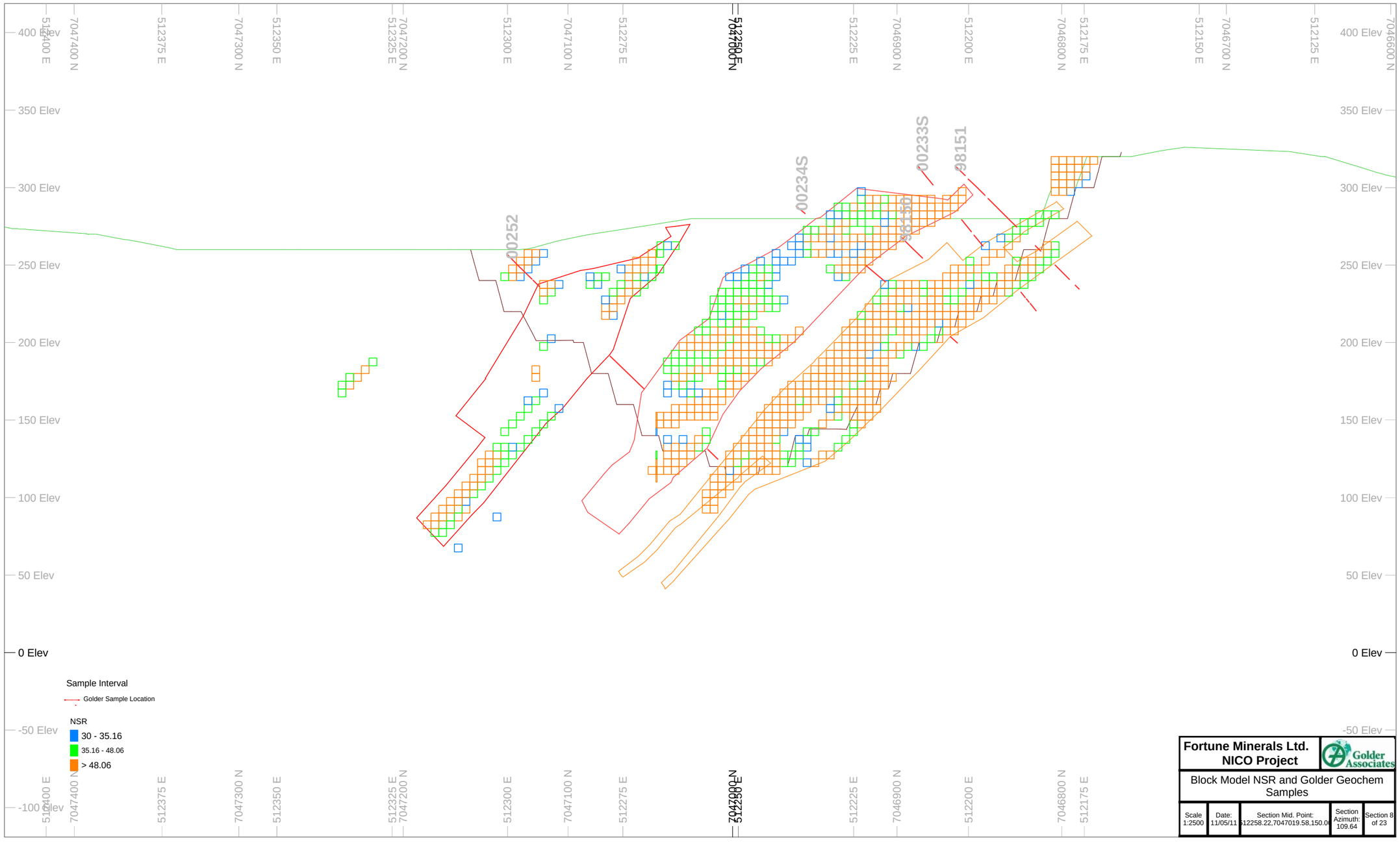
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NICO Project
Golder Associates
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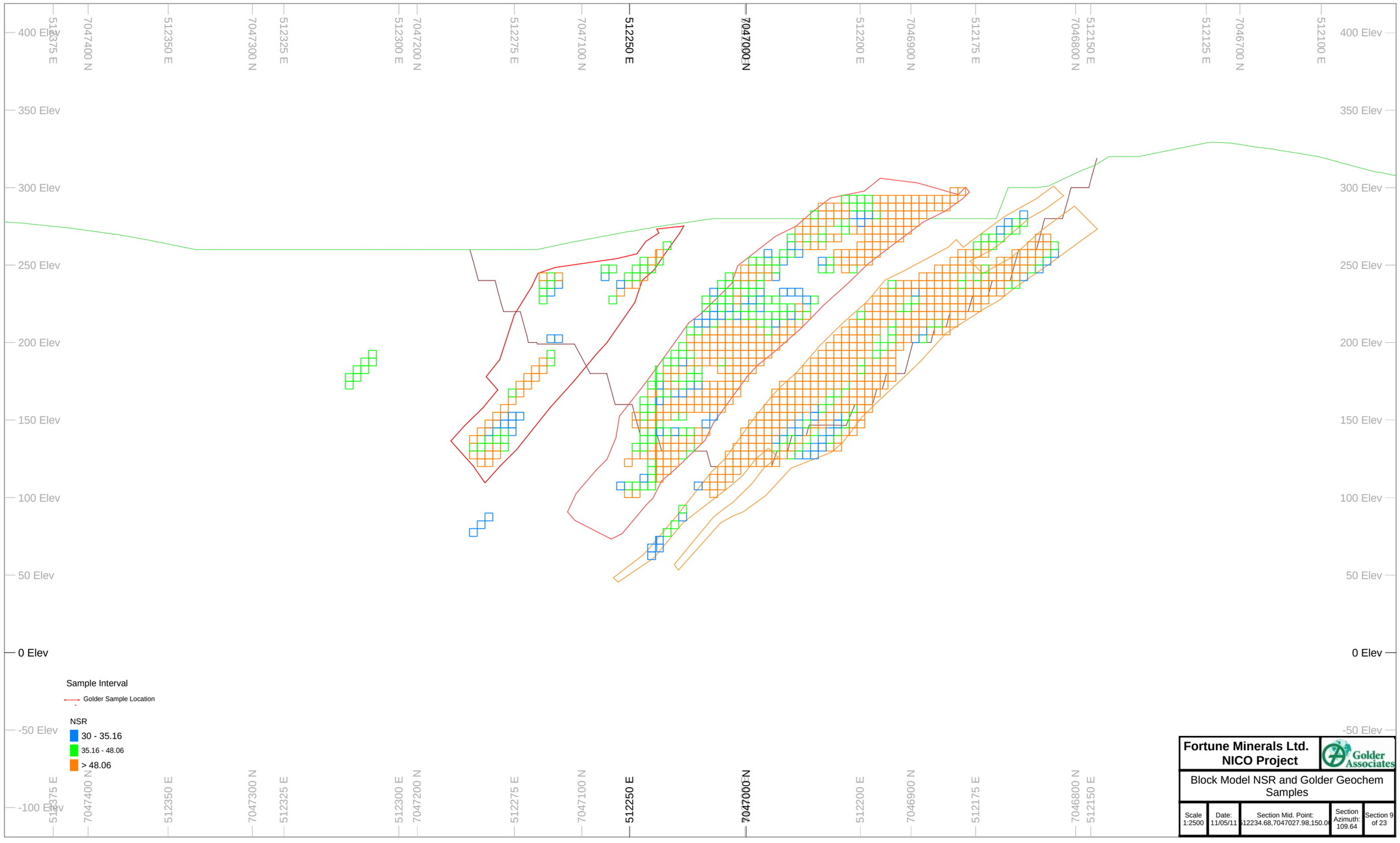
Section 8 of 23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Fortune Minerals Ltd.
NICO Project
Golder Associates
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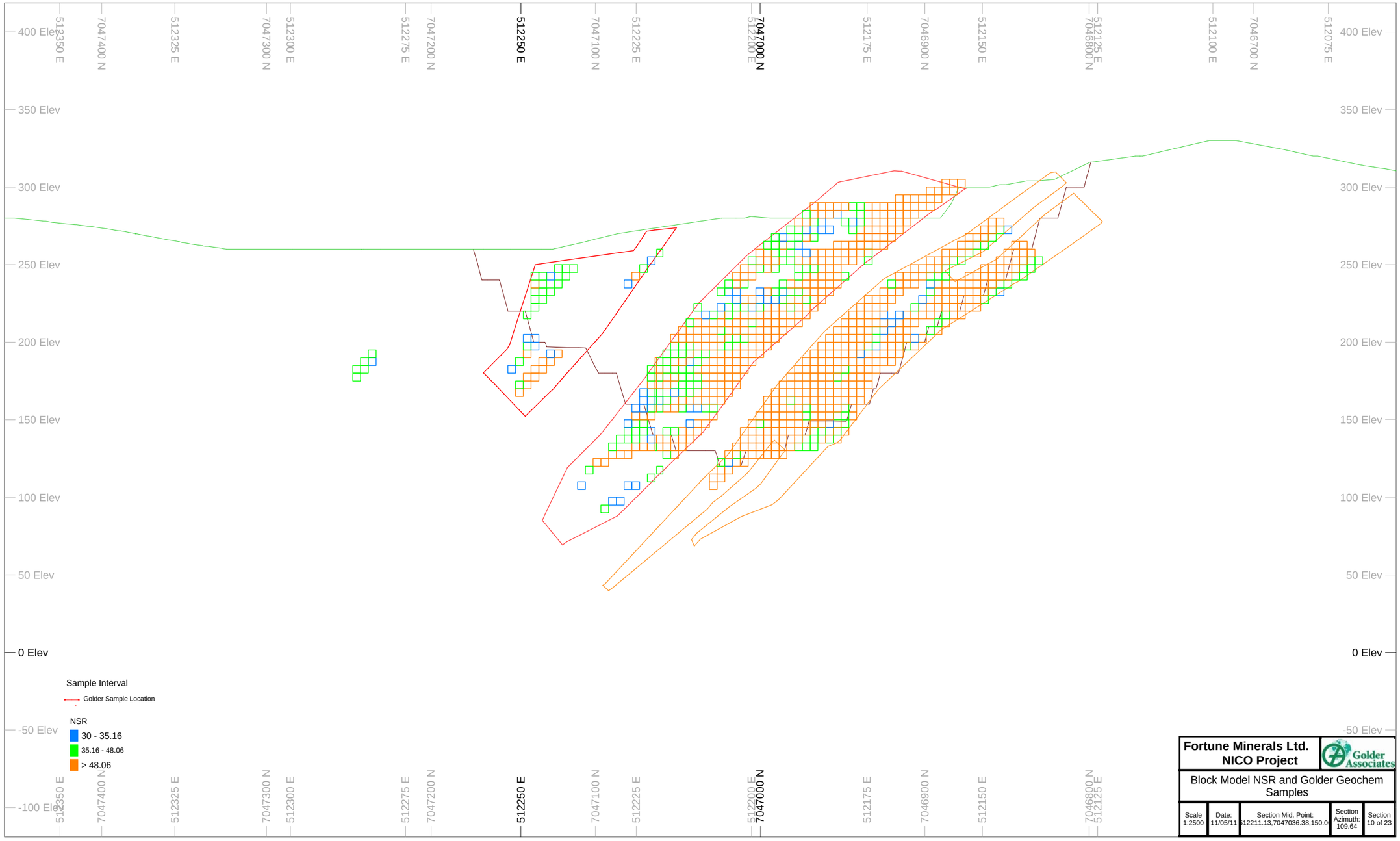

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NICO Project

Golder Associates

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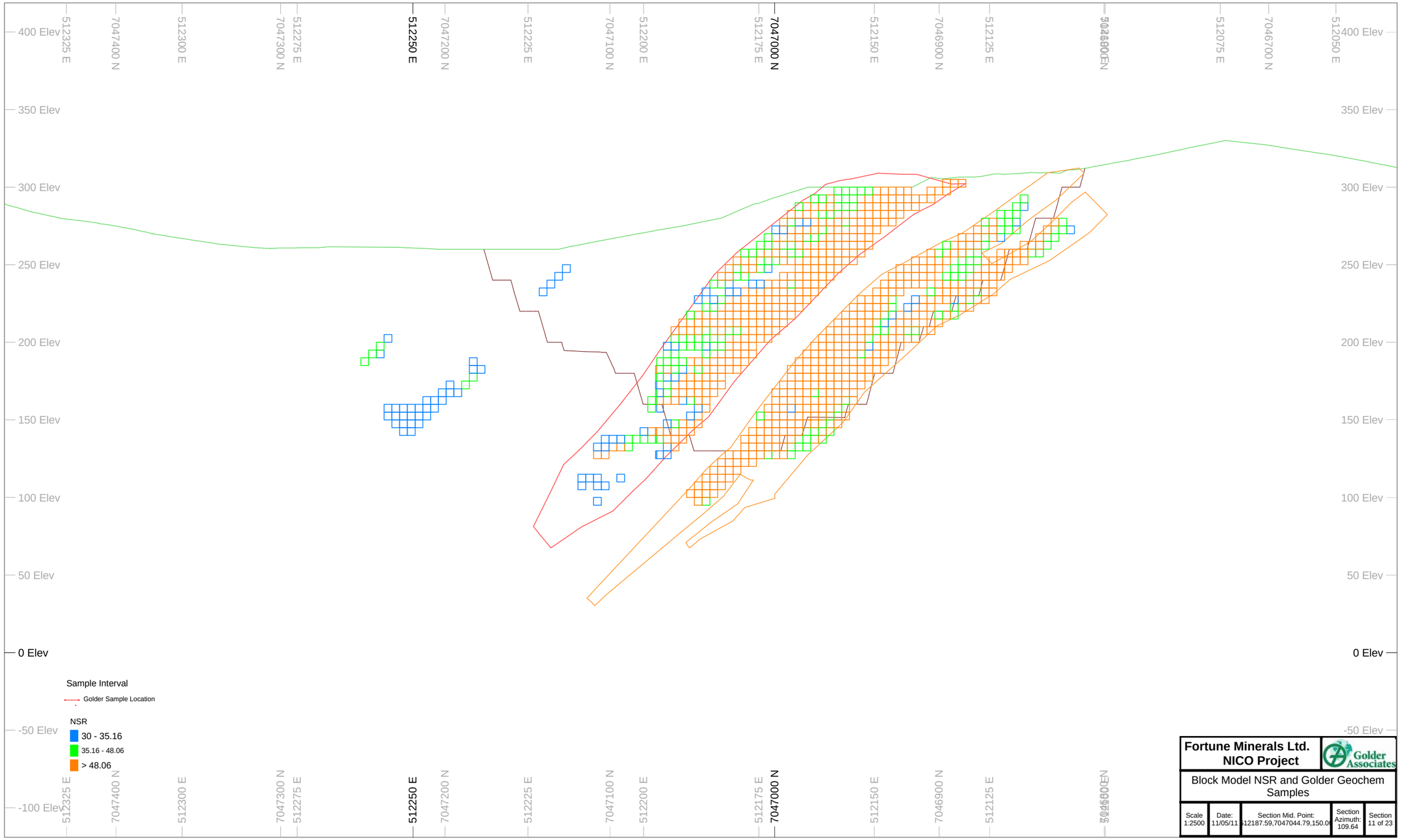
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Fortune Minerals Ltd.
NICO Project
Golder Associates
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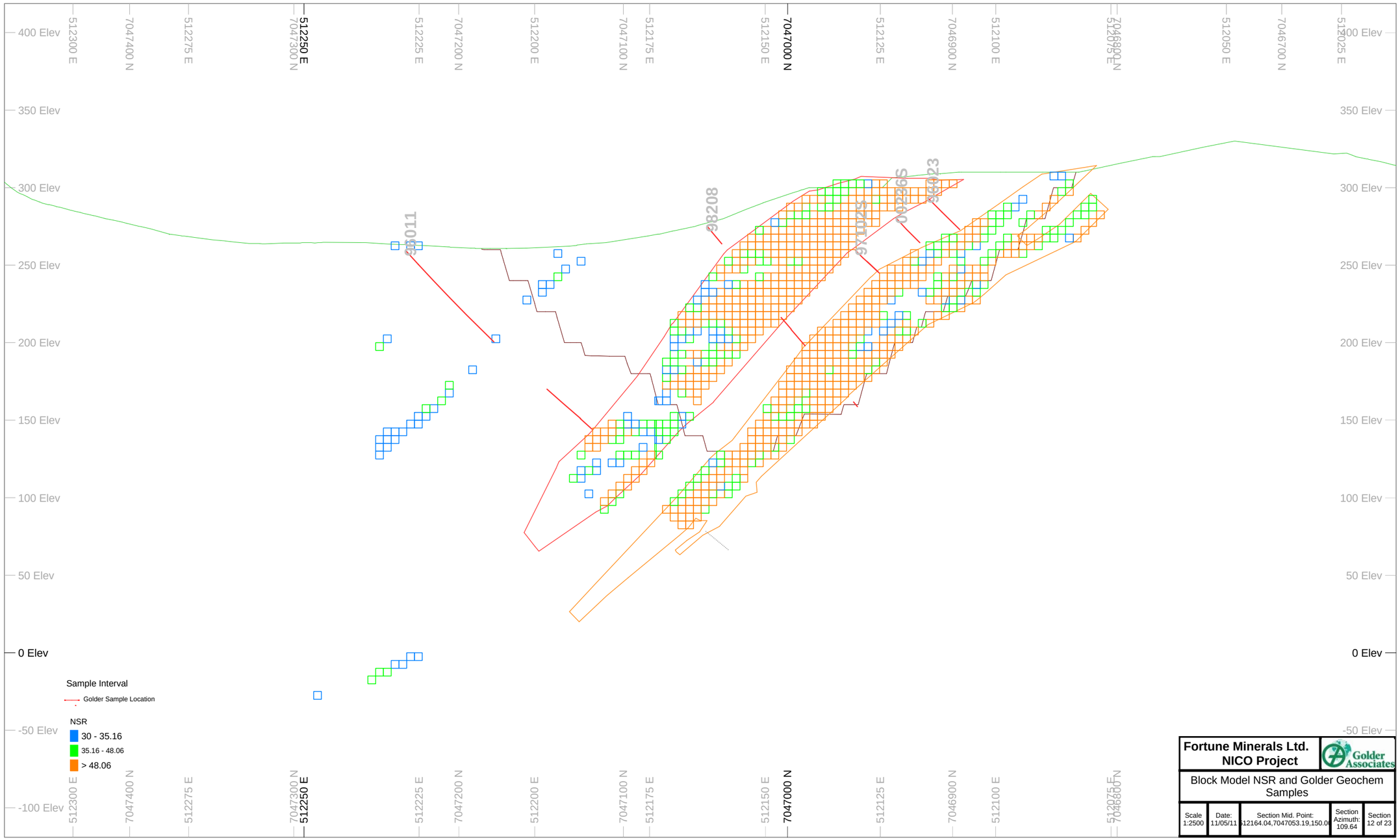

Fortune Minerals Ltd.
NICO Project

Golder Associates

Block Model NSR and Golder Geochem Samples

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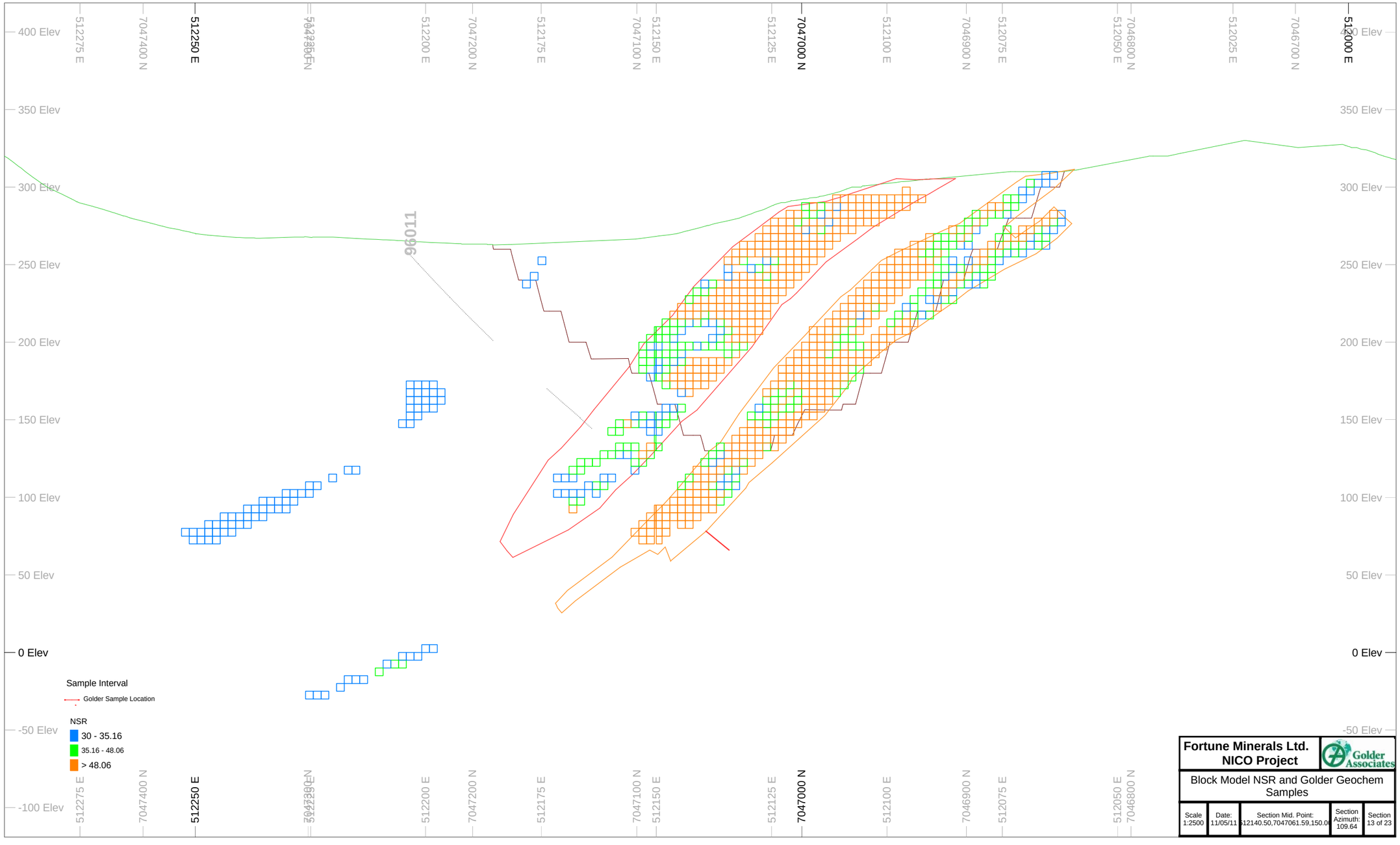

Fortune Minerals Ltd.
NICO Project

Golder Associates

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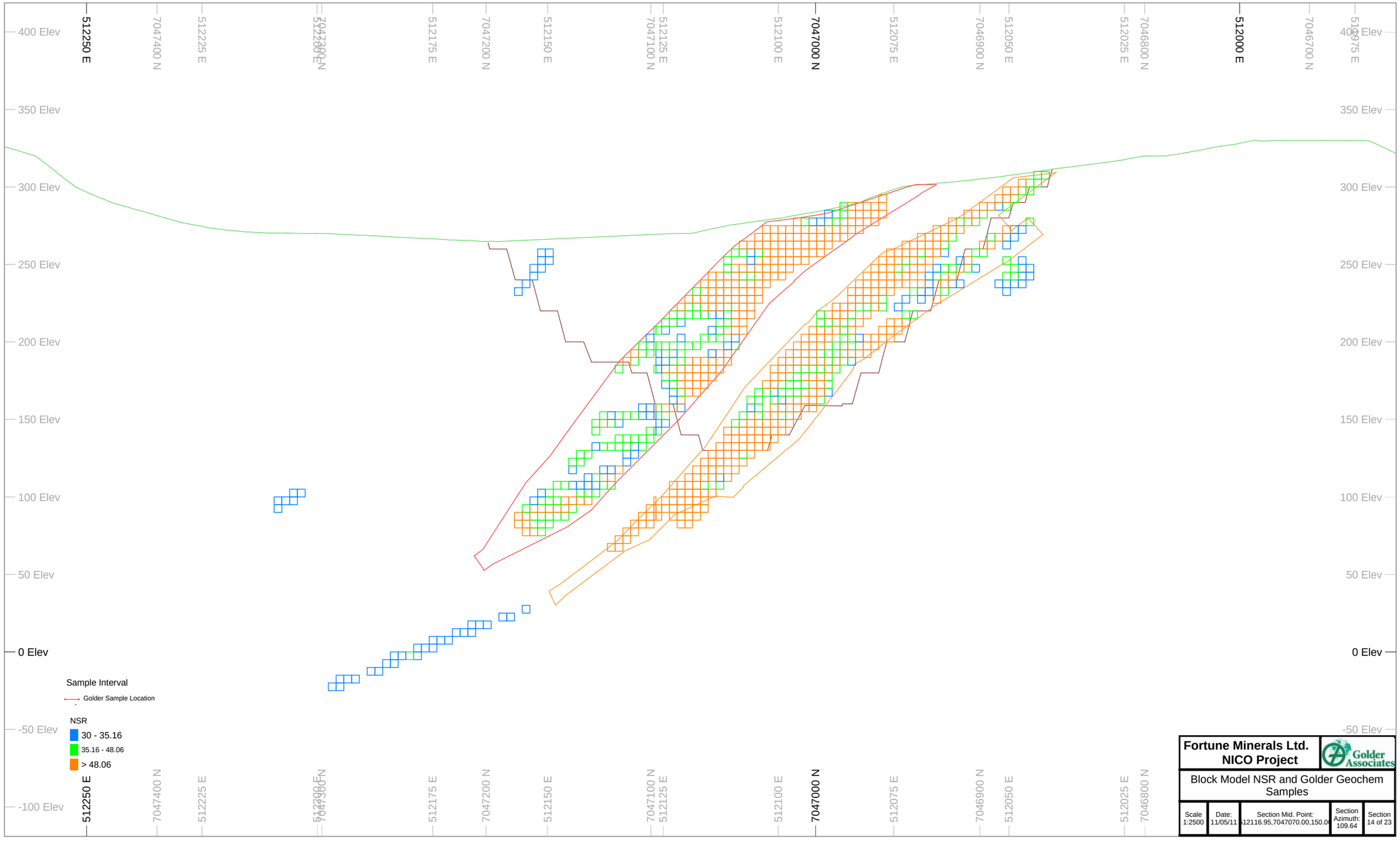
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Fortune Minerals Ltd.
NICO Project
Golder Associates
Block Model NSR and Golder Geochem Samples
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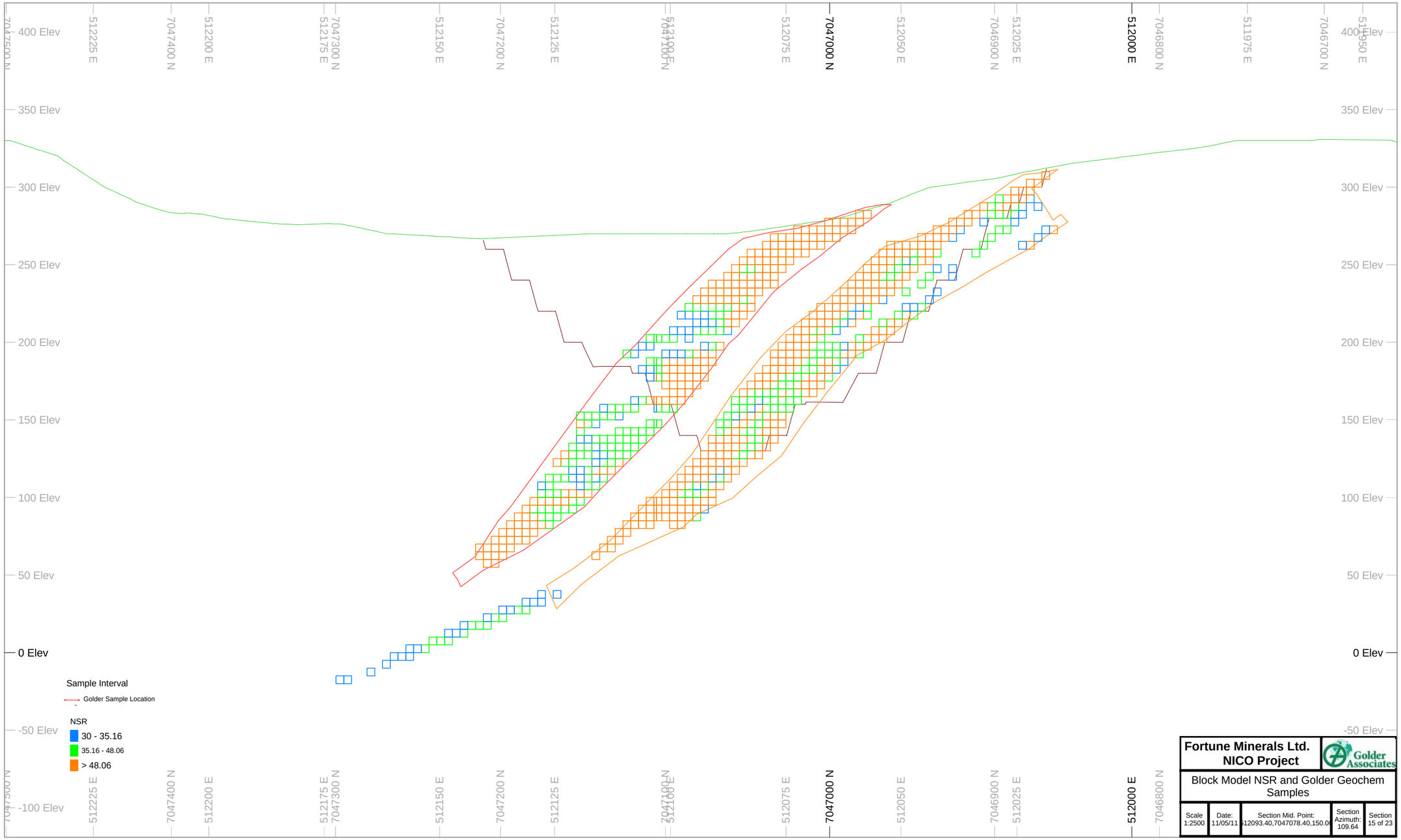
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Sample Interval
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Fortune Minerals Ltd.
NICO Project
Golder Associates
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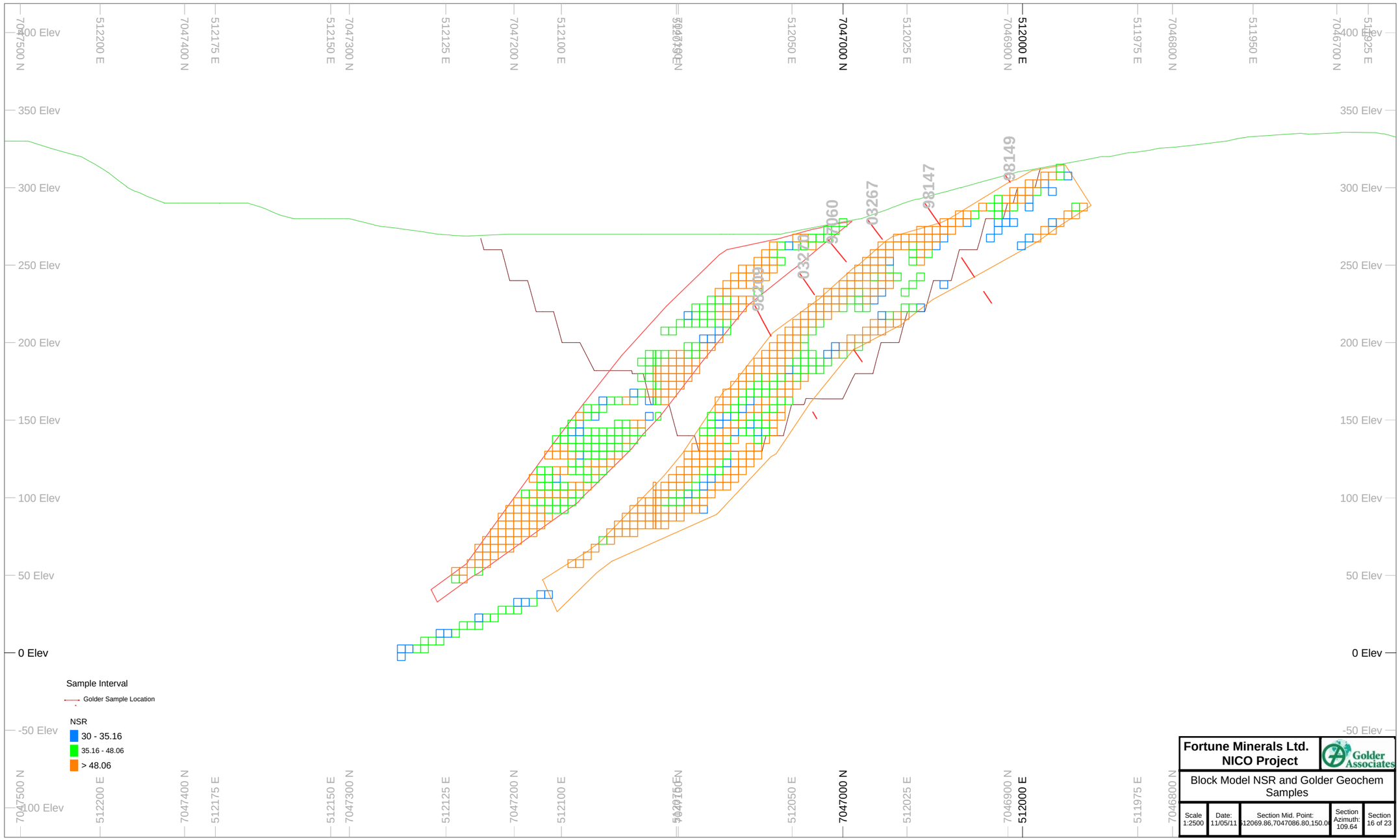
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Fortune Minerals Ltd.
NICO Project
Golder Associates
Block Model NSR and Golder Geochem Samples
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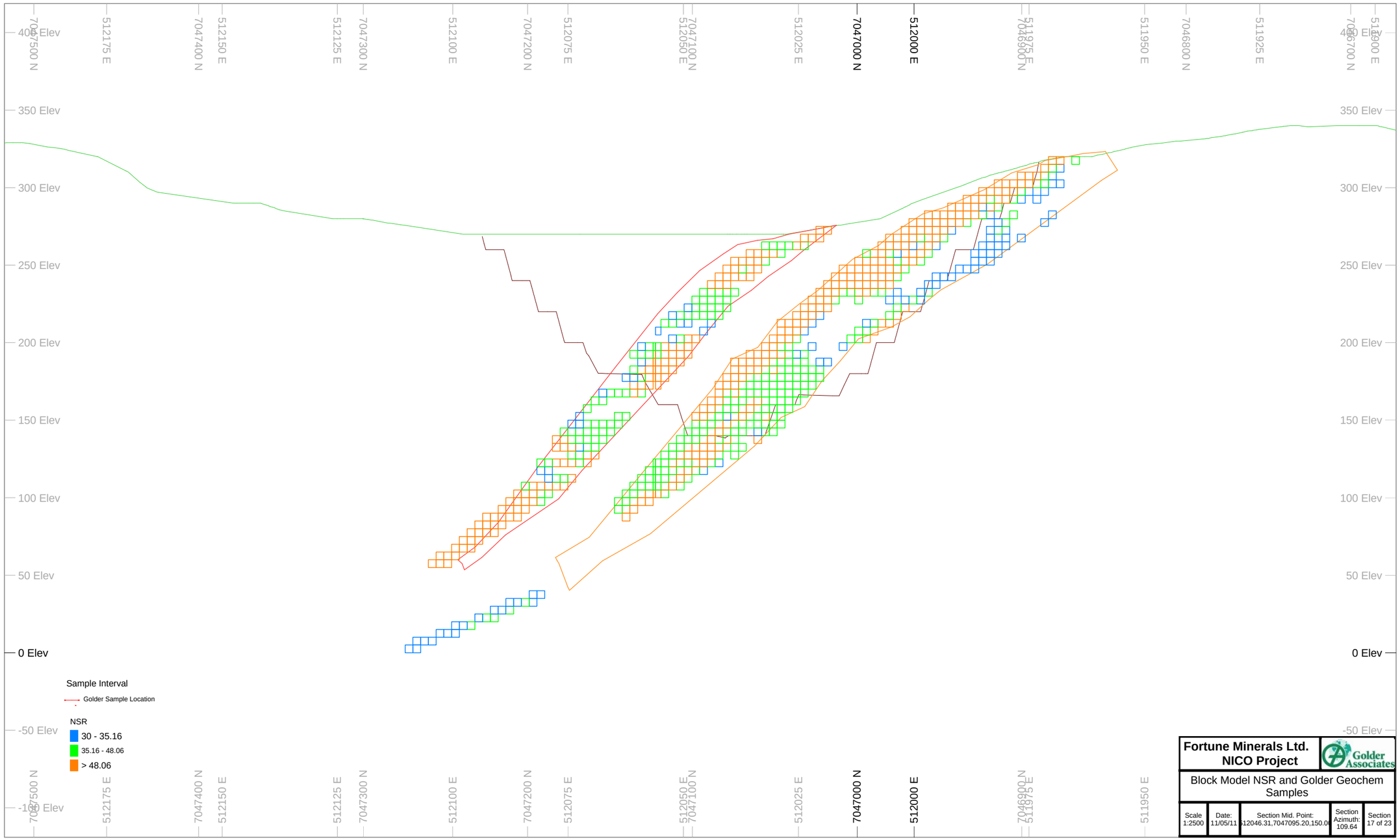

Fortune Minerals Ltd.
NICO Project

Golder Associates

Block Model NSR and Golder Geochem Samples

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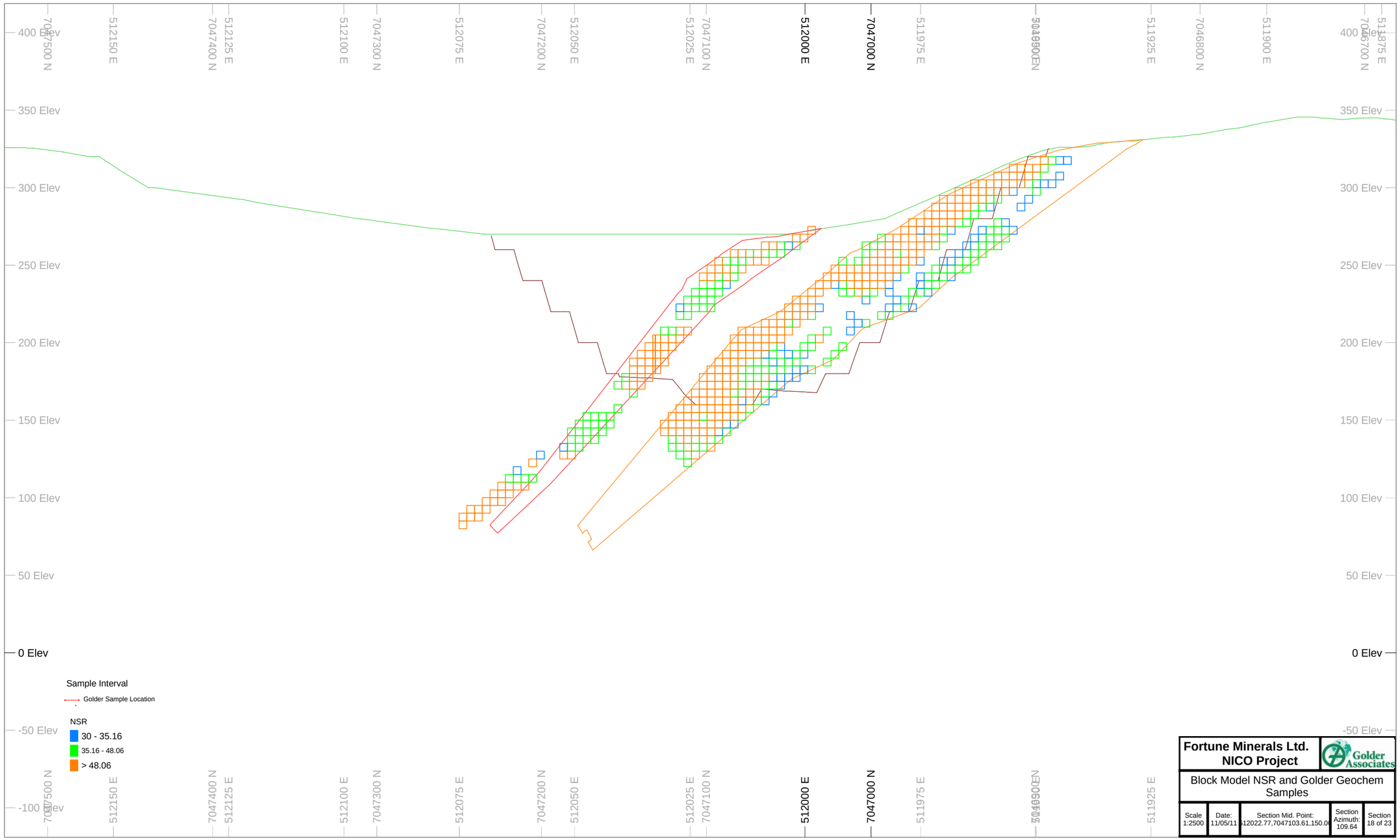
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Fortune Minerals Ltd.
NICO Project
Golder Associates
Block Model NSR and Golder Geochem Samples
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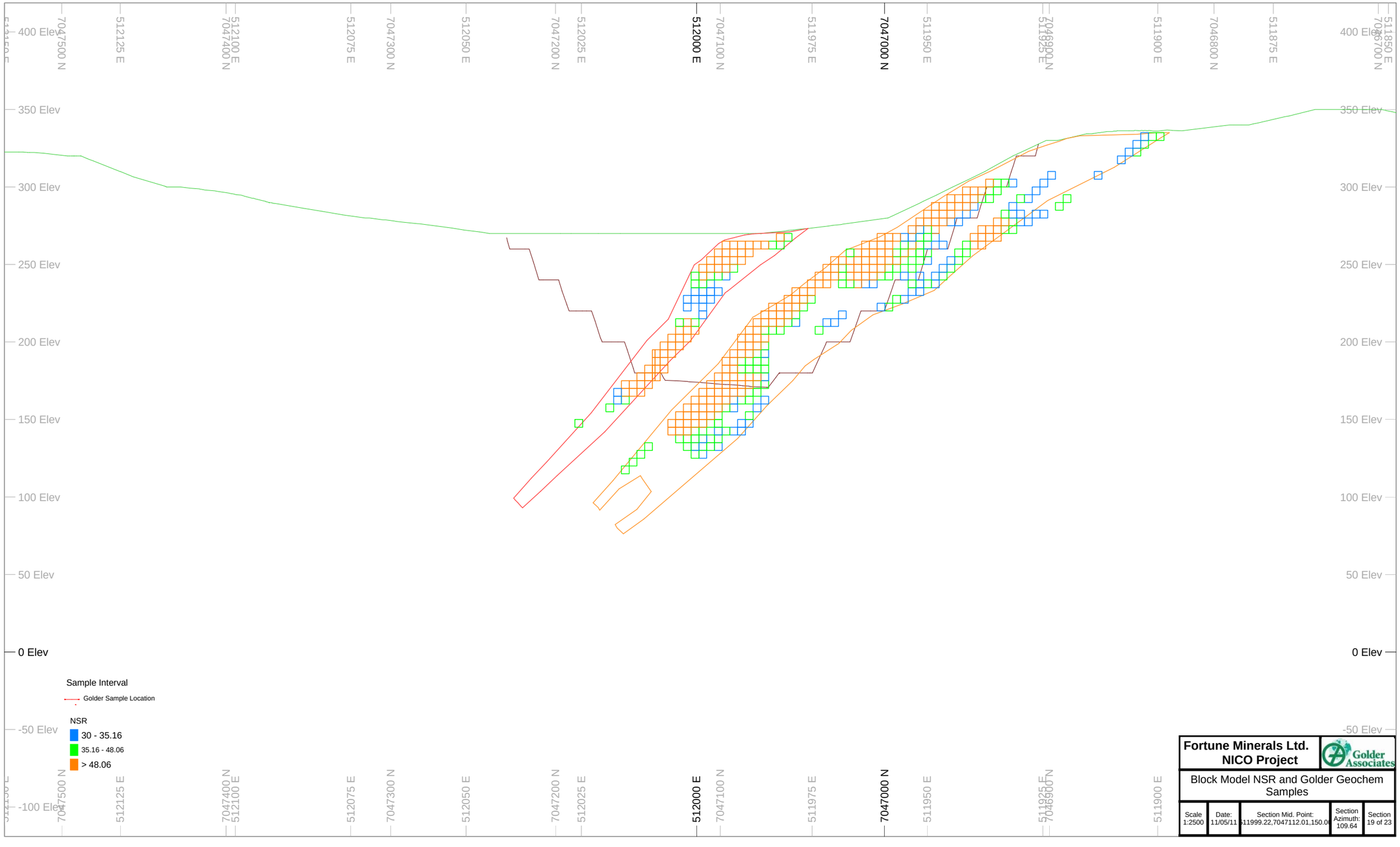
Section 18 of 23



Fortune Minerals Ltd.
NICO Project

Golder Associates

Block Model NSR and Golder Geochem Samples

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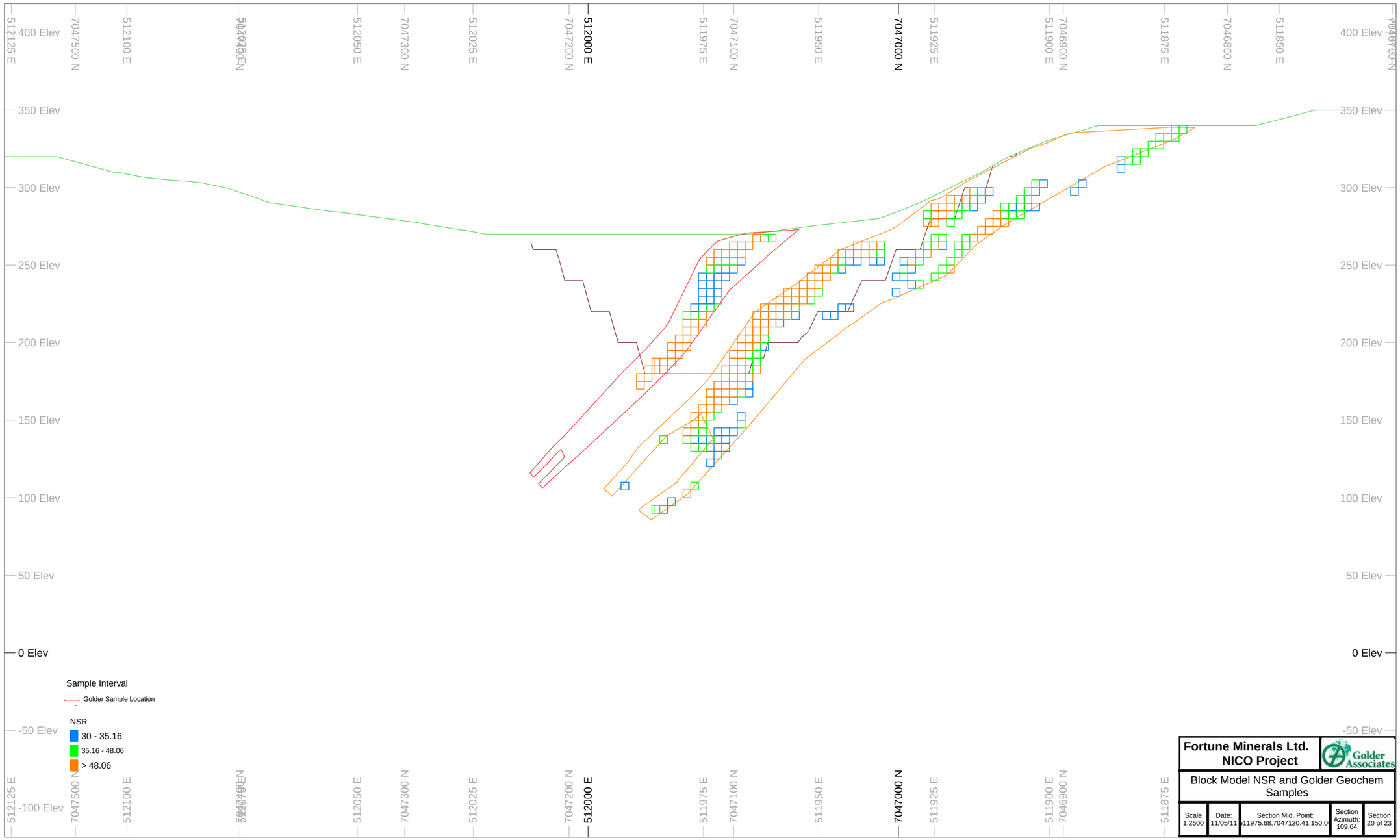
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Sample Interval
Golder Sample Location
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30 - 35.16
35.16 - 48.06
> 48.06
Fortune Minerals Ltd.
NICO Project
Golder Associates
Block Model NSR and Golder Geochem Samples
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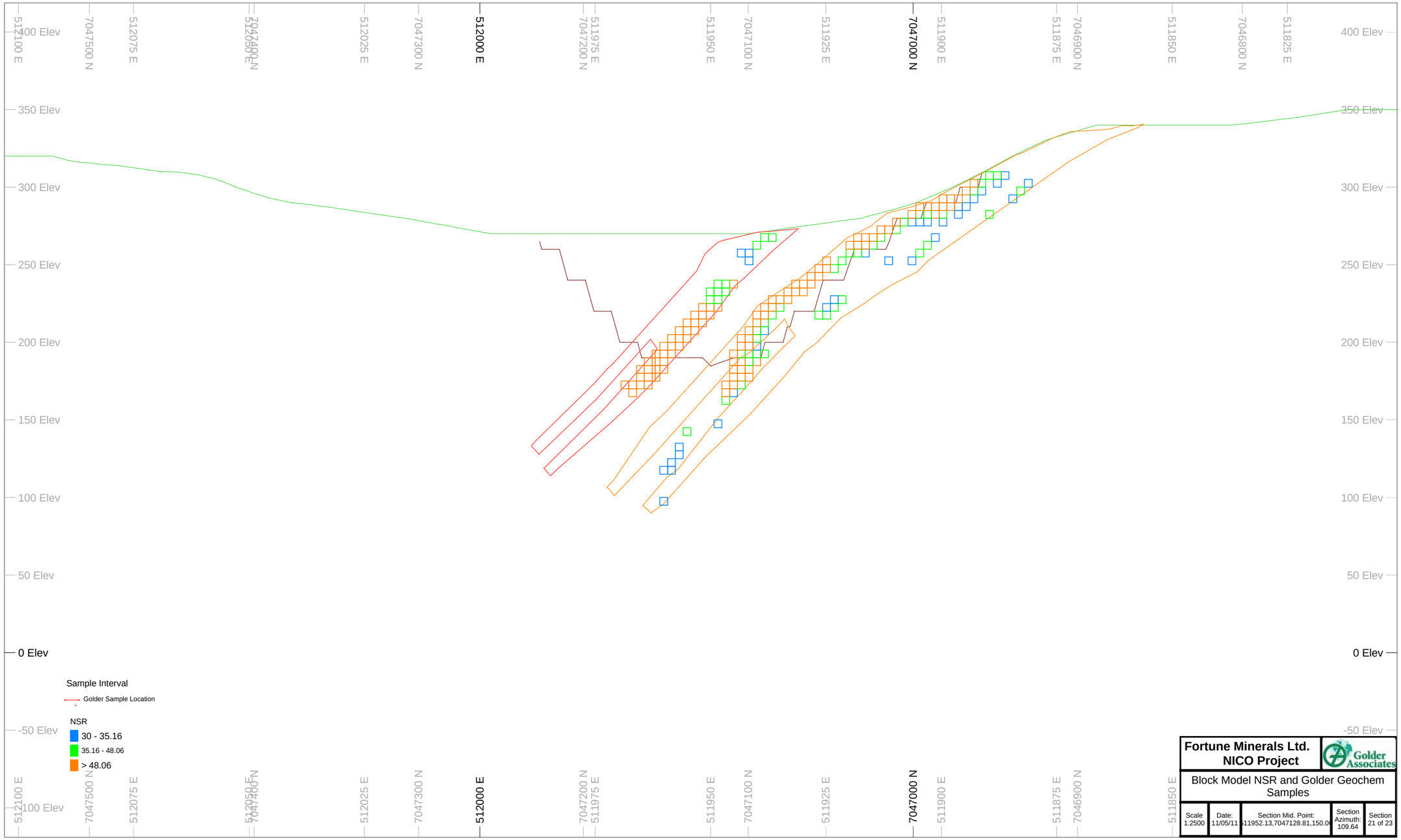
Section 20 of 23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0 Elev
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-100 Elev
Sample Interval
Golder Sample Location
NSR
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35.16 - 48.06
> 48.06
Fortune Minerals Ltd.
NICO Project
Golder Associates
Block Model NSR and Golder Geochem Samples
Scale 1:2500
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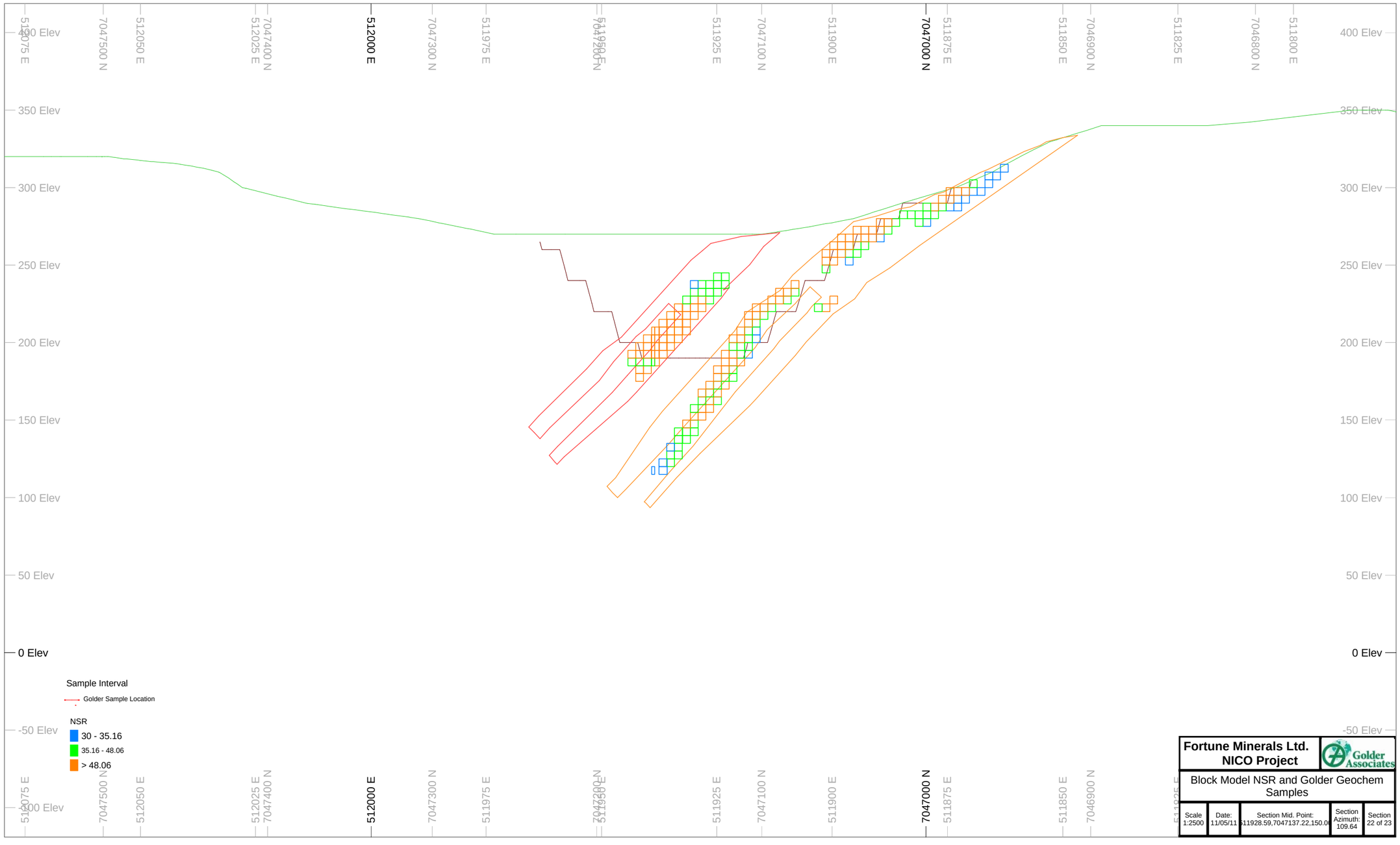
Section 21 of 23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-50 Elev
Sample Interval
Golder Sample Location
NSR
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> 48.06
Fortune Minerals Ltd.
NICO Project
Golder Associates
Block Model NSR and Golder Geochem Samples
Scale 1:2500
Date: 11/05/11
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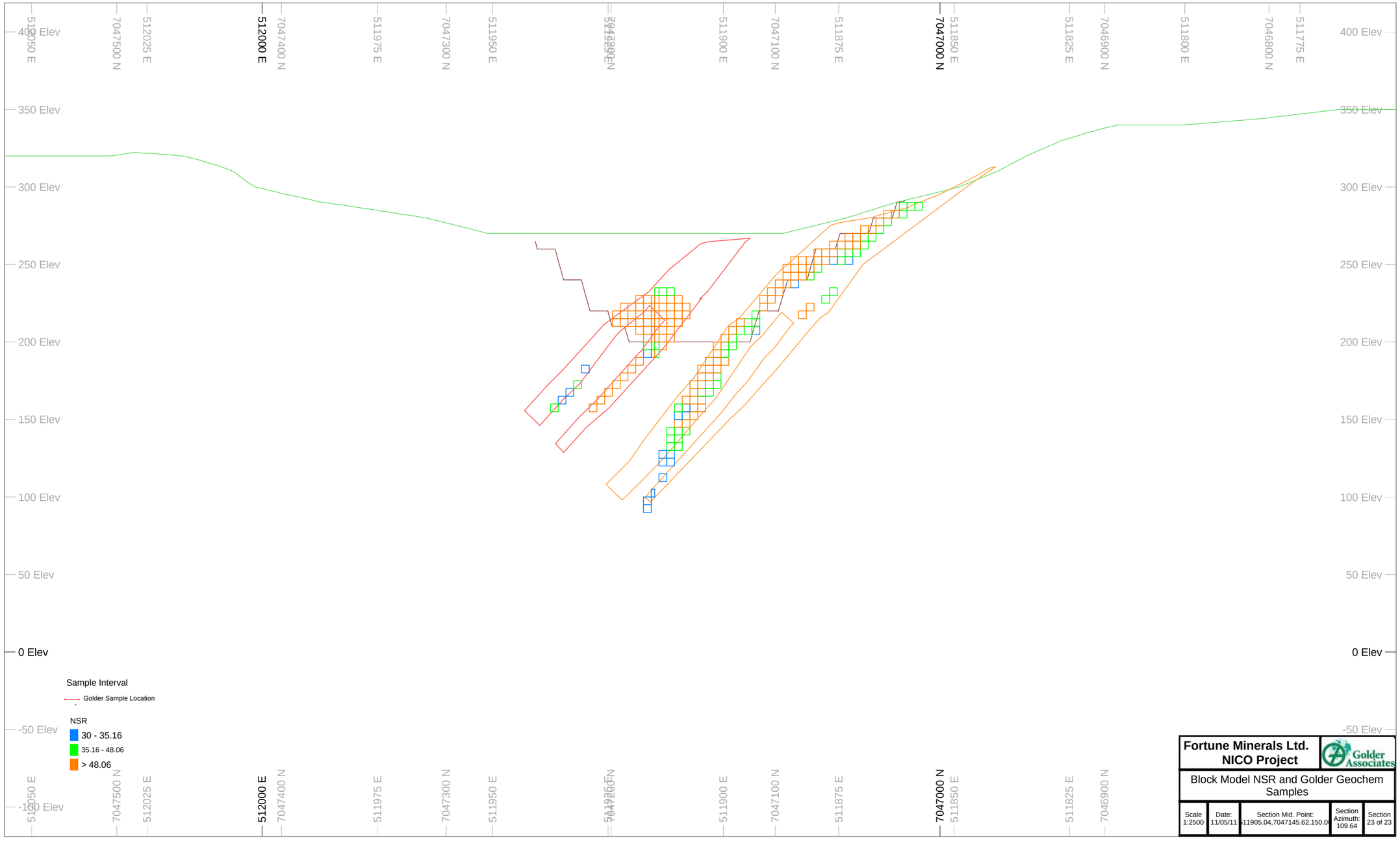
Section 22 of 23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Sample Interval
Golder Sample Location
NSR
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> 48.06
Fortune Minerals Ltd.
NICO Project
Golder Associates
Block Model NSR and Golder Geochem Samples
Scale 1:2500
Date: 11/05/11
Section Mid. Point: 511905.04,7047145.62,150.0
Section Azimuth: 109.64
Section 23 of 23

APPENDIX IV

Results of Laboratory Static Testing of Mine Rock, Ore, and Tailings Samples

May 2011
Report No. 08 1118 0043 (5000)

Golder Associates

Appendix IV-1a

Results of Mineralogical Analysis - Mineralized Waste Rock and Ore

NICO Project, Fortune Minerals Limited

		FC-1 Mineralized Waste Rock	FC-2 Mineralized Waste Rock	FC-3 Mineralized Waste Rock	FC-4 Mineralized Waste Rock	FC-5 Ore
		Oct 5 DS	Oct 9 NS	Mar 10 NS	Mar 8 NS	Aug 28 DS
		Feldspar Porphyry and Black Rock Schist (±magnetite)	Black Rock Schist (±magnetite)	Black Rock Schist (±magnetite)	Black Rock Schist (±magnetite)	Black Rock Schist (±magnetite)
Mineral	**Ideal Formula**	**Composition (%)**				
Ferrohornblende	$[(Ca,Na)_{2-3}(Fe,Mg,Al)_5Si_8O_{22}(OH,F)_2]$	4.3	24.6	29.5	59.6	12.9
Ferrohornblende, sodian	$[(Na,K)Ca_2(Fe,Mg)_5(Al,Si)_8O_{22}(OH,F)_2]$	-	-	-	18.4	-
Tremolite	$[Ca_2Mg_5Si_8O_{22}(OH)_2]$	-	4	12	-	-
Actinolite	$[Ca_2(Mg,Fe)_5Si_8O_{22}(OH)_2]$	-	-	-	-	54.4
Omphacite	$[(Ca,Na)(Mg,Fe^{2+},Al)Si_2O_6]$	9	14.4	2.8	2.1	-
Clinochlore	$[(Mg,Fe^{+2})_5Al(Si_3Al)O_{10}(OH)_8]$	1.6	-	-	-	-
Kaolinite	$[Al_2Si_2O_5(OH)_4]$	-	-	1.9	-	-
Diopside	$[MgCaSi_2O_8]$	2.2	13.2	4.4	-	-
Microcline	$[KAlSi_3O_8]$	34.9	18.1	7.3	-	2.2
Orthoclase	$[KAlSi_3O_8]$	-	-	-	8.2	-
Albite	$[NaAlSi_3O_8]$	12.2	3.4	2.8	-	2.3
Quartz	$[SiO_2]$	12	7.7	3	3.4	2.5
Biotite	$[K(Mg,Fe)_3AlSi_3O_{10}(OH,F)_2]$	9.8	4.8	8.4	3	6.5
Siderophyllite	$[KFe^{2+}Al(Al_2Si_2)O_{10}(F,OH)_2]$	10.7	5.2	13.9	2.2	6.9
Forsterite	$[Mg_2SiO_4]$	-	-	6.7	-	-
Ilmenite	$[FeTiO_3]$	1.1	1.4	0.7	0.9	0.8
Magnetite	$[Fe_3O_4]$	2.2	3.3	6.5	2.1	2.9
Aresenopyrite	[FeAsS]	-	-	-	-	6.5
Pyrite	$[FeS_2]$	-	-	-	-	2

"-" indicates that the mineral is not present in the sample.

Notes:

- XRD cannot identify amorphous phases, and therefore semi-crystalline precipitate minerals may not be fully represented by the results of XRD.

- Diffraction peak overlap between minerals can cause peaks to be exaggerated, obscured or misidentified.
- Trace concentrations of minerals are difficult to identify due to the limitations of the analytical method: as a rule-of-thumb, the minimum detection limit for XRD is approximately 1%.

Appendix IV-1b

Results of Mineralogical Analysis - Tailings
NICO Project, Fortune Minerals Limited

		Tailings		
		Bulk Rougher Tails	**Bulk Cleaner Tails**	**PP#14**
Mineral	**Ideal Formula**	**Composition (%)**		
Quartz	SiO_2	4.3	3.3	4.0
Biotite	$K(Mg,Fe2+)_3AlSi_3O_{10}(OH)_2$	14.8	22.0	14.1
Clinochlore	$(Mg,Fe^{2+})_5Al(Si_3Al)O_{10}(OH)_8$	2.6	5.6	2.7
K-feldspar	$KAlSi_3O_8$	-	-	-
Kaolinite	$Al_2Si_2O_5(OH)_4$	-	-	-
Gypsum	$CaSO_4 \cdot 2H_2O$	-	-	-
Calcite	$CaCO_3$	1.6	2.2	1.7
Magnetite	Fe_3O_4	8.1	4.3	8.5
Actinolite	$Ca_2(Mg,Fe^{2+})_5Si_8O_{22}(OH)_2$	59.0	54.2	60.6
Diopside	$CaMgSi_2O_6$	8.2	5.7	6.5
Claudetite	As_2O_3	1.4	1.3	1.9
Barite	$BaSO_4$	-	1.5	-
TOTAL		100.0	100.0	100.0

"-" indicates that the mineral is not present in the sample.

Notes:

- XRD cannot identify amorphous phases, and therefore semi-crystalline precipitate minerals may not be fully represented by the results of XRD.
- Diffraction peak overlap between minerals can cause peaks to be exaggerated, obscured or misidentified.
- Trace concentrations of minerals are difficult to identify due to the limitations of the analytical method: as a rule-of-thumb, the minimum detection limit for XRD is approximately 1%.

Appendix IV-2b

Solid Phase Analysis - Bulk Sample Stockpile Samples

NICO Project, Fortune Minerals Ltd.

Sample ID	Pile ID	Depth	Waste / Ore[1]	Dominant Lithology[2]	Ag mg/kg	Al mg/kg	As mg/kg	Ba mg/kg	Be mg/kg	Bi mg/kg	Ca mg/kg	Cd mg/kg	Co mg/kg	Cr mg/kg	Cu mg/kg	Fe mg/kg	K mg/kg	Li mg/kg	Mg mg/kg	Mn mg/kg	Mo mg/kg	Na mg/kg	Ni mg/kg	Pb mg/kg	Sb mg/kg	Se mg/kg	Sn mg/kg	Sr mg/kg	Ti mg/kg	Tl mg/kg	U mg/kg	V mg/kg	Y mg/kg	Zn mg/kg
Aug 18 NS-1	Aug 18 NS	0 - 1m	ore	BRS±mt	0.15	43000	2700	220	2.80	68	68000	0.15	960	49	160	180000	33000	10	24000	2300	16	4800	30	10	12	2	11	13	2400	0.50	15	47	24	37
Aug 18 NS-2	Aug 18 NS	1 - 2m	ore	BRS±mt	0.16	45000	3100	250	2.60	92	64000	0.10	1400	52	230	180000	34000	11	22000	2200	11	5200	34	11	12	3	11	15	2500	0.56	12	48	23	29
Aug 18 NS-3	Aug 18 NS	4m	ore	BRS±mt	0.16	46000	4500	290	2.80	190	60000	0.14	1800	53	270	180000	31000	11	22000	2000	13	6000	51	15	15	4	11	17	2500	0.57	14	49	24	26
Aug 20 NS-1	Aug 20 NS	0 m (Surface)	ore	BRS±mt	0.20	57000	880	500	2.60	89	39000	0.09	330	60	98	130000	42000	7	20000	1200	11	12000	22	8	8	2	7	30	2500	0.44	13	51	19	15
Aug 20 NS-2	Aug 20 NS	0 - 1m	ore	BRS±mt	0.28	46000	1400	250	2.60	370	53000	0.10	500	55	130	160000	33000	7	22000	1600	24	7500	24	10	17	2	10	13	2500	0.53	12	46	22	16
Aug 20 NS-3	Aug 20 NS	1 - 2m	ore	BRS±mt	0.29	45000	3100	270	2.40	210	60000	0.12	1200	55	120	160000	30000	8	24000	1900	27	6600	36	10	13	3	10	14	2400	0.52	17	43	23	19
Aug 20 NS-4	Aug 20 NS	4m	ore	BRS±mt	0.20	42000	2200	240	2.40	130	56000	0.07	680	52	110	150000	26000	7	24000	1700	12	7100	30	11	14	2	10	12	2300	0.50	22	42	23	25
Aug 21 NS-1	Aug 21 NS	0 m (Surface)	ore	BRS±mt	0.26	36000	38000	120	2.40	300	61000	0.10	2300	49	210	210000	20000	5	26000	1800	7	5900	26	9	35	5	9	11	2100	0.35	15	37	19	17
Aug 21 NS-2	Aug 21 NS	0 - 1m	ore	BRS±mt	0.26	38000	1800	95	2.40	690	59000	0.08	730	53	160	190000	19000	6	24000	1800	9	9700	29	11	30	3	9	13	2100	0.36	8	35	20	17
Aug 21 NS-3	Aug 21 NS	2 - 3m	ore	BRS±mt	0.23	39000	1100	130	2.40	210	56000	0.10	460	97	120	170000	21000	6	23000	1700	13	10000	23	6	16	3	9	12	2100	0.29	8	36	20	18
Aug 21 NS-4	Aug 21 NS	4m	ore	BRS±mt	0.21	39000	1800	160	2.40	180	56000	0.12	570	53	62	170000	23000	6	23000	1700	13	9100	32	11	16	3	9	12	2200	0.35	8	39	23	19
Aug 23 DS-1	Aug 23 DS	0 m (Surface)	ore	BRS±mt	0.26	49000	780	450	2.40	530	40000	0.14	260	51	58	140000	33000	6	18000	1200	6	12000	19	13	18	3	7	23	1700	0.38	7	32	15	24
Aug 23 DS-2	Aug 23 DS	0 - 1m	ore	BRS±mt	0.20	41000	1000	300	2.60	480	47000	0.06	340	50	73	150000	27000	6	20000	1400	5	9400	23	9	19	3	8	16	1700	0.34	10	30	17	17
Aug 23 DS-3	Aug 23 DS	1 - 3m	ore	BRS±mt	0.29	36000	1300	240	2.80	820	50000	0.08	570	51	95	180000	26000	7	22000	1500	5	6400	33	7	24	4	8	14	1800	0.41	8	34	17	17
Aug 23 DS-4	Aug 23 DS	4m	ore	BRS±mt	0.38	37000	1500	190	2.60	1800	50000	0.08	550	48	76	180000	25000	8	22000	1500	4	6600	33	8	35	7	8	13	1800	0.47	8	33	17	15
Aug 24 DS-1	Aug 24 DS	0 - 1m	ore	BRS±mt	0.21	39000	3600	210	2.80	320	50000	0.05	1300	50	82	190000	27000	7	21000	1400	9	6800	39	7	22	3	9	15	1900	0.48	12	37	20	26
Aug 24 DS-2	Aug 24 DS	1 - 3m	ore	BRS±mt	0.29	37000	3900	160	3.60	750	50000	0.07	1800	45	96	220000	27000	8	23000	1600	22	5500	56	12	26	4	9	12	2000	0.63	21	35	20	17
Aug 24 DS-3	Aug 24 DS	4m	ore	BRS±mt	0.34	38000	3500	170	3.60	730	48000	0.06	1600	45	160	210000	28000	8	23000	1500	13	6500	48	11	24	5	9	14	2000	0.62	18	35	19	20
Aug 27 DS-1	Aug 27 DS	0 m (Surface)	ore	BRS±mt	0.63	33000	6000	83	3.80	6300	53000	0.09	450	32	390	230000	24000	8	22000	1600	20	3800	12	6	70	9	11	7	2100	0.65	8	35	19	20
Aug 27 DS-2	Aug 27 DS	0 - 1m	ore	BRS±mt	0.27	35000	22000	100	2.40	310	64000	0.07	1600	35	210	210000	19000	5	23000	1700	7	6300	21	5	29	5	12	7	2000	0.20	8	36	19	15
Aug 27 DS-3	Aug 27 DS	2 - 3m	ore	BRS±mt	0.26	39000	10000	130	2.40	270	68000	0.04	1200	38	180	210000	22000	5	27000	1800	10	7300	28	7	20	3	12	14	2200	0.31	10	41	20	18
Aug 27 DS-4	Aug 27 DS	4m	ore	BRS±mt	0.29	35000	18000	86	2.20	260	67000	0.11	2400	33	260	210000	19000	5	25000	1800	5	5800	46	10	29	5	11	9	2100	0.29	13	37	21	18
Aug 28 DS-1	Aug 28 DS	0 - 1m	ore	BRS±mt	0.28	34000	23000	95	2.20	250	64000	0.09	2300	33	260	210000	19000	5	24000	1800	10	5600	33	7	33	5	10	8	2100	0.29	8	36	19	19
Aug 28 DS-2	Aug 28 DS	1 - 2m	ore	BRS±mt	0.33	31000	34000	95	2.20	450	58000	0.13	1900	32	180	210000	19000	6	24000	1700	7	5000	23	9	35	4	10	7	2000	0.34	13	33	20	16
Aug 28 DS-3	Aug 28 DS	2 - 3m	ore	BRS±mt	0.30	30000	37000	77	2.00	340	60000	0.09	2200	31	210	200000	18000	6	25000	1800	9	4800	27	10	39	5	9	7	2000	0.35	15	34	19	17
Aug 28 DS-4	Aug 28 DS	4m	ore	BRS±mt	0.31	34000	41000	100	2.00	410	60000	0.09	2600	36	220	210000	20000	7	26000	1800	15	5500	28	10	42	4	9	8	2100	0.33	17	35	20	19
FC-5	Aug 28 DS	–	ore	BRS±mt	0.18	32000	33000	110	2.60	380	53000	0.07	1900	39	200	210000	22000	6	26000	1700	7	4700	24	9	33	4	8	8	1900	0.39	11	33	18	15
Oct 10 NS-1	Oct 10 NS	0 m (Surface)	ore	BRS±mt	0.24	58000	570	620	2.20	920	38000	0.19	100	33	60	110000	45000	10	17000	1200	16	14000	16	9	13	2	7	25	2000	0.51	13	31	21	12
Oct 10 NS-2	Oct 10 NS	1 - 2m	ore	BRS±mt	0.29	47000	4700	370	2.20	2200	54000	0.18	1000	35	220	160000	36000	14	22000	1700	24	7400	49	12	29	7	11	19	2200	0.52	17	38	23	33
Oct 10 NS-3	Oct 10 NS	2 - 3m	ore	BRS±mt	0.21	45000	3000	330	2.40	1600	61000	0.13	1100	41	190	170000	35000	14	24000	2000	14	6800	45	11	20	4	10	17	2300	0.56	14	38	23	22
Oct 10 NS-4	Oct 10 NS	3 - 4m	ore	BRS±mt	0.21	47000	1800	360	2.40	1500	59000	0.11	660	35	210	160000	37000	12	23000	1900	11	7600	35	9	22	5	10	20	2200	0.50	13	39	23	18
Oct 11 DS-1	Oct 11 DS	0 m (Surface)	ore	BRS±mt	0.18	60000	340	680	2.40	610	36000	0.16	72	43	67	120000	49000	10	20000	1200	14	13000	22	6	11	1	8	33	2500	0.59	11	50	22	11
Oct 11 DS-2	Oct 11 DS	0 - 1m	ore	BRS±mt	0.22	52000	380	490	2.20	930	54000	0.13	72	35	130	150000	43000	13	26000	1900	19	8100	16	11	15	2	11	24	2100	0.62	23	38	25	23
Oct 11 DS-3	Oct 11 DS	1 - 2m	ore	BRS±mt	0.19	47000	270	360	2.20	940	58000	0.11	69	39	230	170000	36000	12	27000	2000	11	7100	17	12	16	2	12	20	2200	0.65	21	42	25	23
Oct 11 DS-4	Oct 11 DS	4m	ore	BRS±mt	0.23	54000	370	510	2.20	780	48000	0.16	77	34	220	150000	42000	13	25000	1700	24	9900	17	12	15	2	10	31	2300	0.70	20	44	23	36
Oct 12 DS-1	Oct 12 DS	0 m (Surface)	ore	BRS±mt	0.36	34000	16000	140	3.30	2500	64000	0.14	1500	34	420	220000	27000	12	31000	2800	12	3700	38	13	47	10	10	11	2200	0.68	17	37	25	27
Oct 12 DS-2	Oct 12 DS	0 - 1m	ore	BRS±mt	0.33	40000	4000	250	3.20	2100	65000	0.12	400	38	380	200000	32000	13	29000	2600	5	5300	20	13	29	6	10	15	2200	0.59	17	39	24	26
Oct 12 DS-3	Oct 12 DS	1 - 2m	ore	BRS±mt	0.27	39000	3400	210	3.20	1900	59000	0.12	350	37	360	200000	31000	12	28000	2500	9	5200	21	14	25	5	11	15	2300	0.73	19	42	24	26
Oct 12 DS-4	Oct 12 DS	3 - 4m	ore	BRS±mt	0.28	42000	3100	260	2.80	1800	57000	0.16	330	39	320	180000	34000	13	26000	2300	8	6200	26	11	26	4	11	17	2200	0.68	14	42	25	22
Oct 9 DS-1	Oct 9 DS	0 - 1m	ore	BRS±mt	0.38	41000	290	300	2.00	3600	46000	0.19	67	40	100	150000	35000	8	20000	1400	16	6200	31	14	37	12	9	13	2200	0.58	8	32	22	31
Oct 9 DS-2	Oct 9 DS	2 - 3m	ore	BRS±mt	0.41	41000	420	300	2.40	4000	50000	0.22	100	41	160	160000	33000	8	22000	1500	14	6300	35	21	44	11	10	14	2100	0.46	10	37	22	45
Oct 9 DS-3	Oct 9 DS	4m	ore	BRS±mt	0.66	37000	290	190	2.40	4400	52000	0.27	50	32	110	170000	25000	7	22000	1600	14	5800	31	14	51	13	11	11	2000	0.57	9	33	21	33
Minimum					0.15	30000	270	77	2.00	68	36000	0.04	50	31	58	110000	18000	5	17000	1200	4	3700	12	5	8	1	7	7	1700	0.20	7	30	15	11
Maximum					0.66	60000	41000	680	3.80	6300	68000	0.27	2600	97	420	230000	49000	14	31000	2800	27	14000	56	21	70	13	12	33	2500	0.73	23	51	25	45
Average					0.28	41429	8074	250	2.56	1112	55119	0.12	949	44	181	179048	29214	9	23500	1762	12	7107	30	10	26	4	10	15	2143	0.49	13	38	21	22
Standard Deviation					0.10	7302	12007	150	0.43	1346	8073	0.05	775	12	95	29118	8005	3	2796	363	6	2398	10	3	13	3	1	6	210	0.14	5	5	3	7
FC-2	Oct 9 NS	–	sub-economic mineralized mine rock	BRS±mt	0.49	36000	580	270	2.20	4900	49000	0.14	99	75	170	130000	29000	7	19000	1500	13	5800	40	9	41	9	8	16	1700	0.34	8	30	19	23
FC-3	Mar 10 NS	–	sub-economic mineralized mine rock	BRS±mt	0.34	33000	5400	130	2.80	2600	42000	0.09	1300	46	140	190000	26000	14	42000	1300	7	3000	28	7	47	4	8	10	2000	0.59	6	35	16	16
FC-4	Mar 8 NS	–	sub-economic mineralized mine rock	BRS±mt	0.42	32000	4300	56	3.40	2200	59000	0.06	560	46	840	210000	19000	6	24000	1600	4	4300	14	12	35	4	13	5	2100	0.38	6	36	20	20
Mar 10 NS-1	Mar 10 NS	0 m (Surface)	sub-economic mineralized mine rock	BRS±mt	0.57	31000	4100	71	2.40	2300	45000	0.23	1400	34	210	220000	30000	20	53000	1300	9	2300	24	9	41	3	7	7	2200	0.82	7	36	16	23
Mar 10 NS-2	Mar 10 NS	1 - 2m	sub-economic mineralized mine rock	BRS±mt	0.52	31000	7600	110	2.40	2700	46000	0.12	2100	32	250	220000	28000	16	44000	1400	10	3400	34	8	49	4	8	9	2200	0.69	7	37	16	21
Mar 10 NS-3	Mar 10 NS	2 - 3m	sub-economic mineralized mine rock	BRS±mt	0.46	21000	6800	110	2.40	2400	44000	0.13	1800	33	230	210000	27000	17	38000	1300	12	3200	32	7	46	5	8	9	2200	0.65	6	36	15	20
Mar 10 NS-4	Mar 10 NS	4m	sub-economic mineralized mine rock	BRS±mt	0.54	28000	4600	140	2.20	2400	46000	0.17	1000	36	370	200000	25000	15	37000	1300	8	3500	23	7	42	4	9	9	2100	0.64	7	36	17	20
Mar 6 NS-1	Mar 6 NS	0 m (Surface)	sub-economic mineralized mine rock	BRS±mt	0.55	33000	5100	56	3.20	2300	60000	0.09	640	35	880	210000	19000	7	24000	1700	5	4600	14	6	40	4	13	6	2200	0.42	6	36	21	22
Mar 6 NS-2	Mar 6 NS	0 - 1m	sub-economic mineralized mine rock	BRS±mt	0.78	31000	8200	61	3.60	6100	57000	0.08	830	33	1000	230000	20000	8	22000	1600	18	4400	18	7	74	10	13	6	2100	0.40	10	36	21	23
Mar 6 NS-3	Mar 6 NS	1 - 2m	sub-economic mineralized mine rock	BRS±mt	0.65	33000	8200	72	4.00	6000	52000	0.08	670	30	340	240000	23000	8	23000	1500	23	4000	14	5	74	9	12	6	2100	0.54	6	36	19	18
Mar 6 NS-4	Mar 6 NS	4m	sub-economic mineralized mine rock	BRS±mt	0.67	34000	9000	81	4.00	6700	55000	0.10	640	35	250	240000	24000	8	24000	1700	19	4100	12	6	78	11	12	7	2100	0.55	8	36	20	18
Mar 8 NS-1	Mar 8 NS	0 m (Surface)	sub-economic mineralized mine rock	BRS±mt	0.46	34000	4900	180	2.40	2100	43000	0.12	1200	31	190	210000	32000	16	42000	1300	8	4300	24	7	39	4	8	12	2300	0.63	7	41	16	18
Mar 8 NS-2	Mar 8 NS	0 - 1m	sub-economic mineralized mine rock	BRS±mt	0.59	35000	6200	71	3.20	3300	62000	0.08	650	36	870	220000	21000	7	25000	1700	8	4700	13	6	47	6	13	6	2300	0.47	7	38	22	24
Mar 8 NS-3	Mar 8 NS	1 - 2m	sub-economic mineralized mine rock	BRS±mt	0.65	33000	3900	57	3.20	2900	63000	0.10	520	37	1200	220000	19000	7	25000	1700	3	4700	14	5	43	5	13	6	2300	0.41	7	38	22	26
Mar 8 NS-4	Mar 8 NS	4m	sub-economic mineralized mine rock	BRS±mt	0.61	34000	6300	61	3.40	3100	63000	0.11	850	32	1100	230000	20000	6	25000	1700	7	4700	16	6	47	5	13	6	2300	0.40	7	38	21	26
Oct 9 NS-1	Oct 9 NS	0 m (Surface)	sub-economic mineralized mine rock	BRS±mt	0.62	33000	340	210	2.00	6600	58000	0.12	250	28	380	150000	29000	8	23000	1800	17	4600	36	5	52	12	8	10	1700	0.42	7	30	20	20
Oct 9 NS-2	Oct 9 NS	0 - 1m	sub-economic mineralized mine rock	BRS±mt	0.57	32000	730	200	1.80	7200	60000	0.09	100	38	150	140000	28000	7	23000	1800	16	4200	40	8	49	11	9	10	1700	0.41	7	29	21	15
Oct 9 NS-3	Oct 9 NS	2 - 4m	sub-economic mineralized mine rock	BRS±mt	0.53	40000	460	300	1.80	5200	55000	0.16	80	30	170	140000	35000	8	22000	1600	16	6500	34	7	43	8	8	17	1900	0.45	7	34	19	17
Oct 9 NS-4	Oct 9 NS	4m	sub-economic mineralized mine rock	BRS±mt	0.57	37000	440	270	2.00	6000	57000	0.11	97	37	270	140000	31000	7	22000	1700	16	5700	33	8	47	10	9	15	1900	0.41	9	32	21	16
Minimum					0.34	21000	340	56	1.80	2100	42000	0.06	80	28	140	130000	19000	6	19000	1300	3	2300	12	5	35	3	7	5	1700	0.34	6	29	15	15
Maximum					0.78	40000	9000	300	4.00	7200	63000	0.23	2100	75	1200	240000	35000	20	53000	1800	23	6500	40	12	78	12	13	17	2300	0.82	10	41	22	26
Average					0.56	32684	4587	132	2.76	4053	53474	0.11	778	37	474	197368	25526	10	29316	1553	12	4316	24	7	49	7	10	9	2074	0.51	7	35	19	20
Standard Deviation					0.10	3816	2888	82	0.72	1868	7291	0.04	578	10	368	37393	4937	5	9889	184	6	1006	10	2	12	3	2	4	205	0.13	1	3	2	3
FC-1	Oct 5 DS	–	sub-economic mineralized mine rock	FP	0.16	67000	1200	860	2.40	320	16000	0.22	69	71	17	87000	64000	14	12000	420	7	13000	16	8	6	1	7	41	2600	0.51	8	53	19	14
Oct 5 DS-1	Oct 5 DS	0 m (Surface)	sub-economic mineralized mine rock	FP	0.18	65000	1800	830	2.40	380	28000	0.16	85	42	13	120000	51000	13	15000	700	12	11000	14	7	8	1	9	40	2700	0.57	10	56	22	11
Oct 5 DS-2	Oct 5 DS	0 - 2m	sub-economic mineralized mine rock	FP	0.18	72000	2900	930	2.20	360	19000	0.19	120	35	41	90000	51000	15	13000	510	7	13000	15	10	7	1	7	47	3000	0.59	9	61	20	12
Oct 5 DS-3	Oct 5 DS	2 - 4m	sub-economic mineralized mine rock	FP	0.16	63000	3300	810	2.40	300	22000	0.18	120	40	22	100000	49000	12	13000	540	6	11000	14	10	7	2	9	36	2700	0.55	8	57	21	12
Minimum					0.16	63000	1200	810	2.20	300	16000	0.16	69	35	13	87000	49000	12	12000	420	6	11000	14	7	6	1	7	36	2600	0.51	8	53	19	11
Maximum					0.18	72000	3300	930	2.40	380	28000	0.22	120	71	41	120000	64000	15	15000	700	12	13000	16	10	8	2	9	47	3000	0.59	10	61	22	14
Average					0.17	66750	2300	858	2.35	340	21250	0.19	99	47	23	99250	53750	14	13250	543	8	12000	15	9	7	1	8	41	2750	0.56	9	57	21	12
Standard Deviation					0.01	3862	970	53	0.10	37	5123	0.03	26	16	12	14908	6898	1	1258	117	3	1155	1	1	1	0	1	5	173	0.03	1	3	1	1

1. Sample classified as "waste" or "ore" according to average assay grades of each pile (as provided by Fortune) and August 2008 cut-off criterion.
2. Lithology based on dominant visible lithology in field. Rock may be diluted with minor proportions of other lithologies of waste rock.

Appendix IV-2a

Solid Phase Analysis - Drill Core and Outcrop Samples

NICO Project, Fortune Minerals Ltd.

Sample Number[1]	Hole	Depth From	Depth To	Lithology	Block Model Code[2]	Waste Rock / Ore[3]	Ag mg/kg	Al mg/kg	As mg/kg	Ba mg/kg	Be mg/kg	Bi mg/kg	Ca mg/kg	Cd mg/kg	Co mg/kg	Cr mg/kg	Cu mg/kg	Fe mg/kg	K mg/kg	Li mg/kg	Mg mg/kg	Mn mg/kg
100855	03257	47	49	Breccia	300	WASTE	0.3	63000	59	930	1.9	120	1800	***0.3***	60	6	28	57000	61000	27	9400	250
100861	03258	17	26	Breccia	300	WASTE	0.3	53000	500	860	1.0	180	2100	***0.1***	70	11	13	49000	51000	18	11000	310
100861-Follow Up	03258	17	26	Breccia	300	WASTE		56000	370	1100	0.9	69	2600	***0.2***	58	180	13	53500	62000	9	10000	310
100874	03259	54	61	Breccia	400	WASTE	0.2	48000	32	510	1.7	160	8400	***0.1***	20	12	5	78000	53000	11	14000	360
100902	00249	4	20	Breccia		WASTE	0.1	56000	1600	860	0.7	170	2900	***0.1***	80	28	7	74000	50000	23	9200	280
100902-Follow Up	00249	4	20	Breccia	0	WASTE		84000	1600	1700	0.8	3	3000	***0.2***	77	47	9	78900	98000	9	10000	280
100916	98151	13	20	Breccia	300	WASTE	0.1	75000	2400	1200	1.3	70	1900	***0.1***	170	6	39	18000	93000	15	4300	320
100917	98151	20	28	Breccia	300	WASTE	0.1	68000	75	1100	1.1	70	2300	***0.1***	10	18	6	25000	95000	16	4600	180
100917-Follow Up	98151	20	28	Breccia	300	WASTE		74000	53	1300	1.0	14	2600	***0.2***	11	120	6	29800	75000	10	5000	180
100925	00233	0	9	Breccia	300	WASTE	0.1	64000	200	650	2.8	140	1300	***0.1***	70	17	66	62000	77000	16	14000	730
100934	00252	27	33	Breccia	400	WASTE	0.1	62000	2500	690	0.7	150	600	***0.1***	900	10	590	68000	84000	4	11000	170
100945	03264	46	53	Breccia	400	WASTE	0.1	67000	100	1300	1.9	140	1800	***0.1***	7	63	3	58000	102000	7	10000	110
Minimum							0.1	48000	32	510	0.7	3	600	0.1	7	6	3	18000	50000	4	4300	110
Maximum							0.1	84000	2500	1700	2.8	180	8400	0.3	900	180	590	78900	102000	27	14000	730
Average							0.1	64167	791	1017	1.3	107	2608	0.1	128	43	65	54267	75083	14	9375	290
Standard Deviation							0.1	10250	957	334	0.6	60	1947	0.1	247	54	166	20512	19346	7	3261	158
100814	98419	0	6	BRS+mt			0.2	28000	700	47	2.4	470	20800	***0.1***	40	31	8	160000	29000	30	22000	460
100817	98208	76	86	BRS+mt	400	WASTE	0.1	30000	200	48	1.6	360	29000	***0.1***	20	15	22	140000	28000	25	48000	920
100818	98208	86	100	BRS+mt	400	WASTE	0.1	29000	3900	36	1.8	620	12000	***0.1***	160	28	30	230000	31000	27	43000	550
100818-Follow Up	98208	86	100	BRS+mt	400	WASTE		21000	7600	38	2.3	110	22000	***0.2***	150	43	20	228000	35000	17	46000	740
100875	03259	96	111	BRS+mt	400	WASTE	0.2	24000	100	46	2.2	420	32000	***0.1***	80	22	39	180000	23000	9	28000	860
100875-Follow Up	03259	96	111	BRS+mt	400	WASTE		31000	310	59	3.0	30	48000	***0.2***	120	48	20	215000	28000	19	36000	1200
100890	00220	32	50	BRS+mt			0.2	43000	1700	430	1.5	360	17000	***0.1***	150	41	48	140000	31000	37	39000	700
100909	96016	27	42	BRS+mt	400	WASTE	0.1	39000	700	140	1.9	290	23000	***0.1***	20	23	18	150000	35000	24	63000	640
100923	98150	45	55	BRS+mt	400	WASTE	0.1	35000	55	54	1.8	440	17000	***0.1***	20	21	2	210000	50000	19	61000	550
100924	98150	55	65	BRS+mt	400	WASTE	0.2	42000	300	340	1.5	350	11000	***0.2***	10	20	820	170000	58000	20	55000	360
100930	00233	111	114	BRS+mt	400	WASTE	0.1	54000	1500	72	5.9	810	25000	***0.1***	110	39	29	400000	49000	17	40000	1300
100937	00252	184	193	BRS+mt	400	WASTE	0.1	33000	100	240	2.3	340	31000	***0.1***	20	20	150	140000	37000	18	52000	850
100949	96023	17	30	BRS+mt	400	WASTE	0.1	27000	74	26	2.4	590	32000	***0.1***	30	20	1	200000	42000	17	63000	710
100950	96023	30	46	BRS+mt	0	0	0.1	30000	2000	77	2.3	520	37000	***0.1***	90	26	180	190000	44000	11	39000	620
100961	98147	3	12	BRS+mt	400	WASTE	0.1	31000	1400	60	1.8	270	11000	***0.1***	40	20	6	110000	42000	17	34000	350
100962	98147	12	21	BRS+mt	400	WASTE	0.1	46000	2300	230	3.3	580	9400	***0.1***	180	36	12	230000	67000	9	24000	320
100962-Follow Up	98147	12	21	BRS+mt	400	WASTE		31000	1000	36	3.1	290	15000	***0.2***	26	45	4	228000	40000	14	55000	440
100963	98147	46	61	BRS+mt	15	ORE	0.1	66000	23	490	1.8	140	2300	***0.2***	8	55	2	70000	42000	12	13700	170
100963-Follow Up	98147	46	61	BRS+mt	15	ORE		49000	3600	300	4.1	51	12000	***0.2***	190	66	11	214000	52000	14	25000	390
100976	96011	131	145	BRS+mt	400	WASTE	0.1	36000	700	180	1.1	270	7700	***0.1***	50	23	190	150000	35000	4	44000	330
100977	96011	145	160	BRS+mt	400	WASTE	0.2	33000	1100	160	0.9	240	13000	***0.1***	40	26	110	110000	30000	14	35000	620
100978	96011	160	170	BRS+mt	400	WASTE	0.4	37000	500	180	1.2	400	26000	***0.1***	40	26	230	170000	31000	8	47000	1200
100979	96011	270	290	BRS+mt			0.3	36000	2700	51	2.1	660	40000	***0.1***	510	37	470	280000	17000	14	21000	1300
100983	97035	57	68	BRS+mt	400	WASTE	0.1	28000	2800	140	1.5	570	18000	***0.1***	250	27	95	115000	26000	28	39000	660
100983-Follow Up	97035	57	68	BRS+mt	400	WASTE		28000	2800	190	1.7	290	28000	***0.2***	220	110	130	105000	31000	12	36000	620
100990	97036	216	225	BRS+mt	400	WASTE	0.1	35000	33	87	1.8	430	42000	***0.1***	20	30	3	150000	22000	18	16000	1100
100994-Follow Up	00230	68	73	BRS+mt	400	WASTE		41000	220	320	2.3	21	45000	***0.2***	36	49	10	161000	41000	11	36000	1400
100995	00230	150	170	BRS+mt			***0.5***	23000	2200	36	2.9	3900	39000	***0.1***	1000	15	390	200000	16000	***6***	20000	850
100995-Follow Up	00230	150	170	BRS+mt				29000	5400	48	4.5	5100	53000	***0.2***	1000	45	370	232000	19000	***3***	27000	1300
100911	96016	138	158	BRS+mt			***0.1***	38000	300	42	3.9	610	65000	***0.1***	100	30	6	260000	29000	***9***	30000	1300
100912	96016	158	190	BRS+mt			***0.5***	34000	13500	100	3.9	1900	46000	***0.1***	1630	32	1480	220000	32000	***24***	20000	1500
100912-Follow Up	96016	158	190	BRS+mt				36000	20000	90	3.4	930	49000	***0.2***	1700	64	850	208000	27000	***7***	21000	1400
Fortune Minerals Preliminary Samples	03-275	37	74	Middle Ore Zone			0.4	32000	12000	110	3.5	1600	36000	***0.2***	1900	31	780	240000	26000	12	28000	960
Fortune Minerals Preliminary Samples	03-275	120	157	Lower Ore Zone			0.5	35000	6500	220	4.0	870	38000	***0.2***	850	32	77	270000	25000	14	18000	920
100994	00230	68	73	BRS+mt	400	WASTE	0.1	32000	200	150	1.4	360	35000	***0.1***	40	29	11	150000	35000	26	31000	1100
Minimum							0.1	21000	23	26	0.9	21	2300	0.1	8	15	1	70000	16000	3	13700	170
Maximum							0.5	66000	20000	490	5.9	5100	65000	0.2	1900	110	1480	400000	67000	37	63000	1500
Average							0.2	34914	2815	139	2.5	720	28206	0.1	310	35	189	189314	34429	16	35877	820
Standard Deviation							0.1	8893	4389	119	1.1	1030	14965	0.0	517	18	327	62650	11366	8	13827	372

100802	00231	73	83	BRS+mt	400	WASTE	0.1	36000	41	150	2.5	450	17000	***0.1***	10	33	36	140000	33000	33	67000	660
100803-Follow Up	00231	83	94	BRS+mt	400	WASTE		29000	220	150	2.2	89	39000	***0.2***	11	71	260	130000	32000	12	59000	900
100803	00231	83	94	BRS+mt	400	WASTE	0.2	28000	55	110	1.9	360	24000	***0.1***	10	26	93	120000	28000	16	46000	660
100805	00236	38	48	BRS+mt	400	WASTE	0.1	32000	5	41	1.4	360	15000	***0.1***	9	17	3	160000	31000	18	46000	550
100806	00236	48	60	BRS+mt	400	WASTE	0.1	32000	200	78	2.0	350	13000	***0.1***	50	16	3	160000	34000	15	45000	430
100812	03265	145	155	BRS+mt	500	WASTE	0.2	55000	5	650	1.1	160	6200	***0.1***	10	54	4	66000	35000	31	14000	290
100815	98208	0	5	BRS+mt	400	WASTE	0.2	42000	12	580	1.5	180	15000	***0.1***	5	9	25	95000	41000	11	63000	430
100866	03258	136	138	BRS+mt	500	WASTE	0.1	28000	87	170	4.5	750	9200	***0.1***	40	39	12	260000	28000	21	17000	340
100866-Follow Up	03258	136	138	BRS+mt	500	WASTE		35000	290	180	4.2	5	11000	***0.2***	30	70	9	301000	35000	13	19000	360
100884	98198	20	30	BRS+mt	400	WASTE	0.1	27000	41	290	2.5	320	22000	***0.1***	40	36	12	109000	23000	27	31000	1020
100885	98198	30	41	BRS+mt	400	WASTE	0.2	37000	600	130	2.0	410	53000	***0.1***	160	26	24	190000	21000	31	28700	1400
100887	98198	95	110	BRS+mt	400	WASTE	0.1	30000	29	160	1.3	290	31000	***0.1***	20	17	4	150000	25000	12	47700	680
100887-Follow Up	98198	95	110	BRS+mt	400	WASTE		32000	62	160	1.6	39	38000	***0.2***	30	73	8	146000	29000	8	53000	860
100889	00220	25	32	BRS+mt	400	WASTE	0.2	49000	800	93	2.1	280	15000	***0.1***	940	9	32	120000	24000	35	25000	860
100900	97072	20	37	BRS+mt			0.3	62000	100	1100	0.4	130	5600	***0.1***	20	24	110	59000	69000	23	8400	390
100901	97072	55	80	BRS+mt			0.1	25000	600	120	2.2	290	18000	***0.1***	40	22	160	110000	20000	28	32000	530
100901-Follow Up	97072	55	80	BRS+mt				32000	500	150	2.9	7	30000	***0.2***	37	61	140	147000	37000	24	49000	790
100905	00249	62	72	BRS+mt	400	WASTE	0.2	33000	5600	81	2.4	520	21000	***0.1***	340	16	53	190000	32000	35	56000	640
100907	00249	82	90	BRS+mt	400	WASTE	0.3	40000	5100	94	2.2	900	25000	***0.1***	300	28	200	250000	35000	32	36000	900
100918	98151	31	41	BRS+mt	400	WASTE	0.1	37000	2000	84	3.1	510	22000	***0.1***	130	14	140	170000	34000	31	37000	530
100919	98151	41	57	BRS+mt			0.1	25000	1300	74	3.1	750	20000	***0.1***	50	31	11	200000	36000	34	57000	610
100920	98151	74	79	BRS+mt	400	WASTE	0.1	43000	300	250	2.6	430	50000	***0.1***	170	29	410	170000	53000	20	30000	1300
100927	00233	45	55	BRS+mt	400	WASTE	0.1	34000	70	110	2.6	350	39000	***0.1***	10	22	5	140000	40000	24	65000	690
100928-Follow Up	00233	58	67	BRS+mt	400	WASTE		13000	4700	23	1.9	94	8900	***0.2***	62	38	79	207000	34000	16	68000	340
100928	00233	58	67	BRS+mt	400	WASTE	0.1	33000	3200	23	2.2	740	7100	***0.1***	130	29	130	250000	45000	28	95000	280
100935	00252	97	107	BRS+mt	400	WASTE	0.1	33000	300	55	2.1	330	36000	***0.1***	20	22	22	170000	38000	11	68000	910
100936	00252	107	127	BRS+mt			0.2	41000	400	140	1.8	350	39000	***0.1***	30	21	220	180000	44000	15	47000	1200
100938	00234	1.5	9	BRS+mt	400	WASTE	0.1	42000	100	200	1.7	350	13000	***0.1***	10	31	3	160000	58000	19	39000	540
100939	00234	61	77	BRS+mt			0.1	32000	200	190	2.0	390	17000	***0.1***	10	23	5	150000	46000	26	57000	490
100947	97102	57	77	BRS+mt			0.1	36000	500	140	1.4	550	26000	***0.1***	20	32	1	130000	57000	13	46000	620
100948	97102	67	78	BRS+mt	400	WASTE	0.1	42000	100	150	1.8	340	34000	***0.1***	10	22	91	140000	50000	16	65000	540
100953	98197	45	50	BRS+mt	400	WASTE	0.1	26000	600	120	2.2	520	40000	***0.1***	180	20	8	200000	32000	11	32000	1100
100958	98209	47	60	BRS+mt	400	WASTE	0.1	30000	87	41	1.3	370	34000	***0.1***	8	21	49	190000	37000	4	79000	570
100959	98209	60	70	BRS+mt	400	WASTE	0.1	40000	95	87	1.6	380	44000	***0.1***	10	19	65	220000	50	4	32800	720
100965	03267	2	10	BRS+mt	400	WASTE	0.1	38000	48	62	1.9	450	18000	***0.1***	30	27	43	220000	25000	36	89000	670
100966	03267	10	18	BRS+mt	400	WASTE	0.1	55000	100	180	1.6	480	9700	***0.2***	20	32	12	230000	43000	35	75000	480
100967	03270	30	39	BRS+mt	400	WASTE	0.1	41000	79	150	1.5	410	24200	***0.1***	8	24	5	180000	36000	26	78000	760
100968-Follow Up	03270	39	47	BRS+mt	400	WASTE		35000	190	200	1.6	18	20000	***0.2***	15	71	94	140000	36000	9	48000	560
100968	03270	39	47	BRS+mt	400	WASTE	0.1	36000	91	120	1.5	370	8000	***0.1***	9	28	83	150000	30000	22	43000	470
100969	03270	91	100	BRS+mt	400	WASTE	0.1	73000	7	250	5.7	470	4900	***0.1***	20	64	69	240000	74000	44	62000	430
100970-Follow Up	97060	11	30	BRS+mt	400	WASTE		19000	490	53	1.6	150	27000	***0.2***	31	56	23	165000	31000	10	49000	660
100970	97060	11	30	BRS+mt			0.1	37000	300	50	1.5	490	17000	***0.1***	20	23	95	220000	34000	29	70000	670
100989	97036	157	165	BRS+mt	400	WASTE	0.2	43000	12	190	0.6	290	24000	***0.1***	10	18	4	140000	43000	28	72000	530
100991	97036	225	230	BRS+mt	400	WASTE	0.3	24000	300	110	3.8	830	26000	***0.2***	70	35	64	220000	24000	27	16000	980
100998-Follow Up	00241	91	104	BRS+mt	400	WASTE		33000	180	130	2.1	77	40000	***0.2***	23	56	130	129000	37000	10	69000	850
100888	98198	110	130	BRS+mt			0.2	28000	200	72	3.2	550	32000	***0.1***	170	26	27	180000	19000	29	29000	1000
Fortune Minerals Preliminary Samples	03-272	21 83	81 96	Upper Ore Zone			***0.6***	26000	780	220	1.5	10	6400	***1.0***	38	23	110	72000	26000	***5***	19000	250
100998	00241	91	104	BRS+mt	400	WASTE	0.2	24000	85	110	1.5	350	25000	***0.1***	20	17	85	99000	31000	27	48000	690
Minimum							0.1	13000	5	23	0.4	5	4900	0.1	5	9	1	59000	50	4	8400	250
Maximum							0.6	73000	5600	1100	5.7	900	53000	1.0	940	73	410	301000	74000	44	95000	1400
Average							0.2	35479	649	168	2.1	360	23338	0.1	72	32	68	165938	35522	22	48492	669
Standard Deviation							0.1	10601	1298	180	1.0	216	12408	0.1	148	17	81	52222	12673	10	20580	265

Appendix IV-2a

Solid Phase Analysis - Drill Core and Outcrop Samples
NICO Project, Fortune Minerals Ltd.

Sample Number[1]	Hole	Depth From	Depth To	Lithology	Block Model Code[2]	Waste Rock / Ore[3]	Mo mg/kg	Na mg/kg	Ni mg/kg	P mg/kg	Pb mg/kg	Sb mg/kg	Se mg/kg	Sn mg/kg	Sr mg/kg	Ti mg/kg	Tl mg/kg	U mg/kg	V mg/kg	Y mg/kg	Zn mg/kg
100855	03257	47	49	Breccia	300	WASTE	4.3	1100	8.0	170	15.0	3.1	***5***	2	23	200	0.30	6.8	19	10	240
100861	03258	17	26	Breccia	300	WASTE	3.9	3000	6.0	330	2.3	2.3	***5***	4	19	1700	0.60	3.3	55	7	23
100861-Follow Up	03258	17	26	Breccia	300	WASTE	1.4	3100	10.0		3.9	3.9	***0.7***	5	18	2400	0.66	4.1	57	8	21
100874	03259	54	61	Breccia	400	WASTE	2.8	2800	13.0	270	2.4	2.6	***5***	7	15	1600	0.70	3.9	50	10	13
100902	00249	4	20	Breccia		WASTE	2.5	2200	12.0	780	2.4	2.2	***5***	6	17	2200	0.90	2.7	64	10	22
100902-Follow Up	00249	4	20	Breccia	0	WASTE	1.4	4100	16.0		2.0	3.6	***0.7***	6	26	2500	0.96	3.6	64	10	10
100916	98151	13	20	Breccia	300	WASTE	2.9	14000	7.0	210	5.0	4.7	***5***	1	24	200	0.20	8.2	8	20	44
100917	98151	20	28	Breccia	300	WASTE	3.4	10000	6.0	190	4.6	2.8	***5***	3	23	800	0.20	6.4	18	8	14
100917-Follow Up	98151	20	28	Breccia	300	WASTE	1.3	10000	7.8		5.6	3.6	***0.7***	4	23	1100	0.36	7.8	18	10	7
100925	00233	0	9	Breccia	300	WASTE	3.9	6000	10.0	220	2.8	2.5	***5***	3	14	600	0.30	5.2	23	20	66
100934	00252	27	33	Breccia	400	WASTE	16.0	900	10.0	140	2.2	3.5	***5***	8	11	600	0.50	9.9	12	6	16
100945	03264	46	53	Breccia	400	WASTE	0.8	8300	22.0	400	2.8	1.6	***5***	4	33	3800	0.70	3.0	79	10	20
Minimum							0.8	900	6.0	140	2.0	1.6	0.7	1	11	200	0.20	2.7	8	6	7
Maximum							16.0	14000	22.0	780	15.0	4.7	5.0	8	33	3800	0.96	9.9	79	20	240
Average							3.7	5458	10.7	301	4.3	3.0	3.9	4	21	1475	0.53	5.4	39	11	41
Standard Deviation							4.0	4194	4.6	197	3.6	0.9	1.9	2	6	1099	0.26	2.4	25	5	65
100814	98419	0	6	BRS+mt			1.3	700	7.0	260	10.0	4.4	***5.0***	7	9	2200	1.10	2.7	34	20	16
100817	98208	76	86	BRS+mt	400	WASTE	3.0	1300	7.0	190	1.5	11.0	***5.0***	5	5	1400	0.70	1.4	23	10	15
100818	98208	86	100	BRS+mt	400	WASTE	1.0	600	11.0	220	10.0	15.0	***5.0***	4	5	1600	0.80	1.6	28	6	15
100818-Follow Up	98208	86	100	BRS+mt	400	WASTE	1.0	780	22.0		3.8	13.0	***0.7***	5	2	2000	0.90	2.4	35	10	12
100875	03259	96	111	BRS+mt	400	WASTE	---	1500	19.0	170	10.0	12.0	***5.0***	9	10	1400	0.90	8.7	29	10	23
100875-Follow Up	03259	96	111	BRS+mt	400	WASTE	26.0	2100	29.0		5.3	9.6	***0.7***	10	11	2000	0.83	12.0	35	17	15
100890	00220	32	50	BRS+mt			2.2	5300	50.0	450	2.8	4.5	***5.0***	7	15	1800	0.80	2.3	49	10	23
100909	96016	27	42	BRS+mt	400	WASTE	1.1	1000	10.0	290	1.9	7.5	***5.0***	5	6	1700	0.80	1.8	31	10	20
100923	98150	45	55	BRS+mt	400	WASTE	1.5	2200	8.0	240	1.4	12.0	***5.0***	6	8	1800	0.80	2.1	33	9	19
100924	98150	55	65	BRS+mt	400	WASTE	0.7	1000	7.0	340	1.7	56.0	***5.0***	6	14	1800	0.80	2.5	29	10	41
100930	00233	111	114	BRS+mt	400	WASTE	0.4	2400	14.0	200	13.0	17.0	***5.0***	11	5	2300	0.90	2.9	48	30	16
100937	00252	184	193	BRS+mt	400	WASTE	0.8	3300	9.0	320	2.5	4.6	***5.0***	8	12	1900	0.50	2.1	28	10	24
100949	96023	17	30	BRS+mt	400	WASTE	1.5	1100	9.0	230	1.1	12.0	***5.0***	7	5	1900	0.80	1.7	31	9	24
100950	96023	30	46	BRS+mt	0	0	0.9	1300	6.0	270	12.0	19.0	***5.0***	7	9	2100	0.70	2.8	33	10	35
100961	98147	3	12	BRS+mt	400	WASTE	3.1	1400	6.0	250	1.5	3.3	***5.0***	9	6	1800	0.90	2.0	24	10	13
100962	98147	12	21	BRS+mt	400	WASTE	5.0	1400	8.0	250	14.0	15.0	***5.0***	14	8	2600	1.00	3.2	45	10	26
100962-Follow Up	98147	12	21	BRS+mt	400	WASTE	0.4	570	11.0		7.0	7.7	***0.7***	7	3	2100	1.20	3.2	37	12	10
100963	98147	46	61	BRS+mt	15	ORE	0.9	12000	26.0	420	4.1	2.7	***5.0***	7	29	2700	0.50	2.9	88	20	37
100963-Follow Up	98147	46	61	BRS+mt	15	ORE	5.8	1600	23.0		6.8	9.0	***0.7***	17	5	2600	1.30	4.7	55	16	15
100976	96011	131	145	BRS+mt	400	WASTE	2.6	500	9.0	180	2.1	10.0	***5.0***	3	6	900	0.60	1.4	23	7	16
100977	96011	145	160	BRS+mt	400	WASTE	2.8	900	26.0	230	1.8	4.2	***5.0***	5	7	1200	0.70	1.5	27	8	69
100978	96011	160	170	BRS+mt	400	WASTE	2.4	1600	13.0	250	2.2	14.0	***5.0***	6	6	1400	0.60	1.8	33	10	42
100979	96011	270	290	BRS+mt			2.7	5900	54.0	270	21.0	19.0	***5.0***	11	5	1700	0.30	7.8	41	20	300
100983	97035	57	68	BRS+mt	400	WASTE	8.7	1200	13.0	250	3.6	12.0	***5.0***	4	8	1300	0.50	2.2	33	10	47
100983-Follow Up	97035	57	68	BRS+mt	400	WASTE	9.1	1300	11.0		9.4	12.0	***0.7***	5	7	1400	0.55	2.7	27	11	12
100990	97036	216	225	BRS+mt	400	WASTE	21.0	5600	11.0	300	3.9	6.9	***5.0***	17	7	2200	0.50	10.0	51	20	13
100994-Follow Up	00230	68	73	BRS+mt	400	WASTE	0.5	2400	16.0		1.2	7.2	***0.7***	10	6	2500	0.79	2.4	46	12	15
100995	00230	150	170	BRS+mt			1.6	2800	9.0	220	4.0	22.0	***5.0***	11	3	1300	0.40	6.6	25	10	15
100995-Follow Up	00230	150	170	BRS+mt			1.5	4100	16.0		138.0	27.0	***6.0***	11	4	1700	0.47	8.6	35	15	15
100911	96016	138	158	BRS+mt			0.4	4200	7.0	200	1.5	10.0	***5.0***	16	4	2100	0.30	2.7	42	20	25
100912	96016	158	190	BRS+mt			4.4	4300	24.0	250	14.0	37.0	***5.0***	13	8	2100	0.40	3.1	45	20	37
100912-Follow Up	96016	158	190	BRS+mt			6.4	3500	31.0		26.0	25.0	3.7	13	5	1800	0.61	4.8	39	14	15
Fortune Minerals Preliminary Samples	03-275	37	74	Middle Ore Zone			8.4	1800	19.0	270	6.1	34.0	***10.0***	10	7	1800	1.00	3.7	34	16	28
Fortune Minerals Preliminary Samples	03-275	120	157	Lower Ore Zone			2.4	3700	19.0	220	3.2	23.0	***10.0***	13	7	1600	0.80	7.5	34	16	4
100994	00230	68	73	BRS+mt	400	WASTE	1.1	2100	12.0	420	0.6	4.4	***5.0***	9	5	2500	0.70	1.7	43	9	38
Minimum							0.4	500	6.0	170	0.6	2.7	0.7	3	2	900	0.30	1.4	23	6	4
Maximum							26.0	12000	54.0	450	138.0	56.0	10.0	17	29	2700	1.30	12.0	88	30	300
Average							3.9	2499	16.3	265	10.0	14.4	4.5	9	8	1863	0.73	3.8	37	13	31
Standard Deviation							5.6	2234	11.4	72	23.1	11.1	2.1	4	5	433	0.24	2.8	12	5	49

100802	00231	73	83	BRS±mt	400	WASTE	1.1	600	6.0	240	1.7	11.0	***5.0***	3	11	1900	0.70	1.5	34	9	16
100803-Follow Up	00231	83	94	BRS±mt	400	WASTE	0.2	1200	12.0		4.9	20.0	***0.7***	5	6	1800	0.69	2.2	33	15	15
100803	00231	83	94	BRS±mt	400	WASTE	1.2	900	6.0	180	2.8	18.0	***5.0***	4	6	1500	0.60	1.6	24	10	14
100805	00236	38	48	BRS±mt	400	WASTE	1.2	900	8.0	200	1.1	6.1	***5.0***	5	6	1400	0.80	1.8	25	9	15
100806	00236	48	60	BRS±mt	400	WASTE	0.6	700	7.0	220	1.7	4.8	***5.0***	5	8	1500	1.00	2.4	25	10	13
100812	03265	145	155	BRS±mt	500	WASTE	---	12000	27.0	540	1.5	1.7	***5.0***	4	59	2300	0.80	1.9	77	8	20
100815	98208	0	5	BRS±mt	400	WASTE	0.7	400	7.0	200	1.2	5.1	***5.0***	3	14	1400	0.70	2.0	20	9	10
100866	03258	136	138	BRS±mt	500	WASTE	2.8	2900	17.0	210	16.0	6.1	***5.0***	9	9	1800	0.80	4.5	54	10	28
100866-Follow Up	03258	136	138	BRS±mt	500	WASTE	3.8	2700	18.0		2.5	6.2	***0.7***	10	5	2000	0.78	5.6	50	10	8
100884	98198	20	30	BRS±mt	400	WASTE	4.9	2400	7.0	290	1.3	3.0	***5.0***	7	9	2100	0.50	1.9	42	10	20
100885	98198	30	41	BRS±mt	400	WASTE	9.6	4300	11.0	320	3.3	6.3	***5.0***	11	8	1700	0.40	3.0	37	10	25
100887	98198	95	110	BRS±mt	400	WASTE	2.4	3200	9.0	260	2.3	6.4	***5.0***	5	7	1200	0.50	2.1	22	8	10
100887-Follow Up	98198	95	110	BRS±mt	400	WASTE	1.4	4700	12.0		2.8	9.1	***0.7***	5	6	1600	0.55	2.6	27	10	15
100889	00220	25	32	BRS±mt	400	WASTE	5.9	14000	6.0	680	3.0	2.1	***5.0***	7	16	2300	0.70	1.9	100	10	35
100900	97072	20	37	BRS±mt			1.7	2400	6.0	890	4.3	1.9	***5.0***	6	21	2300	0.60	3.0	71	9	19
100901	97072	55	80	BRS±mt			1.6	1000	10.0	300	2.3	3.8	***5.0***	6	8	1300	0.90	2.5	25	10	22
100901-Follow Up	97072	55	80	BRS±mt			1.3	1500	13.0		1.4	6.2	***0.7***	7	7	1600	0.84	3.1	32	17	15
100905	00249	62	72	BRS±mt	400	WASTE	0.8	1100	12.0	290	1.4	9.4	***5.0***	5	8	1400	0.80	2.3	24	10	13
100907	00249	82	90	BRS±mt	400	WASTE	0.7	1700	10.0	370	3.4	18.0	***5.0***	10	5	2100	1.00	1.8	44	10	23
100918	98151	31	41	BRS±mt	400	WASTE	2.9	6400	15.0	290	2.7	12.0	***5.0***	12	11	2000	0.60	1.9	54	10	15
100919	98151	41	57	BRS±mt			0.8	900	8.0	290	12.0	18.0	***5.0***	5	7	2300	0.70	1.5	41	10	18
100920	98151	74	79	BRS±mt	400	WASTE	1.1	3600	15.0	280	3.1	4.1	***5.0***	12	11	2300	0.40	2.5	44	20	26
100927	00233	45	55	BRS±mt	400	WASTE	0.8	3300	6.0	270	1.3	10.0	***5.0***	8	12	2000	0.80	1.6	35	20	24
100928-Follow Up	00233	58	67	BRS±mt	400	WASTE	0.8	310	16.0		6.3	15.0	***0.8***	4	2	1900	0.83	2.0	34	9	15
100928	00233	58	67	BRS±mt	400	WASTE	1.8	400	14.0	270	13.0	32.0	***5.0***	3	5	1700	0.80	1.7	39	9	21
100935	00252	97	107	BRS±mt	400	WASTE	0.9	1200	5.0	180	6.0	16.0	***5.0***	6	8	1800	0.70	2.2	33	10	25
100936	00252	107	127	BRS±mt			1.9	1700	6.0	220	5.6	6.0	***5.0***	17	7	1800	0.70	2.9	35	9	21
100938	00234	1.5	9	BRS±mt	400	WASTE	0.9	800	5.0	280	1.1	2.7	***5.0***	9	7	2500	1.00	1.9	45	10	14
100939	00234	61	77	BRS±mt			2.2	1100	6.0	280	1.6	13.0	***5.0***	7	10	1800	0.80	2.1	30	10	24
100947	97102	57	77	BRS±mt			2.4	1200	11.0	290	1.5	6.0	***5.0***	7	8	2200	1.00	2.3	32	9	17
100948	97102	67	78	BRS±mt	400	WASTE	2.1	3400	7.0	420	2.4	11.0	***5.0***	6	14	2100	0.60	2.7	29	10	32
100953	98197	45	50	BRS±mt	400	WASTE	2.9	2400	35.0	220	18.0	12.0	***5.0***	7	7	1700	0.50	2.6	30	10	40
100958	98209	47	60	BRS±mt	400	WASTE	2.0	600	11.0	190	2.6	15.0	***5.0***	4	4	1500	0.60	1.6	28	8	34
100959	98209	60	70	BRS±mt	400	WASTE	1.2	1000	11.0	200	2.3	12.0	***5.0***	7	5	1700	0.60	3.2	28	10	16
100965	03267	2	10	BRS±mt	400	WASTE	5.2	2300	7.0	260	1.5	14.0	***5.0***	6	9	1200	0.50	1.3	31	10	31
100966	03267	10	18	BRS±mt	400	WASTE	1.3	1900	11.0	460	1.9	11.0	***5.0***	6	16	2000	1.00	2.5	47	20	46
100967	03270	30	39	BRS±mt	400	WASTE	1.2	1400	7.0	300	1.5	12.0	***5.0***	5	9	1500	0.70	1.4	35	10	33
100968-Follow Up	03270	39	47	BRS±mt	400	WASTE	0.7	880	14.0		11.0	15.0	***0.7***	5	7	1700	0.84	2.3	27	13	12
100968	03270	39	47	BRS±mt	400	WASTE	1.7	500	9.0	410	17.0	4.5	***5.0***	4	10	1500	0.80	1.5	31	10	27
100969	03270	91	100	BRS±mt	400	WASTE	11.0	1400	61.0	400	13.0	4.6	***5.0***	11	11	2700	1.50	12.0	81	40	23
100970-Follow Up	97060	11	30	BRS±mt	400	WASTE	0.9	1600	12.0		4.9	9.4	***0.7***	6	5	1600	0.83	2.0	31	11	13
100970	97060	11	30	BRS±mt			0.6	1400	14.0	280	1.3	6.0	***5.0***	5	8	1400	0.80	1.2	36	10	40
100989	97036	157	165	BRS±mt	400	WASTE	0.8	4300	11.0	420	0.6	5.8	***5.0***	3	23	2300	0.80	1.7	56	10	19
100991	97036	225	230	BRS±mt	400	WASTE	81.0	1900	15.0	300	23.0	20.0	***5.0***	13	12	1800	0.80	48.0	50	30	37
100998-Follow Up	00241	91	104	BRS±mt	400	WASTE	0.1	990	13.0		3.7	9.7	***0.7***	5	9	1900	0.84	1.9	33	14	15
100888	98198	110	130	BRS±mt			18.0	3400	9.0	320	17.0	9.4	***5.0***	10	7	1900	0.70	20.0	34	20	20
Fortune Minerals Preliminary Samples	03-272	21 83	81 96	Upper Ore Zone			4.3	630	11.0	180	1.5	3.4	***10.0***	2	9	1100	0.60	2.0	21	14	9
100998	00241	91	104	BRS±mt	400	WASTE	1.2	700	11.0	330	1.1	5.5	***5.0***	4	11	1800	0.80	1.4	33	10	25
Minimum							0.1	310	5.0	180	0.6	1.7	0.7	2	2	1100	0.40	1.2	20	8	8
Maximum							81.0	14000	61.0	890	23.0	32.0	10.0	17	59	2700	1.50	48.0	100	40	46
Average							4.1	2296	12.1	313	4.9	9.6	4.39	7	10	1810	0.75	3.7	39	12	21
Standard Deviation							11.8	2619	9.0	139	5.5	6.1	1.8	3	8	362	0.19	7.2	16	6	9

Appendix IV-2a

Solid Phase Analysis - Drill Core and Outcrop Samples

NICO Project, Fortune Minerals Ltd.

Sample Number[1]	Hole	Depth From	Depth To	Lithology	Block Model Code[2]	Waste Rock / Ore[3]	Ag mg/kg	Al mg/kg	As mg/kg	Ba mg/kg	Be mg/kg	Bi mg/kg	Ca mg/kg	Cd mg/kg	Co mg/kg	Cr mg/kg	Cu mg/kg	Fe mg/kg	K mg/kg	Li mg/kg	Mg mg/kg	Mn mg/kg
100868	03258	77	83	Fault Zone	400	WASTE	0.2	46000	80	830	1.2	110	58200	***0.1***	10	11	29	42000	51000	10	13000	750
100810	03265	69	79	Feldspar Porphyry	200	WASTE	0.2	57000	13	630	1.4	80	3900	0.1	10	15	600	29000	51000	16	5800	240
100810-Follow Up	03265	69	79	Feldspar Porphyry	200	WASTE		72000	19	920	1.4	30	4300	0.2	7	98	280	33000	71000	7	6600	220
100813	03265	79	89	Feldspar Porphyry	200	WASTE	0.2	52000	100	670	1.3	70	7100	0.1	70	10	47	22000	53000	20	6700	300
100856	03257	56	65	Feldspar Porphyry	300	WASTE	0.2	67000	100	970	0.4	20	2500	0.1	70	11	6	6000	80000	4	1700	100
100856-Follow Up	03257	56	65	Feldspar Porphyry	300	WASTE		64000	170	1100	0.4	3	3000	0.2	120	160	7	8000	82000	***2***	1800	120
100857	03257	65	79	Feldspar Porphyry	100	WASTE	0.2	65000	89	1200	1.6	60	1300	0.1	20	11	5	20000	62000	7	3900	140
100858	03257	105	109	Feldspar Porphyry	200	WASTE	0.3	84000	100	1200	1.4	70	6500	0.1	9	13	70	27000	59000	15	6200	240
100859	03257	110	114	Feldspar Porphyry	500	WASTE	0.2	70000	21	860	1.4	40	5300	0.1	4	10	8	15000	64000	6	4100	150
100867	03258	138	141	Feldspar Porphyry	200	WASTE	0.3	37000	10	690	1.1	60	2000	0.1	3	16	10	21000	35000	15	4400	140
100869	03259	3	11	Feldspar Porphyry	200	WASTE	0.1	33000	9	660	1.8	90	4400	0.1	20	15	26	23000	28000	26	12000	300
100869-Follow Up	03259	3	11	Feldspar Porphyry	200	WASTE		78000	9	1000	1.9	2	6100	0.2	12	150	19	44000	62000	16	13000	290
100870	03259	11	22	Feldspar Porphyry	200	WASTE	0.2	50000	12	820	1.8	100	3000	0.1	20	14	45	31000	51000	21	11000	240
100876	03259	111	113	Feldspar Porphyry	200	WASTE	0.3	66000	20	600	3.4	70	12000	0.1	8	57	8	29000	44000	19	10000	300
100891	00220	110	113	Feldspar Porphyry	200	WASTE	0.2	39000	36	350	2.0	70	7100	0.1	20	59	13	28000	21000	26	9600	270
100892	98152	0	15	Feldspar Porphyry	200	WASTE	0.2	57000	12	710	1.7	50	1800	0.1	4	11	45	20000	47000	21	4500	160
100892-Follow Up	98152	0	15	Feldspar Porphyry	200	WASTE		67000	19	830	1.7	3	1900	0.2	6	150	27	27000	68000	8	5000	180
100893	98152	15	30	Feldspar Porphyry	200	WASTE	0.2	53000	10	670	2.1	80	3300	0.1	5	11	34	31000	37000	22	6900	200
100894	98152	30	45	Feldspar Porphyry	200	WASTE	0.2	54000	15	720	1.4	70	7900	0.1	8	15	78	26000	54000	23	7200	330
100894-Follow Up	98152	30	45	Feldspar Porphyry	200	WASTE		71000	24	1200	1.5	33	8100	0.3	10	96	71	33000	80000	12	8900	350
100895	98152	45	60	Feldspar Porphyry	200	WASTE	0.4	16000	94	150	0.7	60	2900	0.1	4	19	72	25000	12000	22	6100	260
100896	98152	96	106	Feldspar Porphyry	200	WASTE	0.2	58000	76	660	2.1	60	5100	0.1	8	10	39	25000	47000	18	5000	220
100904	00249	31	36	Feldspar Porphyry	200	WASTE	0.3	44000	23	450	1.3	120	2500	0.1	4	23	4	50000	32000	25	10500	160
100904-Follow Up	00249	31	36	Feldspar Porphyry	200	WASTE		79000	14	1000	1.8	1	3600	0.2	3	98	5	52000	67000	11	12000	160
100908	00249	131	136	Feldspar Porphyry	200	WASTE	0.2	63000	28	690	1.3	60	4300	0.1	7	12	55	31000	61000	12	7000	210
100913	96016	205	209	Feldspar Porphyry	200	WASTE	0.2	91000	65	650	1.7	150	39000	0.1	30	29	51	63000	43000	31	23000	770
100921	98151	92	105	Feldspar Porphyry	200	WASTE	0.2	78000	37	960	1.5	70	12000	0.1	10	14	71	31000	107000	17	7600	380
100921-Follow Up	98151	92	105	Feldspar Porphyry	200	WASTE		69000	36	1000	1.2	2	12000	0.2	7	120	54	31000	74000	6	7600	340
100931	00233	115	121	Feldspar Porphyry	200	WASTE	0.2	66000	59	720	1.0	50	9800	0.1	10	11	49	26000	90000	4	6300	390
100954	98197	50	60	Feldspar Porphyry	200	WASTE	0.1	61000	10	900	2.0	120	6400	0.1	10	24	91	36000	75000	19	11000	250
100955	98197	60	70	Feldspar Porphyry	200	WASTE	0.1	66000	10	940	2.2	110	3800	0.1	10	37	110	43000	85000	23	11000	230
100955-Follow Up	98197	60	70	Feldspar Porphyry	200	WASTE		78000	15	1200	2.1	1	3600	0.3	10	120	62	49000	70000	19	14000	240
100956	98197	70	80	Feldspar Porphyry	200	WASTE	0.1	60000	5	740	1.9	100	5600	0.1	7	21	16	43000	77000	10	10000	210
100988	97036	151	157	Feldspar Porphyry	400	WASTE	0.2	94000	200	320	1.4	140	25000	0.1	20	10	19	89000	32000	17	27000	460
100988-Follow Up	97036	151	157	Feldspar Porphyry	400	WASTE		89000	240	600	1.5	8	33000	0.2	27	23	16	66000	35000	23	20000	530
NICO-08-013	03282	117.04	126.2	Feldspar Porphyry	100	WASTE	0.2	68000	310	1100	1.0	15	2600	0.2	24	120	150	30000	68000	9	4600	280
Fortune Minerals Preliminary Samples	03-275	86 104	103 114	Quartz Feldspar Porphyry	1 / 2	Middle / Lower	***0.6***	57000	3900	880	1.2	77	4200	***1.0***	130	9	240	30000	57000	***5***	5100	230
Fortune Minerals Preliminary Samples	03-376	3	106	Feldspar Porphyry	1	Waste / Middle	***0.6***	56000	25	790	1.4	21	5600	***1.0***	9	27	220	30000	52000	10	7400	260
100821	Outcrop			Portal			0.20	70000	***5***	520	1.9	110.00	3000	***0.10***	7.10	59	2	44000	46000	31	12000	90
100822	Outcrop			Portal			0.40	44000	***5***	570	1.0	60.00	2500	2.40	3.40	13	29	26000	43000	9	5300	120
100823	Outcrop			Portal			0.10	57000	***5***	350	1.5	110.00	2600	***0.10***	6.30	42	4	47000	34000	16	12000	360
100824	Outcrop			Portal			0.20	67000	***5***	610	1.7	90.00	2400	***0.10***	5.00	46	2	45000	61000	27	11000	230
NICO-08-007	Outcrop			Feldspar porphyry			0.30	72000	0	1300	1.0	0.80	1900	0.26	1.50	76	3	27000	72000	8	6600	150
NICO-08-010	Outcrop			Feldspar porphyry			0.21	71000	0	860	2.2	0.51	4000	0.19	7.60	94	1	43000	53000	14	11000	200
Minimum							0.1	16000	0	150	0.4	1	1300	0.1	2	9	1	6000	12000	2	1700	90
Maximum							0.6	94000	3900	1300	3.4	150	39000	2.4	130	160	600	89000	107000	31	27000	770
Average							0.2	63023	138	785	1.5	59	6719	0.2	18	46	64	33837	56791	16	8893	256
Standard Deviation							0.1	15513	591	263	0.5	42	7768	0.4	28	46	105	15244	19798	8	5089	124
100852	03257	13	23	Rhyolite	300	WASTE	0.2	50000	200	720	0.6	60	2600	0.1	120	12	39	8000	57000	4	2200	120
100852-Follow Up	03257	13	23	Rhyolite	300	WASTE		64000	190	1000	0.7	20	3000	0.2	140	270	41	11000	76000	2	2400	140
100853	03257	23	33	Rhyolite	20	ORE	0.3	66000	100	980	0.6	80	1800	0.1	30	9	42	8000	74000	10	2300	90
100854	03257	33	43	Rhyolite	20	ORE	0.2	64000	900	920	0.5	40	1100	0.1	70	9	21	8000	74000	4	2000	94
100860	03258	3	16	Rhyolite	300	WASTE	0.2	65000	100	890	0.7	30	600	0.1	40	11	22	11000	71000	8	2800	120
100860-Follow Up	03258	3	16	Rhyolite	300	WASTE		64000	80	990	0.6	2	610	0.1	31	220	17	13000	77000	3	2900	120
100862	03258	27	35	Rhyolite	20	ORE	0.2	61000	1100	870	0.5	30	3000	0.1	420	13	8	9000	69000	4	2700	140
100863	03258	35	50	Rhyolite	300	WASTE	0.2	58000	200	900	0.4	20	2400	0.1	160	13	13	7000	65000	4	2000	140
100864	03258	50	65	Rhyolite	300	WASTE	0.2	48000	94	820	0.4	30	3200	0.1	70	7	16	9000	66000	10	2500	200
100865	03258	65	77	Rhyolite	300	WASTE	0.2	39000	32	840	0.4	20	2400	0.1	20	12	8	8000	45000	5	2300	110
100865-Follow Up	03258	65	77	Rhyolite	300	WASTE		64000	50	1100	0.4	9	2800	0.2	23	170	7	10000	80000	***2***	2600	120
100871	03259	22	33	Rhyolite	300	WASTE	0.2	51000	41	860	0.9	50	2100	0.1	30	9	63	17000	68000	15	4900	150
100871-Follow Up	03259	22	33	Rhyolite	300	WASTE		62000	35	1000	0.8	5	2200	0.1	28	170	48	21000	76000	7	5000	160
100872	03259	33	43	Rhyolite	300	WASTE	0.2	44000	36	920	0.5	30	3800	0.1	10	13	36	11000	57000	8	3000	160
100873	03259	44	54	Rhyolite	300	WASTE	0.3	43000	38	850	0.5	40	4000	0.1	20	5	36	10000	58000	11	3000	160
100878	002465	1	10	Rhyolite	300	WASTE	0.2	50000	20	800	0.4	30	800	0.1	10	7	19	11000	46000	7	2500	98
100878-Follow Up	002465	1	10	Rhyolite	300	WASTE		63000	26	1100	0.3	4	350	0.2	8	180	15	10000	82000	***2***	1900	79
100879	002465	10	20	Rhyolite	300	WASTE	0.2	39000	91	660	0.4	110	1900	0.1	30	9	120	9000	51000	4	2400	95
100880	002465	20	30	Rhyolite	300	WASTE	0.2	53000	700	850	0.4	40	1100	0.1	590	8	81	8000	71000	4	2000	79
100932	00252	3	13	Rhyolite	300	WASTE	0.1	68000	200	1000	0.8	70	500	0.1	30	14	400	18000	108000	4	2000	61
100933	00252	13	26	Rhyolite	300	WASTE	0.2	59000	3300	830	0.3	70	2100	0.1	200	6	2340	21000	89000	4	2700	61
100933-Follow Up	00252	13	26	Rhyolite	300	WASTE		58000	4100	1200	0.4	50	2800	0.1	190	170	2600	22000	75000	3	3500	89
100943	03264	27	37	Rhyolite	300	WASTE	0.1	59000	700	780	0.4	200	2200	0.1	90	11	58	11000	103000	4	1900	110
100944	03264	37	45	Rhyolite	300	WASTE	0.1	63000	2600	850	0.8	130	2300	0.1	120	13	65	19000	116000	4	3200	150
100951	98197	15	30	Rhyolite	300	WASTE	0.1	95000	400	900	0.4	50	44000	0.1	70	15	300	210000	150000	4	66000	85
100952	98197	0	15	Rhyolite	300	WASTE	0.1	130000	300	720	0.4	90	3400	0.1	60	8	180	78000	176000	4	2800	77
100952-Follow Up	98197	0	15	Rhyolite	300	WASTE		66000	290	1100	0.5	100	4600	0.2	59	210	230	9300	80000	4	3500	98
100971	96011	3	15	Rhyolite	300	WASTE	0.1	48000	700	940	1.3	240	5700	0.1	80	20	430	18000	52000	12	4200	220
100971-Follow Up	96011	3	15	Rhyolite	300	WASTE		62000	430	1300	1.1	130	5900	0.2	35	130	280	14000	78000	***2***	3000	170
100972	96011	15	30	Rhyolite	300	WASTE	0.1	50000	100	1100	2.6	30	2000	0.2	400	15	200	30000	66000	23	5000	120
100973	96011	30	45	Rhyolite	300	WASTE	0.1	53000	200	1070	1.8	60	900	0.1	20	13	140	23000	48000	18	4900	230
100974	96011	45	60	Rhyolite	300	WASTE	0.4	61000	200	1010	0.9	60	500	0.1	20	14	160	19000	56000	7	2900	140
100975	96011	60	85	Rhyolite			0.1	43000	1600	880	0.5	90	1200	0.2	80	11	560	15000	49000	14	2500	70
100980	97035	0	10	Rhyolite	300	WASTE	0.3	72000	900	970	0.4	680	300	0.1	130	12	130	12000	83000	4	2000	98
100980-Follow Up	97035	0	10	Rhyolite	300	WASTE		63000	680	1100	0.5	560	420	0.2	110	110	89	13000	80000	2	1900	100
100981	97035	10	20	Rhyolite	35	ORE	0.2	62000	8000	850	0.5	3060	500	0.1	940	8	53	28000	68000	6	4500	110
100981-Follow Up	97035	10	20	Rhyolite	35	ORE		59000	11000	1000	0.5	3400	640	0.1	910	190	39	27000	75000	3	4300	110
100982	97035	20	29	Rhyolite	30	ORE	0.2	61000	9700	910	0.5	320	1400	0.1	1700	23	99	29000	68000	6	5200	130
100985	97036	0	10	Rhyolite	300	WASTE	0.1	40000	2700	800	0.4	160	400	0.1	70	13	68	20000	46000	12	2200	90
100985-Follow Up	97036	0	10	Rhyolite	300	WASTE		63000	2100	1200	0.5	140	270	0.1	48	250	47	13000	82000	3	1700	72
100986	97036	10	26	Rhyolite			0.1	65000	7000	970	0.4	320	800	0.1	200	11	60	21000	73000	8	3400	120
100992	00230	1	17	Rhyolite			0.2	37000	1000	750	0.0	190	1000	0.1	50	10	320	12000	55000	11	1500	66
NICO-08-011	03282	4.3	13.4	Rhyolite	300	WASTE	0.1	60000	14	1100	0.4	15	670	0.1	19	150	130	12000	81000	4	2100	92
NICO-08-012	03282	31.7	41.3	Rhyolite	300	WASTE	0.2	71000	7	1300	0.4	27	1100	0.2	19	110	440	14000	94000	3	2100	110
Fortune Minerals Preliminary Samples	03-272	0.6	18	Rhyolite		Waste	***0.6***	58000	1900	960	0.5	40	1200	***1.0***	46	18	180	13000	61000	***5***	2900	110
NICO-08-001	Outcrop			Rhyolite			0.13	60000	28	1300	0.4	22.00	470	0.10	25.00	79	24	9300	67000	3	1500	130
NICO-08-002	Outcrop			Rhyolite			0.28	79000	13	1200	1.0	3.70	1100	0.21	11.00	74	38	37000	64000	7	6100	240
NICO-08-003	Outcrop			Rhyolite			0.21	28000	30	67	4.6	2.50	42000	0.12	32.00	50	2	160000	26000	55	53000	1000
NICO-08-004	Outcrop			Rhyolite			0.18	65000	60	1200	0.2	43.00	310	0.15	4.90	91	34	11000	82000	4	2000	84
NICO-08-005	Outcrop			Rhyolite			0.16	63000	24	1100	0.4	5.60	2000	0.11	14.00	130	260	22000	70000	6	4200	230
NICO-08-006	Outcrop			Rhyolite			0.13	65000	23	1200	0.4	3.80	830	0.13	9.20	140	22	9400	82000	4	2000	88
Minimum							0.1	28000	7	67	0.0	2	270	0.1	5	5	2	7000	26000	2	1500	61
Maximum							0.6	130000	11000	1300	4.6	3400	44000	1.0	1700	270	2600	210000	176000	55	66000	1000
Average							0.2	59490	1261	955	0.7	216	3397	0.1	150	64	208	22922	73843	7	5139	138
Standard Deviation							0.1	15198	2473	203	0.7	630	8197	0.1	298	78	480	35246	24631	8	11221	131

Appendix IV-2a

Solid Phase Analysis - Drill Core and Outcrop Samples

NICO Project, Fortune Minerals Ltd.

Sample Number[1]	Hole	Depth From	Depth To	Lithology	Block Model Code[2]	Waste Rock / Ore[3]	Mo mg/kg	Na mg/kg	Ni mg/kg	P mg/kg	Pb mg/kg	Sb mg/kg	Se mg/kg	Sn mg/kg	Sr mg/kg	Ti mg/kg	Tl mg/kg	U mg/kg	V mg/kg	Y mg/kg	Zn mg/kg
100868	03258	77	83	Fault Zone	400	WASTE	5.7	700	5.0	390	10.0	10.0	***5.0***	3	25	200	0.60	10.0	22	10	24
100810	03265	69	79	Feldspar Porphyry	200	WASTE	3.3	8000	7.0	300	3.9	3.3	***5***	4	18	1200	0.30	9.1	33	10	19
100810-Follow Up	03265	69	79	Feldspar Porphyry	200	WASTE	3.0	13000	12.0		4.9	4.8	***0.7***	4	20	2000	0.37	9.6	36	14	8
100811	03265	79	89	Feldspar Porphyry	200	WASTE	1.2	5300	6.0	300	4.3	3.6	***5***	3	22	900	0.20	9.2	30	10	12
100856	03257	56	65	Feldspar Porphyry	300	WASTE	4.0	2400	4.0	60	5.3	1.4	***5***	1	17	55	0.30	8.6	2	7	9
100856-Follow Up	03257	56	65	Feldspar Porphyry	300	WASTE	4.0	2400	5.7		4.4	2.1	***0.7***	2	17	330	0.36	9.3	2	8	8
100857	03257	65	79	Feldspar Porphyry	100	WASTE	3.6	9700	4.0	200	5.3	1.6	***5***	2	25	400	0.20	9.1	9	10	16
100858	03257	105	109	Feldspar Porphyry	200	WASTE	---	23000	15.0	280	16.0	3.2	***5***	3	27	800	0.20	26.0	14	20	260
100859	03257	110	114	Feldspar Porphyry	500	WASTE	4.9	11000	8.0	210	6.3	1.8	***5***	2	19	400	0.20	12.0	10	20	2
100867	03258	138	141	Feldspar Porphyry	200	WASTE	11.0	11000	6.0	260	4.1	2.4	***5***	2	17	600	0.20	12.0	7	10	6
100869	03259	3	11	Feldspar Porphyry	200	WASTE	2.6	8700	10.0	460	2.9	1.1	***5***	4	60	2100	0.40	4.6	69	20	20
100869-Follow Up	03259	3	11	Feldspar Porphyry	200	WASTE	0.8	15000	18.0		3.7	1.9	***0.7***	4	89	3200	0.55	5.8	64	16	18
100870	03259	11	22	Feldspar Porphyry	200	WASTE	2.6	6300	8.0	390	2.8	1.6	***5***	3	46	1400	0.40	6.3	58	20	20
100876	03259	111	113	Feldspar Porphyry	200	WASTE	5.7	16000	23.0	460	6.8	5.9	***5***	5	160	2400	0.20	9.4	53	20	15
100891	00220	110	113	Feldspar Porphyry	200	WASTE	3.4	8800	15.0	650	10.0	3.1	***5***	4	99	2100	0.20	8.8	51	20	15
100892	98152	0	15	Feldspar Porphyry	200	WASTE	3.4	9200	6.0	360	5.6	2.1	***5***	3	20	800	0.30	12.0	26	10	6
100892-Follow Up	98152	0	15	Feldspar Porphyry	200	WASTE	1.9	9800	11.0		5.6	2.5	***0.7***	4	22	1500	0.36	12.0	28	14	7
100893	98152	15	30	Feldspar Porphyry	200	WASTE	3.0	8600	9.0	460	5.2	2.4	***5***	5	25	1600	0.40	9.8	43	10	27
100894	98152	30	45	Feldspar Porphyry	200	WASTE	2.0	3200	10.0	430	6.2	3.6	***5***	5	20	700	0.30	9.4	34	20	10
100894-Follow Up	98152	30	45	Feldspar Porphyry	200	WASTE	2.9	3400	13.0		7.7	5.1	***0.7***	4	25	2100	0.51	10.0	38	19	13
100895	98152	45	60	Feldspar Porphyry	200	WASTE	2.6	1000	9.0	400	32.0	2.4	***5***	3	6	800	0.20	8.9	33	10	14
100896	98152	96	106	Feldspar Porphyry	200	WASTE	4.5	14000	4.0	300	13.0	4.2	***5***	3	16	600	0.20	11.0	7	20	20
100904	00249	31	36	Feldspar Porphyry	200	WASTE	3.0	6500	10.0	590	2.9	1.7	***5***	4	21	2800	0.60	5.5	73	20	19
100904-Follow Up	00249	31	36	Feldspar Porphyry	200	WASTE	1.2	17000	18.0		2.5	2.7	***0.7***	4	35	3200	0.61	6.4	70	18	8
100908	00249	131	136	Feldspar Porphyry	200	WASTE	3.7	5000	7.0	330	4.5	4.1	***5***	2	20	600	0.30	10.0	28	10	8
100913	96016	205	209	Feldspar Porphyry	200	WASTE	1.8	23000	6.0	750	11.0	10.0	***5***	4	220	5800	0.30	2.4	170	20	38
100921	98151	92	105	Feldspar Porphyry	200	WASTE	4.5	8400	7.0	310	13.0	2.7	***5***	4	30	1500	0.40	11.0	37	20	18
100921-Follow Up	98151	92	105	Feldspar Porphyry	200	WASTE	1.0	7400	11.0		11.0	2.8	***0.7***	3	27	1700	0.53	13.0	31	17	11
100931	00233	115	121	Feldspar Porphyry	200	WASTE	3.7	5500	8.0	220	8.9	3.6	***5***	6	24	1100	0.20	10.0	25	20	19
100954	98197	50	60	Feldspar Porphyry	200	WASTE	3.1	12000	8.0	470	6.8	1.8	***5***	4	79	2800	0.60	6.9	60	20	37
100955	98197	60	70	Feldspar Porphyry	200	WASTE	2.8	7800	9.0	440	3.4	1.7	***5***	4	53	1900	0.60	6.0	58	10	28
100955-Follow Up	98197	60	70	Feldspar Porphyry	200	WASTE	0.7	7900	35.0		4.0	2.1	***0.7***	4	54	3400	0.63	6.7	66	15	19
100956	98197	70	80	Feldspar Porphyry	200	WASTE	2.8	8400	8.0	430	3.7	1.4	***5***	4	57	2500	0.50	6.8	61	20	28
100988	97036	151	157	Feldspar Porphyry	400	WASTE	1.2	30000	7.0	560	3.8	10.0	***5***	4	140	3500	0.50	2.3	130	20	22
100988-Follow Up	97036	151	157	Feldspar Porphyry	400	WASTE	0.9	27000	16.0		4.1	14.0	***0.7***	4	210	5200	0.51	2.5	150	22	15
NICO-08-013	03282	117.04	126.2	Feldspar Porphyry	100	WASTE	4.3	15000	2.3		8.3	3.0	***0.7***	2	26	900	0.34	12.0	7	14	20
Fortune Minerals Preliminary Samples	03-275	86 104	103 114	Quartz Feldspar Porphyry	1 / 2	Middle / Lower	4.2	6600	10.0	230	6.1	4.5	***10.0***	***2***	17	610	***0.40***	11.0	7	15	11
Fortune Minerals Preliminary Samples	03-376	3	106	Feldspar Porphyry	1	Waste / Middle	2.8	6000	12.0	350	7.3	2.1	***10.0***	3	43	1400	0.50	9.5	37	17	14
100821	Outcrop			Portal			0.7	10500	22.0	530	2.7	0.9	***5.0***	15.0	26	3700	0.5	3.5	92.0	20.0	5.2
100822	Outcrop			Portal			3.6	9300	11.0	400	8.4	0.7	***5.0***	4.0	28	1000	0.3	6.4	26.0	10.0	330.0
100823	Outcrop			Portal			0.9	13000	18.0	440	1.3	0.6	***5.0***	7.0	38	2100	0.6	3.3	69.0	20.0	25.0
100824	Outcrop			Portal			1.6	9000	21.0	510	2.5	1.3	***5.0***	11.0	34	3500	0.7	2.9	85.0	10.0	42.0
NICO-08-007	Outcrop			Feldspar porphyry			1.3	14000	6.2		2.8	2.5	0.7	2.2	27	1000	0.4	9.3	7.7	11.0	1.8
NICO-08-010	Outcrop			Feldspar porphyry			1.6	17000	16.0		5.7	2.1	0.7	4.5	64	2900	0.5	6.9	64.0	17.0	12.0
Minimum							0.7	1000	2.3	60	1.3	0.6	0.7	1	6	55	0.20	2.3	2	7	2
Maximum							11.0	30000	35.0	750	32.0	14.0	10.0	15	220	5800	0.70	26.0	170	22	330
Average							2.9	10607	11.0	390	6.5	3.2	4.0	4	48	1839	0.39	8.5	47	16	29
Standard Deviation							1.8	6345	6.3	145	5.1	2.6	2.3	2	49	1302	0.15	4.0	38	5	61
100852	03257	13	23	Rhyolite	300	WASTE	4.0	3100	6.0	55	5.1	6.8	***5***	1	13	79	0.40	9.4	1	6	9
100852-Follow Up	03257	13	23	Rhyolite	300	WASTE	2.4	4700	6.3		6.1	4.9	***0.7***	2	16	320	0.31	11.0	***1***	7	5
100853	03257	23	33	Rhyolite	20	ORE	---	3700	5.0	45	13.0	3.8	***5***	1	20	53	0.40	12.0	2	8	64
100854	03257	33	43	Rhyolite	20	ORE	---	2600	6.0	58	6.3	2.3	***5***	1	16	37	0.30	10.0	2	7	92
100860	03258	3	16	Rhyolite	300	WASTE	4.0	3700	5.0	51	4.7	2.1	***5***	1	13	88	0.20	7.9	1	5	53
100860-Follow Up	03258	3	16	Rhyolite	300	WASTE	1.0	3600	4.5		4.8	3.1	***0.7***	1	12	260	0.23	8.6	***1***	5	27
100862	03258	27	35	Rhyolite	20	ORE	4.7	2800	6.0	83	4.0	2.6	***5***	1	13	200	0.30	7.2	6	7	14
100863	03258	35	50	Rhyolite	300	WASTE	4.5	2900	4.0	58	8.0	1.2	***5***	1	13	86	0.30	8.5	2	7	36
100864	03258	50	65	Rhyolite	300	WASTE	8.8	1800	6.0	93	7.5	2.9	***5***	1	12	53	0.30	9.5	3	8	50
100865	03258	65	77	Rhyolite	300	WASTE	3.6	1700	4.0	67	4.3	1.7	***5***	1	14	71	0.30	8.8	3	6	31
100865-Follow Up	03258	65	77	Rhyolite	300	WASTE	5.5	2200	4.7		4.6	2.5	***0.7***	1	16	350	0.37	10.0	2	7	10
100871	03259	22	33	Rhyolite	300	WASTE	3.2	1500	12.0	89	5.0	2.5	***5***	1	18	200	0.20	12.0	6	10	170
100871-Follow Up	03259	22	33	Rhyolite	300	WASTE	6.2	1500	14.0		5.0	3.1	***0.7***	2	18	400	0.31	13.0	3	11	147
100872	03259	33	43	Rhyolite	300	WASTE	2.8	2700	5.0	72	7.6	3.3	***5***	2	17	300	0.20	9.0	3	7	12
100873	03259	44	54	Rhyolite	300	WASTE	---	1700	5.0	79	11.0	3.0	***5***	1	13	86	0.20	11.0	5	5	41
100878	002465	1	10	Rhyolite	300	WASTE	4.0	800	2.0	74	2.6	0.8	***5***	1	13	79	0.20	6.3	3	8	37
100878-Follow Up	002465	1	10	Rhyolite	300	WASTE	2.8	1000	6.2		2.7	1.2	***0.7***	1	15	340	0.33	7.2	***1***	9	23
100879	002465	10	20	Rhyolite	300	WASTE	2.7	700	6.0	54	5.4	4.2	***5***	1	10	36	0.20	7.0	3	5	42
100880	002465	20	30	Rhyolite	300	WASTE	4.2	1700	8.0	64	4.0	2.2	***5***	1	11	27	0.20	8.2	3	6	16
100932	00252	3	13	Rhyolite	300	WASTE	3.9	3300	4.0	110	5.7	1.3	***5***	3	19	79	0.20	4.5	---	7	14
100933	00252	13	26	Rhyolite	300	WASTE	7.6	1000	7.0	34	4.7	7.1	***5***	2	15	35	0.20	13.0	---	3	25
100933-Follow Up	00252	13	26	Rhyolite	300	WASTE	6.7	1200	7.5		5.7	7.1	***0.7***	1	20	130	0.36	14.0	1	6	6
100943	03264	27	37	Rhyolite	300	WASTE	5.4	2900	6.0	68	10.0	4.5	***5***	2	12	200	0.20	8.9	1	5	16
100944	03264	37	45	Rhyolite	300	WASTE	5.6	2200	7.0	75	11.0	4.3	***5***	12	14	100	0.20	10.0	4	9	30
100951	98197	15	30	Rhyolite	300	WASTE	6.4	1700	9.0	330	5.7	2.7	***5***	1	7	84	0.20	11.0	3	6	25
100952	98197	0	15	Rhyolite	300	WASTE	4.1	3300	3.0	64	4.8	2.5	***5***	2	7	100	0.20	8.2	1	5	9
100952-Follow Up	98197	0	15	Rhyolite	300	WASTE	1.1	4900	3.5		8.6	4.1	***0.7***	1	10	360	0.23	8.9	1	6	6
100971	96011	3	15	Rhyolite	300	WASTE	6.8	2000	10.0	240	6.4	3.5	***5***	2	16	200	0.20	5.9	1	20	46
100971-Follow Up	96011	3	15	Rhyolite	300	WASTE	4.2	2400	3.9		9.0	3.9	***0.7***	2	17	300	0.43	6.6	***1***	17	5
100972	96011	15	30	Rhyolite	300	WASTE	5.2	7300	10.0	400	4.1	2.4	***5***	2	23	400	0.20	8.5	6	10	74
100973	96011	30	45	Rhyolite	300	WASTE	2.8	5900	7.0	310	4.3	1.3	***5***	2	22	300	0.20	9.3	9	20	92
100974	96011	45	60	Rhyolite	300	WASTE	5.1	3300	8.0	240	3.9	1.2	***5***	1	21	200	0.20	7.2	0-9	20	35
100975	96011	60	85	Rhyolite			6.9	800	5.0	220	3.5	2.5	***5***	2	17	73	0.20	6.8	1	20	75
100980	97035	0	10	Rhyolite	300	WASTE	2.5	1500	14.0	79	11.0	12.0	***5***	1	18	100	0.20	8.5	1	7	100
100980-Follow Up	97035	0	10	Rhyolite	300	WASTE	2.3	1400	3.4		16.0	8.4	1	1	18	350	0.39	9.4	2	7	7
100981	97035	10	20	Rhyolite	35	ORE	7.9	1000	16.0	81	22.0	17.0	7	2	16	100	0.20	9.7	1	7	61
100981-Follow Up	97035	10	20	Rhyolite	35	ORE	9.2	890	14.0		90.0	26.0	3.6	1	16	320	0.33	12.0	***1***	8	6
100982	97035	20	29	Rhyolite	30	ORE	13.0	1300	24.0	85	4.2	9.1	***5***	2	16	100	0.20	12.0	1	9	61
100985	97036	0	10	Rhyolite	300	WASTE	4.1	1000	6.0	88	2.6	3.5	***5***	1	15	100	0.20	8.4	1	9	28
100985-Follow Up	97036	0	10	Rhyolite	300	WASTE	1.2	1300	4.0		5.2	5.2	***0.7***	1	19	340	0.28	8.8	***1***	9	10
100986	97036	10	26	Rhyolite			4.5	1400	6.0	84	4.1	7.2	***5***	1	17	100	0.20	8.5	1	6	34
100992	00230	1	17	Rhyolite			5.9	600	7.0	93	2.1	7.3	***5***	1	12	69	0.20	8.0	1	7	10
NICO-08-011	03282	4.3	13.4	Rhyolite	300	WASTE	2.3	1000	2.3		2.3	4.7	***0.7***	2	15	320	0.32	9.6	2	8	5
NICO-08-012	03282	31.7	41.3	Rhyolite	300	WASTE	13.0	1500	2.8		6.4	4.4	***0.7***	2	15	390	0.34	19.0	1	13	12
Fortune Minerals Preliminary Samples	03-272	0.6	18	Rhyolite		Waste	3.8	860	8.0	78	2.9	3.2	***10.0***	***2***	15	100	***0.40***	9.8	3	8	8
NICO-08-001	Outcrop			Rhyolite			1.3	1000	1.6		5.1	1.0	0.7	1.2	33	330	0.5	5.8	2.3	6.8	61.0
NICO-08-002	Outcrop			Rhyolite			1.0	15000	9.1		3.9	0.8	0.7	2.6	29	2200	0.7	7.1	44.0	12.0	8.9
NICO-08-003	Outcrop			Rhyolite			0.5	100	11.0		1.7	6.2	0.7	9.2	18	2700	0.8	3.4	46.0	28.0	11.0
NICO-08-004	Outcrop			Rhyolite			1.0	1200	0.8		2.8	3.5	0.9	1.5	14	320	0.4	7.7	0.8	7.5	1.2
NICO-08-005	Outcrop			Rhyolite			1.2	1400	2.8		2.6	3.2	0.7	2.4	16	310	0.4	6.9	0.6	6.5	11.0
NICO-08-006	Outcrop			Rhyolite			3.0	1200	3.3		4.4	1.6	0.7	1.1	19	280	0.3	9.3	0.6	4.7	11.0
Minimum							0.5	100	0.8	34	1.7	0.8	0.7	1	7	27	0.20	3.4	1	3	1
Maximum							13.0	15000	24.0	400	90.0	26.0	10.0	12	33	2700	0.83	19.0	46	28	170
Average							4.5	2358	6.7	113	7.6	4.4	3.6	2	16	278	0.29	9.1	4	9	35
Standard Deviation							2.9	2296	4.2	92	12.3	4.3	2.3	2	5	462	0.12	2.6	9	5	36

Appendix IV-2a

Solid Phase Analysis - Drill Core and Outcrop Samples

NICO Project, Fortune Minerals Ltd.

Sample Number[1]	Hole	Depth From	Depth To	Lithology	Block Model Code[2]	Waste Rock / Ore[3]	Ag mg/kg	Al mg/kg	As mg/kg	Ba mg/kg	Be mg/kg	Bi mg/kg	Ca mg/kg	Cd mg/kg	Co mg/kg	Cr mg/kg	Cu mg/kg	Fe mg/kg	K mg/kg	Li mg/kg	Mg mg/kg	Mn mg/kg
100804	00231	235	250	Siltstone	500	WASTE	0.2	44000	***5***	630	1.6	110	8700	***0.1***	30	69	68	42000	29000	24	10000	330
100819	98208	148	152	Siltstone	500	WASTE	0.2	61000	36	570	2.8	170	4500	***0.1***	6	60	2	78000	46000	16	13000	150
100877	03259	157	165	Siltstone	500	WASTE	0.2	51000	25	460	2.4	230	5300	***0.1***	10	69	37	91000	41000	18	14000	260
100897	98152	108	112	Siltstone	500	WASTE	0.2	63000	93	560	2.6	300	3100	***0.1***	30	57	24	140000	46000	32	15000	290
100914	96016	209	215	Siltstone	500	WASTE	0.2	61000	***5***	540	2.1	90	7700	***0.1***	5	50	3	36000	44000	11	11000	300
100922	98151	110.5	114	Siltstone	500	WASTE	0.3	66000	200	740	2.0	120	6300	***0.1***	40	49	75	45000	54000	18	11000	370
100929	00233	105.5	110	Siltstone	400	WASTE	0.2	82000	300	1100	2.3	180	9800	***0.1***	60	77	44	75000	94000	23	17000	560
100940	00234	132	138	Siltstone	500	WASTE	***0.1***	72000	200	990	2.8	210	4000	***0.1***	20	59	4	88000	87000	17	13000	150
100946	03264	98	101.6	Siltstone	500	WASTE	***0.1***	61000	900	770	1.0	370	4900	0.1	30	16	10	160000	101000	***4***	12000	260
100957	98197	130	140	Siltstone	400	WASTE	***0.1***	64000	24	720	2.2	160	6800	***0.1***	8	44	5	69000	68000	13	11000	210
100960	98209	126	131	Siltstone	500	WASTE	***0.1***	90000	6	780	2.1	150	4200	***0.1***	5	51	2	90000	50	6	13000	310
100960-Follow Up	98209	126	131	Siltstone	500	WASTE		78000	39	1000	2.0	15	4400	***0.2***	6	88	6	68000	65000	8	16000	340
100964	98147	72	81	Siltstone	500	WASTE	***0.1***	77000	7	650	2.3	160	2800	0.1	10	64	2	75000	49000	28	15000	190
100984	97035	267	270	Siltstone	500	WASTE	0.2	74000	8	770	2.2	270	3500	***0.1***	10	77	15	125000	53000	22	16000	160
101000	00241	249	256	Siltstone	500	WASTE	0.3	44000	5	400	1.3	140	8500	***0.1***	8	55	5	48000	31000	15	12000	250
Fortune Minerals Preliminary Samples	98-159	98	173	Siltstone			***0.6***	31000	11	410	1.5	***1***	3700	***1.0***	16	68	98	65000	20000	9	13000	420
Fortune Minerals Preliminary Samples	98-170	118	156	Siltstone																		
		194	224				***0.6***	65000	17	790	1.5	1	5600	***1.0***	23	48	190	96000	49000	10	13000	330
Fortune Minerals Preliminary Samples	98-196	160	223																			
		250	256																			
NICO-08-008	Outcrop			Siltstone			0.24	84000	47	600	1.6	7.30	2600	0.20	11.00	52	36	44000	61000	7	6000	190
NICO-08-009	Outcrop			Siltstone			0.20	60000	13	820	2.6	0.63	2600	0.11	14.00	130	18	59000	53000	7	8300	120
Minimum							0.1	31000	5	400	1.0	1	2600	0.1	5	16	2	36000	50	4	6000	120
Maximum							0.6	90000	900	1100	2.8	370	9800	1.0	60	130	190	160000	101000	32	17000	560
Average							0.2	64632	102	700	2.0	141	5211	0.2	18	62	34	78632	52161	15	12595	273
Standard Deviation							0.1	14960	210	195	0.5	107	2198	0.3	15	23	47	33698	24573	8	2728	108
100801	00231	1	15	Sub-Arkosic Wacke	400	WASTE	0.3	30000	1900	360	0.9	100	600	***0.1***	40	13	220	42000	27000	7	7700	140
100801-Follow Up	00231	1	15	Sub-Arkosic Wacke	400	WASTE		30000	1900	370	1.9	5	700	***0.1***	34	290	180	53000	35000	6	11000	160
100807	03265	1	10	Sub-Arkosic Wacke	400	WASTE	0.1	23000	400	230	0.6	100	2900	***0.1***	20	7	14	38000	25000	14	7500	190
100808	03265	10	20	Sub-Arkosic Wacke	400	WASTE	0.2	25000	65	190	---	120	8700	***0.1***	7	12	80	51000	23000	14	14000	380
100809	03265	20	31	Sub-Arkosic Wacke	400	WASTE	0.1	25000	1900	120	0.7	120	4900	***0.1***	20	38	5	58000	23000	14	22000	360
100809-Follow Up	03265	20	31	Sub-Arkosic Wacke	400	WASTE		24000	2600	150	0.9	6	7100	***0.1***	28	310	7	63000	27000	18	23000	450
100813	03265	157	160	Sub-Arkosic Wacke	500	WASTE	0.2	69000	26	640	2.2	170	10800	***0.1***	20	45	120	79000	45000	31	14000	290
100851	03257	10.9	13	Sub-Arkosic Wacke	300	WASTE	0.1	22000	500	200	0.5	120	900	***0.1***	270	13	27	34000	21000	6	6900	270
100881	00246S	31	37	Sub-Arkosic Wacke	400	WASTE	0.1	45000	38	410	1.0	240	4300	***0.1***	30	50	16	103000	21000	4	23000	370
100882	98198	4	10	Sub-Arkosic Wacke	400	WASTE	0.2	20000	400	190	1.8	260	20000	***0.1***	110	23	44	76000	12000	29	29000	680
100883	98198	10	20	Sub-Arkosic Wacke	400	WASTE	0.1	25000	12	240	1.5	210	17000	***0.1***	10	20	19	71000	21000	21	24000	640
100883-Follow Up	98198	10	20	Sub-Arkosic Wacke	400	WASTE		31000	31	270	1.3	1	17000	***0.2***	10	190	12	83000	33000	13	27000	640
100886	98198	66	72	Sub-Arkosic Wacke	20	ORE	0.2	45000	60	270	1.8	240	28000	***0.1***	500	18	18	120000	26000	17	17000	860
100898	98152	113	119	Sub-Arkosic Wacke	500	WASTE	0.2	65000	16	390	1.3	130	21000	***0.1***	550	35	62	60000	27000	38	17000	470
100903	00249	20	27	Sub-Arkosic Wacke	400	WASTE	0.2	60000	200	750	0.7	200	3400	***0.1***	160	21	14	91000	66000	26	11000	310
100906	00249	71	82	Sub-Arkosic Wacke	400	WASTE	0.2	40000	200	370	1.4	220	12000	***0.1***	8	23	5	89000	38000	31	34000	380
100915	98151	1	10	Sub-Arkosic Wacke	300	WASTE	0.1	71000	200	980	1.5	60	1800	***0.1***	20	34	19	22000	75000	8	6300	580
100922	00233	9	16	Sub-Arkosic Wacke	300	WASTE	0.2	75000	57	1100	1.5	50	2100	***0.1***	20	12	33	19000	95000	11	6500	180
100926-Follow Up	00233	9	16	Sub-Arkosic Wacke	300	WASTE		79000	59	1300	1.5	6	2200	***0.1***	21	150	29	25000	77000	7	7100	220
100987	97036	63	72	Sub-Arkosic Wacke	400	WASTE	0.1	28000	100	200	0.5	150	4300	***0.1***	20	30	20	66000	28000	12	14000	300
100987-Follow Up	97036	63	72	Sub-Arkosic Wacke	400	WASTE		28000	33	270	0.6	1	5200	***0.2***	7	260	8	55000	34000	6	14000	270
100996	00241	0	10	Sub-Arkosic Wacke	400	WASTE	0.2	24000	300	110	0.8	210	2600	***0.1***	30	15	68	85000	27000	16	22000	210
100996-Follow Up	00241	0	10	Sub-Arkosic Wacke	400	WASTE		29000	510	160	1.4	14	1900	***0.2***	28	130	55	92000	29000	15	22000	240
100997	00241	10	20	Sub-Arkosic Wacke	400	WASTE	0.1	20000	100	280	0.4	180	2100	***0.1***	20	10	46	47000	26000	17	14000	150
100999	00241	105	115	Sub-Arkosic Wacke	400	WASTE	0.2	20000	1100	170	0.1	140	5000	***0.1***	50	53	7	47000	28000	14	11000	250
100899	97072	0	10	Sub-Arkosic Wacke	300	WASTE	0.2	57000	200	710	2.4	60	1200	***0.1***	40	11	130	25000	49000	10	5200	180
100899-Follow Up	97072	0	10	Sub-Arkosic Wacke	300	WASTE		70000	330	1000	3.6	3	1700	***0.1***	59	130	98	32000	65000	6	6300	220
100816	98208	5	15	Sub-Arkosic Wacke	400	WASTE	0.2	33000	500	40	1.3	280	9000	***0.1***	10	16	57	260000	34000	16	48000	390
100816-Follow Up	98208	5	15	Sub-Arkosic Wacke	400	WASTE		28000	530	66	1.1	47	10000	***0.2***	11	140	69	110000	28000	9	42000	420
100910	96016	44	59	Sub-Arkosic Wacke	400	WASTE	0.2	31000	800	250	1.0	220	9900	***0.1***	20	13	16	92000	29000	18	25000	370
100910-Follow Up	96016	44	59	Sub-Arkosic Wacke	400	WASTE		30000	830	230	1.1	25	11000	***0.2***	31	130	22	96000	33000	11	27000	460
100941	03264	1	11	Sub-Arkosic Wacke	400	WASTE	0.1	27000	5600	300	0.5	170	2300	***0.1***	240	53	94	59000	43000	10	7900	220
100941-Follow Up	03264	1	11	Sub-Arkosic Wacke	400	WASTE		28000	3600	300	0.6	11	3600	***0.1***	170	180	130	64000	32000	6	8300	250
100942	03264	11	22	Sub-Arkosic Wacke	400	WASTE	0.1	35000	1100	890	1.1	210	1100	***0.1***	90	24	6	72000	56000	7	5900	250
100993	00230	58	68	Sub-Arkosic Wacke	400	WASTE	0.2	26000	2000	130	1.3	360	18000	***0.1***	150	31	260	98000	32000	34	35000	890
Minimum							0.1	20000	12	40	0.1	1	600	0.1	7	7	5	19000	12000	4	5200	140
Maximum							0.3	79000	5600	1300	3.6	360	28000	0.2	550	310	260	260000	95000	38	48000	890
Average							0.2	37657	806	390	1.2	127	7266	0.1	82	72	57	70771	36857	15	17589	361
Standard Deviation							0.1	18164	1197	322	0.7	97	6970	0.0	129	85	63	42328	18538	9	10956	192

NOTES:

bold italic Indicates values is less than the analytical detection limit.

1. Samples labelled as "follow up" indicate samples that were submitted for repeat analysis in 2009. Samples labelled as "Fortune Minerals Preliminary Samples" collected by Fortune in 2004. All other samples collected by Golder in 2004.
2. Block model code according to P&E mine block model.
3. Classification of ore according to P&E mine block model.

Appendix IV-2a

Solid Phase Analysis - Drill Core and Outcrop Samples

NICO Project, Fortune Minerals Ltd.

Sample Number[1]	Hole	Depth From	Depth To	Lithology	Block Model Code[2]	Waste Rock / Ore[3]	Mo mg/kg	Na mg/kg	Ni mg/kg	P mg/kg	Pb mg/kg	Sb mg/kg	Se mg/kg	Sn mg/kg	Sr mg/kg	Ti mg/kg	Tl mg/kg	U mg/kg	V mg/kg	Y mg/kg	Zn mg/kg
100804	00231	235	250	Siltstone	500	WASTE	1.4	11000	32.0	380	4.9	5.0	***5.0***	8	32	3500	0.50	2.7	65	20	15
100819	98208	148	152	Siltstone	500	WASTE	2.0	12000	24.0	330	3.9	2.2	***5.0***	6	32	3000	0.50	3.3	69	30	11
100877	03259	157	165	Siltstone	500	WASTE	0.7	13000	26.0	370	2.1	2.2	***5.0***	7	32	3300	0.70	3.3	80	20	11
100897	98152	108	112	Siltstone	500	WASTE	1.2	7600	16.0	470	2.5	2.5	***5.0***	7	23	2800	0.90	3.2	80	20	25
100914	96016	209	215	Siltstone	500	WASTE	1.8	17000	16.0	320	3.0	2.2	***5.0***	7	40	3600	0.40	2.9	69	20	8
100922	98151	110.5	114	Siltstone	500	WASTE	2.2	19000	20.0	440	4.4	2.7	***5.0***	9	43	4200	0.30	3.3	77	20	13
100929	00233	105.5	110	Siltstone	400	WASTE	2.6	15000	26.0	460	3.0	3.1	***5.0***	10	36	4200	0.60	3.7	100	20	37
100940	00234	132	138	Siltstone	500	WASTE	2.0	12000	20.0	430	3.2	3.0	***5.0***	7	38	4000	0.70	3.7	78	20	20
100946	03264	98	101.6	Siltstone	500	WASTE	4.3	1500	8.0	380	2.8	10.0	***5.0***	6	16	2200	0.80	3.0	58	6	22
100957	98197	130	140	Siltstone	400	WASTE	1.2	14000	13.0	430	12.0	2.0	***5.0***	8	45	3300	0.50	4.5	68	20	16
100960	98209	126	131	Siltstone	500	WASTE	1.2	17000	19.0	380	4.3	1.1	***5.0***	8	32	3800	0.60	4.0	69	10	38
100960-Follow Up	98209	126	131	Siltstone	500	WASTE	1.4	20000	27.0		4.6	1.5	***0.7***	10	31	3700	0.62	4.5	72	16	20
100964	98147	72	81	Siltstone	500	WASTE	1.8	15000	31.0	520	3.6	2.4	***5.0***	6	40	2800	0.50	2.7	96	20	39
100984	97035	267	270	Siltstone	500	WASTE	3.6	15000	30.0	440	3.0	2.3	***5.0***	8	36	3300	0.60	3.4	98	20	70
101000	00241	249	256	Siltstone	500	WASTE	0.8	18000	14.0	500	3.3	2.3	***5.0***	7	28	3400	0.60	3.8	71	20	34
Fortune Minerals Preliminary Samples	98-159	98	173	Siltstone			2.5	3300	30.0	430	4.1	1.2	***10.0***	7	26	1600	0.60	3.8	68	22	50
Fortune Minerals Preliminary Samples	98-170	118 194	156 224	Siltstone			2.2	12000	26.0	480	3.8	1.9	***10.0***	6	39	3000	0.90	3.7	82	17	39
Fortune Minerals Preliminary Samples	98-196	160 250	223 256																		
NICO-08-008	Outcrop			Siltstone			2.4	28000	8.7		2.0	2.0	0.7	2.4	23	2400	0.3	7.7	71.0	13.0	1.8
NICO-08-009	Outcrop			Siltstone			1.2	10000	23.0		2.4	3.1	0.7	11.0	27	3300	0.4	2.5	78.0	13.0	1.4
Minimum							0.7	1500	8.0	320	2.0	1.1	0.7	2	16	1600	0.28	2.5	58	6	1
Maximum							4.3	28000	32.0	520	12.0	10.0	10.0	11	45	4200	0.90	7.7	100	30	70
Average							1.9	13705	21.6	423	3.8	2.8	4.8	7	33	3232	0.58	3.7	76	18	25
Standard Deviation							0.9	5972	7.4	58	2.1	1.9	2.4	2	8	673	0.17	1.1	11	5	18
100801	00231	1	15	Sub-Arkosic Wacke	400	WASTE	2.3	500	5.0	170	2.4	5.7	***5.0***	3	10	1100	0.50	1.6	21	7	13
100801-Follow Up	00231	1	15	Sub-Arkosic Wacke	400	WASTE	1.0	480	9.4		2.6	6.0	***1.0***	3	9	1400	0.56	2.0	24	16	7
100807	03265	1	10	Sub-Arkosic Wacke	400	WASTE	2.0	400	6.0	150	1.1	1.6	***5.0***	3	7	1000	0.40	1.4	19	5	8
100808	03265	10	20	Sub-Arkosic Wacke	400	WASTE	3.0	700	5.0	230	6.2	1.6	***5.0***	4	7	1100	0.50	2.2	18	6	6
100809	03265	20	31	Sub-Arkosic Wacke	400	WASTE	4.4	300	5.0	120	4.1	2.6	***5.0***	3	5	900	0.60	1.6	16	5	10
100809-Follow Up	03265	20	31	Sub-Arkosic Wacke	400	WASTE	0.8	510	14.0		5.0	3.7	***0.7***	3	4	1100	0.60	1.9	18	8	7
100813	03265	157	160	Sub-Arkosic Wacke	500	WASTE	---	14000	27.0	500	3.4	3.8	***5.0***	4	78	2300	0.70	2.7	69	20	12
100851	03257	10.9	13	Sub-Arkosic Wacke	300	WASTE	---	500	14.0	120	2.4	3.4	***5.0***	3	6	500	0.20	1.2	9	3	33
100881	00246S	31	37	Sub-Arkosic Wacke	400	WASTE	0.6	5700	19.0	320	1.8	1.8	***5.0***	4	14	1000	0.50	1.6	55	6	30
100882	98198	4	10	Sub-Arkosic Wacke	400	WASTE	3.5	900	8.0	170	3.5	3.9	***5.0***	5	10	900	0.40	1.5	25	7	39
100883	98198	10	20	Sub-Arkosic Wacke	400	WASTE	2.6	1100	7.0	230	1.6	2.1	***5.0***	5	11	1400	0.70	2.0	28	10	23
100883-Follow Up	98198	10	20	Sub-Arkosic Wacke	400	WASTE	0.8	900	13.0		1.2	3.2	***0.7***	5	9	1500	0.69	2.3	25	11	18
100886	98198	66	72	Sub-Arkosic Wacke	20	ORE	---	11000	16.0	540	2.6	3.4	***5.0***	9	12	2600	0.40	2.3	50	20	15
100898	98152	113	119	Sub-Arkosic Wacke	500	WASTE	1.2	13000	8.0	780	4.0	6.2	***5.0***	4	110	4200	0.40	2.5	130	20	29
100903	00249	20	27	Sub-Arkosic Wacke	400	WASTE	---	1600	6.0	750	2.2	1.8	***5.0***	6	13	2200	1.00	3.2	84	7	26
100906	00249	71	82	Sub-Arkosic Wacke	400	WASTE	1.9	2000	10.0	500	3.4	4.8	***5.0***	4	13	1600	0.80	2.7	25	10	27
100915	98151	1	10	Sub-Arkosic Wacke	300	WASTE	3.6	16000	5.0	260	3.6	1.5	***5.0***	1	21	300	0.20	3.5	28	10	100
100926	00233	9	16	Sub-Arkosic Wacke	300	WASTE	3.7	13000	7.0	230	2.6	2.0	***5.0***	2	20	500	0.30	5.2	20	10	38
100926-Follow Up	00233	9	16	Sub-Arkosic Wacke	300	WASTE	0.7	14000	7.3		2.7	2.0	***0.7***	2	20	1000	0.31	5.3	21	16	18
100987	97036	63	72	Sub-Arkosic Wacke	400	WASTE	6.3	600	9.0	240	2.0	1.7	***5.0***	3	7	1100	0.50	1.8	23	6	72
100987-Follow Up	97036	63	72	Sub-Arkosic Wacke	400	WASTE	2.5	600	8.9		1.6	3.5	***0.7***	3	7	1300	0.50	2.0	16	7	6
100996	00241	0	10	Sub-Arkosic Wacke	400	WASTE	3.2	200	10.0	300	1.1	4.0	***5.0***	5	6	1400	0.60	2.1	27	8	25
100996-Follow Up	00241	0	10	Sub-Arkosic Wacke	400	WASTE	3.1	190	11.0		1.5	4.7	***0.7***	4	7	1800	0.64	2.3	31	10	9
100997	00241	10	20	Sub-Arkosic Wacke	400	WASTE	1.8	400	6.0	280	0.9	3.2	***5.0***	3	9	1200	0.40	1.4	23	6	4
100999	00241	105	115	Sub-Arkosic Wacke	400	WASTE	4.6	500	6.0	240	1.5	5.3	***5.0***	3	6	1000	0.40	1.4	19	7	6
100899	97072	0	10	Sub-Arkosic Wacke	300	WASTE	2.7	11000	9.0	280	3.7	1.9	***5.0***	3	18	800	0.30	5.1	25	20	29
100899-Follow Up	97072	0	10	Sub-Arkosic Wacke	300	WASTE	4.7	14000	12.0		2.7	2.6	***0.7***	3	22	1100	0.40	5.8	28	29	13
100816	98208	5	15	Sub-Arkosic Wacke	400	WASTE	1.7	300	6.0	190	3.1	7.5	***5.0***	3	7	1400	0.90	1.3	24	9	14
100816-Follow Up	98208	5	15	Sub-Arkosic Wacke	400	WASTE	1.2	320	12.0		2.1	9.9	***0.7***	3	5	1600	0.82	1.7	27	10	10
100910	96016	44	59	Sub-Arkosic Wacke	400	WASTE	1.1	700	10.0	270	2.1	6.7	***5.0***	5	7	1200	0.80	1.7	22	7	8
100910-Follow Up	96016	44	59	Sub-Arkosic Wacke	400	WASTE	4.2	650	9.0		2.1	9.7	***0.7***	4	6	1600	0.70	2.0	27	9	10
100941	03264	1	11	Sub-Arkosic Wacke	400	WASTE	6.1	700	14.0	230	2.1	12.0	***5.0***	5	9	1600	0.40	1.4	30	7	18
100941-Follow Up	03264	1	11	Sub-Arkosic Wacke	400	WASTE	6.2	650	18.0		2.6	10.0	1.2	5	7	1300	0.50	1.6	27	9	5
100942	03264	11	22	Sub-Arkosic Wacke	400	WASTE	4.2	1200	10.0	250	2.1	3.3	***5.0***	4	18	1500	0.30	1.2	31	5	26
100993	00230	58	68	Sub-Arkosic Wacke	400	WASTE	2.1	1100	10.0	390	1.1	20.0	***5.0***	5	6	2000	0.70	1.9	34	9	16
Minimum							0.6	190	5.0	120	0.9	1.5	0.7	1	4	300	0.20	1.2	9	3	4
Maximum							6.3	16000	27.0	780	6.2	20.0	5.0	9	110	4200	1.00	5.8	130	29	100
Average							2.8	3706	10.1	310	2.5	4.8	3.8	4	15	1386	0.53	2.3	31	10	21
Standard Deviation							1.8	5404	4.7	176	1.2	3.8	1.9	1	21	692	0.20	1.2	23	6	19

NOTES:

bold italic Indicates values is less than the analytical detection limit.

1. Samples labelled as "follow up" indicate samples that were submitted for repeat analysis in 2009. Samples labelled as "Fortune Minerals Preliminary Samples" collected by Fortune in 2004. All other samples collected by Golder in 2004.
2. Block model code according to P&E mine block model.
3. Classification of ore according to P&E mine block model.

Appendix IV-2c
Solid Phase Analysis - Tailings
NICO Project, Fortune Minerals Limited

Sample ID	Ag mg/kg	Al mg/kg	As mg/kg	B mg/kg	Ba mg/kg	Be mg/kg	Bi mg/kg	Ca mg/kg	Cd mg/kg	Co mg/kg	Cr mg/kg	Cu mg/kg	Fe mg/kg	K mg/kg	Li mg/kg	Mg mg/kg	Mn mg/kg	Mo mg/kg	Na mg/kg	Ni mg/kg	Pb mg/kg	Sb mg/kg	Se mg/kg	Sn mg/kg	Sr mg/kg	Ti mg/kg	Tl mg/kg	U mg/kg	V mg/kg	W mg/kg	Y mg/kg	Zn mg/kg	Hg mg/kg
Bulk Rougher Tails	0.29	38000	170	30	140	2.80	460	62000	0.13	48	80	3	200000	26000	8	31000	1500	2.60	4500	15	6.4	9.4	***0.7***	11.00	12	2200	0.51	10.00	38.00	240.00	21.00	50.00	0.10
Bulk Cleaner Tails	0.35	32000	2000	21	140	2.30	1700	54000	0.18	610	70	120	180000	29000	11	35000	1300	6.10	3800	29	10	21	3.9	8.50	11	2500	0.64	12.00	32.00	170.00	16.00	98.00	0.10
PP#14	0.27	40000	280	12	140.0	2.80	450	57000	1.80	87	58	24	200000	24000	***3***	24000	1600	6	5100	13	7	11	2	13.00	11	1800	0.55	9.90	45.00	280.00	22.00	21.00	***0.10***

NOTES:
bold italic Indicates values is less than the analytical detection limit.

Appendix IV-3a

Acid Base Accounting and Net Acid Generation Testing - Drill Core

NICO Project, Fortune Minerals Ltd.

Sample Number[1]	Hole	Depth From	Depth To	Lithology	Mining Phase[2]	Waste Rock / Ore[3]	Paste pH	Sulphur (%S)	Sulphide (%S)	Sulphate (%S)	Carbon (%C)	Carbonate (%C)	Potentials (tonnes $CaCO_3$/1000 tonnes) NP	AP*	CaNP	NP/AP	NAG Test (Typical Preparation)
100855	03257	47	49	Breccia	300	WASTE	9.61	0.02	***0.01***	0.06	0.05	0.03	8.8	0.31	4.2	28.4	
100861-Follow Up	03258	17	26	Breccia	300	WASTE		0.02									
100861	03258	17	26	Breccia	300	WASTE	9.89	0.04	***0.01***	0.10	0.04	0.02	12.2	0.31	3.3	39.4	
100874	03259	54	61	Breccia	400	WASTE	9.69	0.01	***0.01***	0.04	0.10	0.02	25.4	0.31	8.3	81.9	
100902-Follow Up	00249	4	20	Breccia		WASTE		0.05									
100902	00249	4	20	Breccia		WASTE	10.15	0.06	0.04	0.04	0.03	0.02	10.4	1.20	2.5	8.7	
100916	98151	13	20	Breccia	300	WASTE	10.02	0.11	0.09	0.05	0.05	0.05	7.2	2.80	4.2	2.6	
100917-Follow Up	98151	20	28	Breccia	300	WASTE		0.09									
100917	98151	20	28	Breccia	300	WASTE	9.85	0.05	***0.02***	0.08	0.05	0.04	6.7	0.62	4.2	10.8	
100925	00233	0	9	Breccia	300	WASTE	9.16	0.02	0.01	***0.03***	0.03	0.02	8.7	0.31	2.5	28.1	
100934	00252	27	33	Breccia	400	WASTE	9.47	0.49	0.35	0.42	0.02	***0.01***	8.7	11.00	1.7	0.8	
100945	03264	46	53	Breccia	400	WASTE	10.18	***0.01***	***0.01***	***0.03***	***0.01***	***0.01***	8.2	0.31	0.8	26.5	
Minimum							9.16	0.01	0.01	0.03	0.01	0.01	6.70	0.31	0.83	0.8	
Maximum							10.18	0.49	0.35	0.42	0.10	0.05	25.40	11.00	8.33	81.9	
Average							9.78	0.08	0.06	0.09	0.04	0.02	10.70	1.91	3.52	25.2	
Standard Deviation							0.33	0.13	0.11	0.12	0.03	0.01	5.75	3.51	2.16	25.1	
100814	98419	0	6	Black Rock Schist + Magnetite			9.92	0.07	0.05	0.06	0.02	***0.02***	12	2	1.7	7.3	
100817	98208	76	86	Black Rock Schist + Magnetite	400	WASTE	10.23	0.03	***0.01***	0.07	0.01	***0.01***	18	0	0.8	56.5	
100818-Follow up	98208	86	100	Black Rock Schist + Magnetite	400	WASTE		0.28									
100818	98208	86	100	Black Rock Schist + Magnetite	400	WASTE	10.21	0.38	0.35	0.10	***0.01***	***0.01***	16	11	0.8	1.5	
100875-Follow up	03259	96	111	Black Rock Schist + Magnetite	400	WASTE		0.17									
100875	03259	96	111	Black Rock Schist + Magnetite	400	WASTE	9.91	0.22	0.04	0.56	0.26	***0.08***	49	1	21.7	40.7	
100890	00220	32	50	Black Rock Schist + Magnetite			10.15	0.05	0.03	0.06	0.02	***0.01***	10	1	1.7	10.9	
100909	96016	27	42	Black Rock Schist + Magnetite	400	WASTE	9.98	0.27	0.21	0.19	0.03	***0.01***	21	6	2.5	3.2	
100923	98150	45	55	Black Rock Schist + Magnetite	400	WASTE	10.23	0.01	***0.01***	***0.03***	0.02	***0.02***	14	0	1.7	45.2	
100924	98150	55	65	Black Rock Schist + Magnetite	400	WASTE	9.73	0.12	0.09	0.10	0.03	***0.01***	12	3	2.5	4.4	
100930	00233	111	114	Black Rock Schist + Magnetite	400	WASTE	9.95	0.11	0.08	0.08	0.02	***0.01***	10	3	1.7	4.0	
100937	00252	184	193	Black Rock Schist + Magnetite	400	WASTE	10.08	0.15	0.11	0.13	0.02	***0.01***	18	3	1.7	5.4	
100949	96023	17	30	Black Rock Schist + Magnetite	400	WASTE	10.15	0.01	***0.01***	***0.03***	0.01	***0.01***	22	0	0.8	71.0	
100950	96023	30	46	Black Rock Schist + Magnetite			10.12	0.17	0.12	0.16	0.03	***0.03***	17	4	2.5	4.4	
100961	98147	3	12	Black Rock Schist + Magnetite	400	WASTE	10.05	0.04	***0.02***	0.06	0.03	***0.02***	17	1	2.5	27.9	
100962-Follow up	98147	12	21	Black Rock Schist + Magnetite	400	WASTE		0.03									
100962	98147	12	21	Black Rock Schist + Magnetite	400	WASTE	10.08	0.21	0.17	0.12	0.04	***0.02***	9	5	3.3	1.6	
100963-Follow up	98147	46	61	Black Rock Schist + Magnetite	15	ORE		0.15									
100963	98147	46	61	Black Rock Schist + Magnetite	15	ORE	10.28	0.01	***0.01***	***0.03***	0.02	***0.01***	7	0	1.7	22.3	
100976	96011	131	145	Black Rock Schist + Magnetite	400	WASTE	9.97	0.40	0.33	0.19	0.02	***0.01***	17	10	1.7	1.7	
100977	96011	145	160	Black Rock Schist + Magnetite	400	WASTE	10.18	0.07	0.04	0.09	0.02	***0.01***	14	1	1.7	11.5	
100978	96011	160	170	Black Rock Schist + Magnetite	400	WASTE	10.12	0.34	0.20	0.40	0.02	***0.01***	18	6	1.7	2.7	
100979	96011	270	290	Black Rock Schist + Magnetite			9.89	0.23	0.17	0.18	0.03	***0.02***	12	5	2.5	2.2	
100983-Follow up	97035	57	68	Black Rock Schist + Magnetite	400	WASTE		0.13									
100983	97035	57	68	Black Rock Schist + Magnetite	400	WASTE	9.87	0.12	0.09	0.08	0.02	***0.03***	13	3	1.7	4.7	
100990	97036	216	225	Black Rock Schist + Magnetite	400	WASTE	9.78	0.01	***0.01***	***0.03***	0.13	***0.13***	20	0	10.8	65.8	
100911	96016	138	158	Black Rock Schist + Magnetite			9.88	0.03	0.01	0.06	***0.01***	***0.01***	13	0	0.8	41.6	
100912	96016	158	190	Black Rock Schist + Magnetite			9.75	0.80	0.69	0.33	0.01	***0.01***	12	22	0.8	0.6	
100912-Follow up	96016	158	190	Black Rock Schist + Magnetite				0.84									
100995	00230	150	170	Black Rock Schist + Magnetite		ORE	9.61	0.53	0.39	0.43	0.02	***0.02***	9	12	1.7	0.7	
100995-Follow up	00230	150	170	Black Rock Schist + Magnetite		ORE		0.56									
100994-Follow up	00230	68	73	Black Rock Schist + Magnetite	400	WASTE		0.01									
100994	00230	68	73	Black Rock Schist + Magnetite	400	WASTE	10.08	0.01	***0.01***	0.03	0.01	***0.01***	1	0	0.8	4.2	
Minimum							9.61	0.01	0.01	0.03	0.01	0.01	1.30	0.31	0.83	0.6	
Maximum							10.28	0.84	0.69	0.56	0.26	0.13	48.80	21.60	21.67	71.0	
Average							10.01	0.20	0.13	0.14	0.03	0.02	15.22	4.06	2.87	17.7	
Standard Deviation							0.18	0.22	0.16	0.14	0.05	0.03	8.45	5.08	4.37	22.3	
100802	00231	73	83	Black Rock Schist ± Magnetite	400	WASTE	9.87	0.02	***0.01***	0.07	0.05	0.04	28	0.31	4.2	91.0	
100803-Follow up	00231	83	94	Black Rock Schist ± Magnetite	400	WASTE		0.08									
100803	00231	83	94	Black Rock Schist ± Magnetite	400	WASTE	10.24	0.17	0.11	0.16	***0.01***	***0.01***	13	3.60	0.8	3.7	
100805	00236	38	48	Black Rock Schist ± Magnetite	400	WASTE	10.18	0.01	***0.01***	***0.03***	0.07	0.07	16	0.31	5.8	50.3	
100806	00236	48	60	Black Rock Schist ± Magnetite	400	WASTE	10.24	0.04	***0.02***	0.06	0.04	***0.01***	19	0.62	3.3	30.6	
100812	03265	145	155	Black Rock Schist ± Magnetite	500	WASTE	10.25	0.01	***0.01***	***0.03***	0.02	***0.01***	11	0.31	1.7	36.8	
100815	98208	0	5	Black Rock Schist ± Magnetite	400	WASTE	9.90	0.01	***0.01***	***0.03***	0.11	0.05	31	0.31	9.2	99.0	
100866-Follow up	03258	136	138	Black Rock Schist ± Magnetite	500	WASTE		0.11									
100866	03258	136	138	Black Rock Schist ± Magnetite	500	WASTE	10.01	0.13	0.06	0.21	0.07	0.05	16	1.90	5.8	8.3	
100884	98198	20	30	Black Rock Schist ± Magnetite	400	WASTE	10.04	0.02	***0.01***	0.05	0.02	***0.01***	20	0.31	1.7	64.8	
100885	98198	30	41	Black Rock Schist ± Magnetite	400	WASTE	9.89	0.25	0.15	0.29	0.03	***0.01***	15	4.80	2.5	3.1	
100887-Follow up	98198	95	110	Black Rock Schist ± Magnetite	400	WASTE		0.09									
100887	98198	95	110	Black Rock Schist ± Magnetite	400	WASTE	10.28	0.08	0.04	0.13	0.03	***0.01***	15	1.20	2.5	12.4	
100889	00220	25	32	Black Rock Schist ± Magnetite	400	WASTE	9.91	0.10	0.06	0.14	0.11	***0.01***	16	1.80	9.2	9.1	
100900	97072	20	37	Black Rock Schist ± Magnetite			10.26	0.02	***0.01***	0.03	0.11	0.05	16	0.31	9.2	51.0	
100901-Follow up	97072	55	80	Black Rock Schist ± Magnetite				0.04									
100901	97072	55	80	Black Rock Schist ± Magnetite			9.49	0.05	0.03	0.07	0.05	0.03	13	0.94	4.2	14.0	
100905	00249	62	72	Black Rock Schist ± Magnetite	400	WASTE	10.02	0.35	0.32	0.08	0.06	***0.01***	18	10.00	5.0	1.8	
100907	00249	82	90	Black Rock Schist ± Magnetite	400	WASTE	10.07	0.31	0.27	0.13	0.02	***0.01***	10	8.30	1.7	1.2	
100918	98151	31	41	Black Rock Schist ± Magnetite	400	WASTE	8.17	0.30	0.27	0.09	0.09	0.10	16	8.40	7.5	1.9	

Appendix IV-3a

Acid Base Accounting and Net Acid Generation Testing - Drill Core

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Sample Number[1]	Hole	Depth From	Depth To	Lithology	Mining Phase[2]	Waste Rock / Ore[3]	Paste pH	Sulphur (%S)	Sulphide (%S)	Sulphate (%S)	Carbon (%C)	Carbonate (%C)	Potentials (tonnes $CaCO_3$/1000 tonnes) NP	Potentials AP*	Potentials CaNP	NP/AP	NAG Test (Typical Preparation)
100919	98151	41	57	Black Rock Schist ± Magnetite			9.88	0.10	0.08	0.05	0.01	0.02	16	2.50	0.8	6.3	
100920	98151	74	79	Black Rock Schist ± Magnetite	400	WASTE	9.33	0.20	0.15	0.16	0.11	0.11	14	4.70	9.2	2.9	
100927	00233	45	55	Black Rock Schist ± Magnetite	400	WASTE	9.87	0.01	***0.01***	***0.03***	0.79	0.99	78	0.31	65.8	250.0	
100928-Follow up	00233	58	67	Black Rock Schist ± Magnetite	400	WASTE		0.17									
100928	00233	58	67	Black Rock Schist ± Magnetite	400	WASTE	9.98	0.42	0.39	0.09	0.02	0.02	43	12.10	1.7	3.6	
100935	00252	97	107	Black Rock Schist ± Magnetite	400	WASTE	9.76	0.38	0.29	0.27	0.01	***0.01***	22	9.10	0.8	2.4	
100936	00252	107	127	Black Rock Schist ± Magnetite			9.63	0.36	0.31	0.15	0.04	0.04	6	9.70	3.3	0.6	
100938	00234	1.5	9	Black Rock Schist ± Magnetite	400	WASTE	9.96	0.01	***0.01***	***0.03***	0.03	***0.01***	16	0.31	2.5	51.0	
100939	00234	61	77	Black Rock Schist ± Magnetite			10.17	0.01	***0.01***	***0.03***	0.02	***0.01***	-14	0.31	1.7	-43.9	
100947	97102	57	77	Black Rock Schist ± Magnetite			10.22	0.02	***0.01***	0.04	0.03	***0.01***	9	0.31	2.5	27.4	
100948	97102	67	78	Black Rock Schist ± Magnetite	400	WASTE	10.11	0.05	0.01	0.12	0.82	0.94	99	0.31	68.3	317.7	
100953	98197	45	50	Black Rock Schist ± Magnetite	400	WASTE	9.84	0.09	0.05	0.11	0.05	0.03	11	1.60	4.2	7.0	
100958	98209	47	60	Black Rock Schist ± Magnetite	400	WASTE	10.17	0.54	0.41	0.40	0.06	0.04	30	12.80	5.0	2.3	
100959	98209	60	70	Black Rock Schist ± Magnetite	400	WASTE	10.07	0.78	0.64	0.44	0.02	***0.01***	25	20.00	1.7	1.2	
100965	03267	2	10	Black Rock Schist ± Magnetite	400	WASTE	9.47	0.06	***0.02***	0.14	0.08	0.04	33	0.62	6.7	53.5	
100966	03267	10	18	Black Rock Schist ± Magnetite	400	WASTE	9.65	0.01	***0.01***	0.04	0.01	***0.01***	29	0.31	0.8	94.5	
100967	03270	30	39	Black Rock Schist ± Magnetite	400	WASTE	10.07	0.03	***0.02***	0.04	0.01	***0.01***	13	0.62	0.8	20.5	
100968-Follow up	03270	39	47	Black Rock Schist ± Magnetite	400	WASTE		1.54									
100968	03270	39	47	Black Rock Schist ± Magnetite	400	WASTE	9.78	1.57	1.36	0.63	0.01	***0.01***	20	42.60	0.8	0.5	
100969	03270	91	100	Black Rock Schist ± Magnetite	400	WASTE	10.20	0.01	***0.01***	***0.03***	0.07	0.03	4	0.31	5.8	12.9	
100970-Follow up	97060	11	30	Black Rock Schist ± Magnetite				0.02									
100970	97060	11	30	Black Rock Schist ± Magnetite			10.06	0.01	***0.01***	0.03	***0.01***	***0.01***	13	0.31	0.8	41.6	
100989	97036	157	165	Black Rock Schist ± Magnetite	400	WASTE	10.22	0.01	***0.01***	***0.03***	0.07	0.07	23	0.31	5.8	74.8	
100991	97036	225	230	Black Rock Schist ± Magnetite	400	WASTE	10.00	0.28	0.11	0.49	0.53	0.61	17	3.50	44.2	4.9	
100998-Follow up	00241	91	104	Black Rock Schist ± Magnetite	400	WASTE		0.10									
100888	98198	110	130	Black Rock Schist ± Magnetite			9.96	0.19	0.10	0.26	0.05	0.03	20	3.1	4.2	6.3	
Fortune Minerals Preliminary Samples	03-275	37	74	Middle Ore Zone	1	Middle	9.70	0.91	0.80	0.11	0.11	0.01	12.6	25	9.2	0.5	
Fortune Minerals Preliminary Samples	03-275	120	157	Lower Ore Zone	2	Lower	9.74	0.53	0.46	0.07	0.03	0.01	9.5	14	2.5	0.7	
Fortune Minerals Preliminary Samples	03-272	21 83	81 96	Upper Ore Zone			9.93	0.04	***0.01***	0.03	0.08	0.10	16.0	0.31	6.7	51.2	
100998	00241	91	104	Black Rock Schist ± Magnetite	400	WASTE	10.03	0.03	***0.01***	0.08	0.58	0.73	54	0.31	48.3	173.9	
Minimum							8.17	0.01	0.01	0.03	0.01	0.01	-13.60	0.31	0.83	-43.9	
Maximum							10.28	1.57	1.36	0.63	0.82	0.99	98.50	42.60	68.34	317.7	
Average							9.92	0.21	0.16	0.13	0.11	0.11	21.18	4.98	9.01	39.1	
Standard Deviation							0.36	0.34	0.27	0.14	0.19	0.24	18.63	8.31	16.21	67.6	
100868	03258	77	83	Fault Zone	400	WASTE	9.02	0.92	0.61	0.90	2.21	2.65	190	19	184.2	9.9	
100810	03265	69	79	Feldspar Porphyry	200	WASTE	9.89	0.11	0.03	0.23	0.09	0.04	14.1	0.94	7.5	15.0	
100810-Follow up	03265	69	79	Feldspar Porphyry	200	WASTE		0.07									
100811	03265	79	89	Feldspar Porphyry	200	WASTE	9.79	0.02	***0.01***	0.04	0.17	0.20	18.8	0.31	14.2	60.6	
100856-Follow up	03257	56	65	Feldspar Porphyry	300	WASTE		0.01									
100856	03257	56	65	Feldspar Porphyry	300	WASTE	10.04	0.02	***0.01***	0.04	0.08	0.09	9.2	0.31	6.7	29.7	
100857	03257	65	79	Feldspar Porphyry	100	WASTE	10.04	0.01	***0.01***	***0.03***	0.03	***0.01***	6.5	0.31	2.5	21.0	
100858	03257	105	109	Feldspar Porphyry	200	WASTE	9.98	0.17	0.09	0.24	0.13	0.05	13.2	2.80	10.8	4.7	
100859	03257	110	114	Feldspar Porphyry	500	WASTE	9.90	0.05	***0.02***	0.09	0.13	0.07	12.2	0.62	10.8	19.7	
100867	03258	138	141	Feldspar Porphyry	200	WASTE	10.13	0.02	***0.01***	0.05	0.06	0.05	8.8	0.31	5.0	28.4	
100869-Follow up	03259	3	11	Feldspar Porphyry	200	WASTE		< 0.005									
100869	03259	3	11	Feldspar Porphyry	200	WASTE	9.84	0.01	***0.01***	***0.03***	0.06	0.06	13.5	0.31	5.0	43.5	
100870	03259	11	22	Feldspar Porphyry	200	WASTE	9.89	0.01	***0.01***	***0.03***	0.05	***0.01***	13.6	0.31	4.2	43.9	
100876	03259	111	113	Feldspar Porphyry	200	WASTE	10.07	0.01	***0.01***	***0.03***	0.04	***0.01***	13.6	0.31	3.3	43.9	
100891	00220	110	113	Feldspar Porphyry	200	WASTE	10.00	0.01	***0.01***	***0.03***	0.10	0.03	15.8	0.31	8.3	51.0	
100892-Follow up	98152	0	15	Feldspar Porphyry	200	WASTE		0.02									
100892	98152	0	15	Feldspar Porphyry	200	WASTE	9.89	0.02	0.01	***0.03***	0.02	***0.01***	5.7	0.31	1.7	18.4	
100893	98152	15	30	Feldspar Porphyry	200	WASTE	10.13	0.04	0.01	0.08	0.06	***0.01***	9.2	0.31	5.0	29.7	
100894-Follow up	98152	30	45	Feldspar Porphyry	200	WASTE		0.06									
100894	98152	30	45	Feldspar Porphyry	200	WASTE	9.52	0.07	0.03	0.12	0.24	0.18	10.9	0.94	20.0	11.6	
100895	98152	45	60	Feldspar Porphyry	200	WASTE	9.84	0.02	0.01	***0.03***	0.07	0.04	9.0	0.31	5.8	29.0	
100896	98152	96	106	Feldspar Porphyry	200	WASTE	10.05	0.03	***0.01***	0.07	0.14	0.04	15.2	0.31	11.7	49.0	
100904-Follow up	00249	31	36	Feldspar Porphyry	200	WASTE		< 0.005									
100904	00249	31	36	Feldspar Porphyry	200	WASTE	10.19	0.01	***0.01***	***0.03***	0.01	***0.01***	5.2	0.31	0.8	16.8	
100908	00249	131	136	Feldspar Porphyry	200	WASTE	9.97	0.03	0.01	0.07	0.16	0.04	17.5	0.31	13.3	56.5	
100913	96016	205	209	Feldspar Porphyry	200	WASTE	9.98	0.07	0.04	0.10	0.12	0.14	16.1	1.20	10.0	13.4	
100921-Follow up	98151	92	105	Feldspar Porphyry	200	WASTE		0.01									
100921	98151	92	105	Feldspar Porphyry	200	WASTE	9.59	0.02	***0.01***	0.04	0.29	0.35	33.8	0.31	24.2	109.0	
100931	00233	115	121	Feldspar Porphyry	200	WASTE	9.73	0.03	0.01	0.04	0.16	0.18	23.3	0.31	13.3	75.2	
100954	98197	50	60	Feldspar Porphyry	200	WASTE	10.04	0.03	***0.01***	0.06	0.08	0.06	15.0	0.31	6.7	48.4	
100955-Follow up	98197	60	70	Feldspar Porphyry	200	WASTE		0.11									
100955	98197	60	70	Feldspar Porphyry	200	WASTE	9.68	0.14	0.08	0.20	0.05	0.02	11.7	2.50	4.2	4.7	
100956	98197	70	80	Feldspar Porphyry	200	WASTE	9.65	0.01	***0.01***	***0.03***	0.11	0.08	10.9	0.31	9.2	35.2	
100988-Follow up	97036	151	157	Feldspar Porphyry	400	WASTE		< 0.005									
100988	97036	151	157	Feldspar Porphyry	400	WASTE	10.13	0.01	***0.01***	***0.03***	0.09	0.11	38.5	0.31	7.5	124.2	

Appendix IV-3a

Acid Base Accounting and Net Acid Generation Testing - Drill Core

NICO Project, Fortune Minerals Ltd.

Sample Number[1]	Hole	Depth From	Depth To	Lithology	Mining Phase[2]	Waste Rock / Ore[3]	Paste pH	Sulphur (%S)	Sulphide (%S)	Sulphate (%S)	Carbon (%C)	Carbonate (%C)	Potentials (tonnes $CaCO_3$/1000 tonnes) NP	Potentials (tonnes $CaCO_3$/1000 tonnes) AP*	Potentials (tonnes $CaCO_3$/1000 tonnes) CaNP	NP/AP	NAG Test (Typical Preparation)
Fortune Minerals Preliminary Samples	03-275	86 104	103 114	Quartz Feldspar Porphyry			10.12	0.11	0.07	0.04	***0.01***	0.01	6.5	2.2	0.8	3.0	
Fortune Minerals Preliminary Samples	03-376	3	106	Feldspar Porphyry			10.00	0.30	0.23	0.07	0.07	0.08	13.9	7.2	5.8	1.9	
NICO-08-013	03282	117	126	Feldspar Porphyry	100	WASTE	9.17	0.077	0.04	0.04	0.071	0.084	8.5	1.2	5.9	7.2	7.31
100821				Portal			9.91	***0.01***	***0.01***	***0.01***	0.02	***0.01***	7.70	0.31	1.7	25	
100822				Portal			9.49	0.059999999	0.01	0.05	0.07	0.01	8.10	0.31	5.8	26	
100823				Portal			9.29	***0.01***	***0.01***	***0.01***	0.029999999	***0.01***	6.20	0.31	2.5	20	
100824				Portal			9.89	***0.01***	***0.01***	***0.01***	0.01	***0.01***	7.70	0.31	0.8	25	
NICO-08-007				Feldspar porphyry			8.00	0.005	***0.01***	0.01	0.05	0.023	5.4	0.31	4.2	17	
NICO-08-010				Feldspar porphyry			8.82	0.005	***0.01***	0.01	0.053	0.027	11	0.31	4.4	35	
Minimum							8.00	0.01	0.01	0.01	0.01	0.01	5.20	0.31	0.83	1.9	
Maximum							10.19	0.30	0.23	0.24	0.29	0.35	38.50	7.19	24.17	124.2	
Average							9.78	0.05	0.03	0.06	0.09	0.06	12.83	0.80	7.17	33.6	
Standard Deviation							0.43	0.06	0.04	0.06	0.06	0.07	7.29	1.30	5.32	27.6	
100852	03257	13	23	Rhyolite	300	WASTE	9.57	0.08	0.04	0.12	0.09	0.05	7.7	1.2	7.5	6.4	
100852-Follow up	03257	13	23	Rhyolite	300	WASTE		0.038									
100853	03257	23	33	Rhyolite	20	ORE	9.69	0.07	0.06	0.05	0.06	0.06	2.2	1.8	5.0	1.2	
100854	03257	33	43	Rhyolite	20	ORE	10.04	0.06	0.04	0.05	0.04	0.03	2.2	1.2	3.3	1.8	
100860-Follow up	03258	3	16	Rhyolite	20	ORE		0.008									
100860	03258	3	16	Rhyolite	300	WASTE	10.11	***0.01***	***0.01***	***0.03***	0.03	***0.01***	4.8	0.31	2.5	15.5	
100862	03258	27	35	Rhyolite	20	ORE	9.95	0.07	0.03	0.12	0.08	0.09	7.7	0.94	6.7	8.2	
100863	03258	35	50	Rhyolite	300	WASTE	10.25	0.03	***0.01***	0.09	0.10	0.07	11.2	0.31	8.3	36.1	
100864	03258	50	65	Rhyolite	300	WASTE	10.06	0.03	***0.01***	0.07	0.11	0.07	11.8	0.31	9.2	38.1	
100865-Follow up	03258	65	77	Rhyolite	300	WASTE		< 0.005									
100865	03258	65	77	Rhyolite	300	WASTE	10.24	***0.01***	***0.01***	***0.03***	0.09	0.08	12	0.31	7.5	38.7	
100871-Follow up	03259	22	33	Rhyolite	300	WASTE		0.013									
100871	03259	22	33	Rhyolite	300	WASTE	10.08	0.03	***0.01***	0.07	0.07	***0.01***	10.4	0.31	5.8	33.5	
100872	03259	33	43	Rhyolite	300	WASTE	10.27	0.05	0.01	0.12	0.09	0.01	12.4	0.31	7.5	40.0	
100873	03259	44	54	Rhyolite	300	WASTE	9.98	0.02	***0.01***	0.06	0.13	0.08	12.5	0.31	10.8	40.3	
100878-Follow up	00246S	1	10	Rhyolite	300	WASTE		< 0.005									
100878	00246S	1	10	Rhyolite	300	WASTE	10.29	***0.01***	***0.01***	***0.03***	0.01	***0.01***	4	0.31	0.8	12.9	
100879	00246S	10	20	Rhyolite	300	WASTE	9.89	0.02	***0.01***	0.06	0.08	0.04	9	0.31	6.7	29.0	
100880	00246S	20	30	Rhyolite	300	WASTE	10.22	0.08	***0.02***	0.16	0.03	0.02	6.2	0.62	2.5	10.0	
100932	00252	3	13	Rhyolite	300	WASTE	9.45	0.59	0.49	0.30	0.01	***0.01***	-2.7	15	0.8	-0.2	
100933-Follow up	00252	13	26	Rhyolite	300	WASTE		1.07									
100933	00252	13	26	Rhyolite	300	WASTE	8.84	1.6	1.4	0.75	0.08	0.06	9	42	6.7	0.2	
100943	03264	27	37	Rhyolite	300	WASTE	9.52	0.17	0.13	0.13	0.08	0.07	13.2	4.0	6.7	3.3	
100944	03264	37	45	Rhyolite	300	WASTE	9.28	0.44	0.39	0.14	0.07	0.07	7	12	5.8	0.6	
100951	98197	15	30	Rhyolite	300	WASTE	9.96	0.12	0.06	0.20	0.17	0.06	17.2	1.9	14.2	9.1	
100952-Follow up	98197	0	15	Rhyolite	300	WASTE		0.170									
100952	98197	0	15	Rhyolite	300	WASTE	9.95	0.18	0.12	0.20	0.13	0.11	13	3.7	10.8	3.5	
100971-Follow up	96011	3	15	Rhyolite	300	WASTE		0.182									
100971	96011	3	15	Rhyolite	300	WASTE	9.90	0.22	0.13	0.27	0.14	0.13	17.2	4.1	11.7	4.2	
100972	96011	15	30	Rhyolite	300	WASTE	9.45	0.37	0.29	0.23	0.05	0.03	3.4	9.1	4.2	0.4	
100973	96011	30	45	Rhyolite	300	WASTE	9.66	0.05	***0.02***	0.07	***0.01***	***0.01***	3.7	0.62	0.8	6.0	
100974	96011	45	60	Rhyolite	300	WASTE	9.62	0.08	0.06	0.04	***0.01***	***0.01***	4.9	1.9	0.8	2.6	
100975	96011	60	85	Rhyolite			9.97	0.20	0.14	0.19	0.03	0.02	6.5	4.4	2.5	1.5	
100980-Follow up	97035	0	10	Rhyolite	300	WASTE		0.050									
100980	97035	0	10	Rhyolite	300	WASTE	9.04	0.07	0.05	0.05	***0.01***	***0.01***	1.2	1.6	0.8	0.8	
100981-Follow up	97035	10	20	Rhyolite	35	ORE		0.567									
100981	97035	10	20	Rhyolite	35	ORE	9.81	0.38	0.33	0.15	0.02	0.01	6.7	10	1.7	0.7	
100982	97035	20	29	Rhyolite	30	ORE	9.92	0.43	0.36	0.21	0.06	0.07	10.1	11	5.0	0.9	
100985-Follow up	97036	0	10	Rhyolite	300	WASTE		0.091									
100985	97036	0	10	Rhyolite	300	WASTE	9.74	0.10	0.09	***0.03***	***0.01***	***0.01***	2.2	2.8	0.8	0.8	
100986	97036	10	26	Rhyolite			9.83	0.30	0.29	0.04	0.04	0.04	6.6	8.9	3.3	0.7	
100992	00230	1	17	Rhyolite			9.73	0.10	0.07	0.11	0.06	0.04	-8.4	2.2	5.0	-3.8	
Fortune Minerals Preliminary Samples	03-272	0.6	18	Rhyolite			10.09	0.10	0.04	0.06	***0.01***	0.01	14.3	1.25	0.8	11.4	
NICO-08-011	03282	4.3	13	Rhyolite	300	WASTE	9.09	0.005	***0.01***	0.01	0.058	0.03	11.2	0.31	4.8	10.9	7.54
NICO-08-012	03282	31.7	41	Rhyolite	300	WASTE	9.00	0.074	0.04	0.04	0.041	0.063	12.8	1.2	3.4	11.6	7.08
NICO-08-001				Rhyolite			8.40	0.005	***0.01***	0.01	0.025	0.005	6.1	0.31	2.1	20	
NICO-08-002				Rhyolite			8.40	0.005	***0.01***	0.01	0.026	0.005	14	0.31	2.2	45	
NICO-08-003				Rhyolite			8.40	0.005	***0.01***	0.01	2.62	11.3	11.6	0.31	218.3	37	
NICO-08-004				Rhyolite			8.30	0.005	***0.01***	0.01	0.035	0.007	9.6	0.31	2.9	31	
NICO-08-005				Rhyolite			8.30	0.014	***0.01***	0.01	0.116	0.062	10.3	0.31	9.7	33	
NICO-08-006				Rhyolite			8.20	0.007	***0.01***	0.01	0.038	0.067	11.5	0.31	3.2	37	
Minimum							8.20	0.01	0.01	0.01	0.01	0.01	-8.40	0.31	0.83	-3.8	
Maximum							10.29	1.60	1.35	0.75	2.62	11.30	17.20	42.20	218.35	44.8	
Average							9.56	0.17	0.12	0.11	0.12	0.32	8.16	3.75	10.33	14.5	
Standard Deviation							0.63	0.29	0.23	0.13	0.41	1.78	5.25	7.34	33.91	15.5	
100804	00231	235	250	Siltstone	500	WASTE	10.21	0.15	0.12	0.09	0.04	0.04	8	3.7	3.3	2.2	
100819	98208	148	152	Siltstone	500	WASTE	10.29	***0.01***	***0.01***	***0.03***	0.03	***0.01***	10	0.3	2.5	32.3	
100877	03259	157	165	Siltstone	500	WASTE	10.29	***0.01***	***0.01***	***0.03***	0.02	0.02	12.8	0.31	1.7	41.3	

Appendix IV-3a

Acid Base Accounting and Net Acid Generation Testing - Drill Core

NICO Project, Fortune Minerals Ltd.

Sample Number[1]	Hole	Depth From	Depth To	Lithology	Mining Phase[2]	Waste Rock / Ore[3]	Paste pH	Sulphur (%S)	Sulphide (%S)	Sulphate (%S)	Carbon (%C)	Carbonate (%C)	Potentials (tonnes $CaCO_3$/1000 tonnes) NP	AP*	CaNP	NP/AP	NAG Test (Typical Preparation)
100897	98152	108	112	Siltstone	500	WASTE	9.96	0.05	0.03	0.06	0.03	0.03	11.4	0.94	2.5	12.1	
100914	96016	209	215	Siltstone	500	WASTE	10.24	***0.01***	***0.01***	***0.03***	0.01	***0.01***	9.5	0.31	0.8	30.6	
100922	98151	111	114	Siltstone	500	WASTE	10.00	0.05	***0.02***	0.10	0.02	0.02	10	0.62	1.7	16.1	
100929	00233	106	110	Siltstone	400	WASTE	10.12	0.07	0.04	0.09	0.03	0.03	11.2	1.20	2.5	9.3	
100940	00234	132	138	Siltstone	500	WASTE	10.14	***0.01***	***0.01***	***0.03***	***0.01***	***0.01***	8.5	0.31	0.8	27.4	
100946	03264	98	102	Siltstone	500	WASTE	9.75	0.09	0.07	0.08	0.28	0.33	26.7	2.2	23.3	12.1	
100957	98197	130	140	Siltstone	400	WASTE	10.14	***0.01***	***0.01***	***0.03***	0.05	***0.01***	11.7	0.31	4.2	37.7	
100960 - Follow up	98209	126	131	Siltstone	500	WASTE		< 0.005									
100960	98209	126	131	Siltstone	500	WASTE	10.24	0.01	***0.01***	***0.03***	0.02	***0.01***	11.6	0.31	1.7	37.4	
100964	98147	72	81	Siltstone	500	WASTE	10.15	***0.01***	***0.01***	***0.03***	***0.01***	***0.01***	6.2	0.31	0.8	20.0	
100984	97035	267	270	Siltstone	500	WASTE	10.29	0.01	***0.01***	***0.03***	***0.01***	***0.01***	10	0.31	0.8	32.3	
101000	00241	249	256	Siltstone	500	WASTE	10.20	***0.01***	***0.01***	***0.03***	0.05	0.05	13.7	0.31	4.2	44.2	
Fortune Minerals Preliminary Samples	98-159	98	173	Siltstone			9.87	0.06	***0.01***	0.05	0.04	0.02	14.8	0.31	3.3	47.4	
Fortune Minerals Preliminary Samples	98-170	118 194	156 224	Siltstone			10.10	0.06	***0.01***	0.05	***0.01***	***0.01***	12.3	0.31	0.83	47.4	
Fortune Minerals Preliminary Samples	98-196	160 250	223 256														
NICO-08-008				Siltstone			8.90	0.005	***0.01***	0.01	0.036	0.022	9.5	0.31	3.0	30	
NICO-08-009				Siltstone			8.63	0.008	***0.01***	0.01	0.058	0.005	9.7	0.31	4.8	31	
Minimum							8.63	0.01	0.01	0.01	0.01	0.01	6.20	0.31	0.00	2.2	
Maximum							10.29	0.15	0.12	0.10	0.28	0.33	26.70	3.70	23.33	47.4	
Average							9.97	0.04	0.02	0.05	0.04	0.04	11.53	0.68	3.31	28.4	
Standard Deviation							0.47	0.04	0.03	0.03	0.06	0.07	4.32	0.87	5.04	13.6	
100801	00231	1	15	Sub-Arkosic Wacke	400	WASTE	9.31	0.32	0.27	0.14	0.01	***0.01***	8.5	8.4	0.8	1.0	
100801-Follow up	00231	1	15	Sub-Arkosic Wacke	400	WASTE		0.370									
100807	03265	1	10	Sub-Arkosic Wacke	400	WASTE	9.81	0.02	0.01	***0.03***	0.03	0.02	5.7	0.31	2.5	18.4	
100808	03265	10	20	Sub-Arkosic Wacke	400	WASTE	10.10	0.02	***0.01***	0.04	0.02	***0.01***	11	0.31	1.7	35.5	
100809-Follow up	03265	20	31	Sub-Arkosic Wacke	400	WASTE		0.091									
100809	03265	20	31	Sub-Arkosic Wacke	400	WASTE	10.16	0.08	0.07	0.03	0.01	***0.01***	10.9	2.2	0.8	5.0	
100813	03265	157	160	Sub-Arkosic Wacke	500	WASTE	10.24	0.10	0.06	0.11	***0.01***	***0.01***	11.8	2.0	0.8	5.9	
100816-Follow up	98208	5	15	Sub-Arkosic Wacke	400	WASTE		0.169									
100816	98208	5	15	Sub-Arkosic Wacke	400	WASTE	10.00	0.14	0.09	0.14	0.04	***0.01***	28	2.8	3.3	10.0	
100851	03257	10.9	13	Sub-Arkosic Wacke	300	WASTE	9.43	0.12	0.08	0.14	0.04	0.02	9.7	2.4	3.3	4.0	
100881	00246S	31	37	Sub-Arkosic Wacke	400	WASTE	9.99	0.03	***0.02***	0.04	0.10	0.07	16.8	0.62	8.3	27.1	
100882	98198	4	10	Sub-Arkosic Wacke	400	WASTE	9.56	0.06	***0.01***	0.17	0.15	0.04	25.8	0.31	12.5	83.2	
100883-Follow up	98198	10	20	Sub-Arkosic Wacke	400	WASTE		0.005									
100883	98198	10	20	Sub-Arkosic Wacke	400	WASTE	9.99	0.01	***0.01***	0.04	0.06	0.05	16.8	0.31	5.0	54.2	
100886	98198	66	72	Sub-Arkosic Wacke	20	ORE	10.15	0.04	0.03	0.03	0.04	0.02	9.7	0.94	3.3	10.3	
100898	98152	113	119	Sub-Arkosic Wacke	500	WASTE	10.11	0.08	0.05	0.09	0.07	0.02	11.7	1.6	5.8	7.3	
100899-Follow up	97072	0	10	Sub-Arkosic Wacke	300	WASTE		0.029									
100899	97072	0	10	Sub-Arkosic Wacke	300	WASTE	9.97	0.03	***0.02***	0.05	0.01	***0.01***	6.5	0.62	0.8	10.5	
100903	00249	20	27	Sub-Arkosic Wacke	400	WASTE	10.18	***0.01***	***0.01***	***0.03***	0.03	***0.01***	13	0.31	2.5	41.9	
100906	00249	71	82	Sub-Arkosic Wacke	400	WASTE	10.17	***0.01***	***0.01***	***0.03***	0.01	***0.01***	12.6	0.31	0.8	40.6	
100910-Follow up	96016	44	59	Sub-Arkosic Wacke	400	WASTE		0.114									
100910	96016	44	59	Sub-Arkosic Wacke	400	WASTE	10.16	0.10	0.08	0.07	0.02	0.02	17.4	2.5	1.7	7.0	
100915	98151	1	10	Sub-Arkosic Wacke	300	WASTE	9.90	0.03	***0.01***	0.06	0.04	0.03	8.7	0.31	3.3	28.1	
100926-Follow up	00233	9	16	Sub-Arkosic Wacke	300	WASTE		0.016									
100926	00233	9	16	Sub-Arkosic Wacke	300	WASTE	9.49	0.03	***0.01***	0.06	0.06	0.04	10.6	0.31	5.0	34.2	
100941-Follow up	03264	1	11	Sub-Arkosic Wacke	400	WASTE		0.499									
100941	03264	1	11	Sub-Arkosic Wacke	400	WASTE	9.29	0.33	0.30	0.09	***0.01***	***0.01***	5.9	9.4	0.8	0.6	
100942	03264	11	22	Sub-Arkosic Wacke	400	WASTE	9.31	0.04	0.03	0.05	***0.01***	***0.01***	6.7	0.94	0.8	7.1	
100987-Follow up	97036	63	72	Sub-Arkosic Wacke	400	WASTE		0.012									
100987	97036	63	72	Sub-Arkosic Wacke	400	WASTE	10.08	0.03	***0.02***	0.03	0.01	***0.01***	11.9	0.51	0.8	23.3	
100993	00230	58	68	Sub-Arkosic Wacke	400	WASTE	9.95	0.11	0.08	0.09	0.01	***0.01***	15.7	2.5	0.8	6.3	
100996-Follow up	00241	0	10	Sub-Arkosic Wacke	400	WASTE		0.025									
100996	00241	0	10	Sub-Arkosic Wacke	400	WASTE	9.58	0.02	***0.01***	0.04	0.03	***0.01***	14.8	0.31	2.5	47.7	
100997	00241	10	20	Sub-Arkosic Wacke	400	WASTE	9.34	0.02	0.01	0.03	0.01	0.02	8.3	0.31	0.8	26.8	
100999	00241	105	115	Sub-Arkosic Wacke	400	WASTE	9.95	0.05	0.04	0.04	0.02	0.02	11.8	1.2	1.7	9.8	
Minimum							9.29	0.01	0.01	0.03	0.01	0.01	5.70	0.31	0.83	0.6	
Maximum							10.24	0.50	0.30	0.17	0.15	0.07	28.00	9.40	12.50	83.2	
Average							9.85	0.09	0.05	0.07	0.03	0.02	12.41	1.67	2.83	21.8	
Standard Deviation							0.33	0.12	0.07	0.04	0.03	0.02	5.51	2.34	2.80	20.3	

* AP calculated using sulphide-sulphur.

bold italic Bold italic formatting indicates a value that is less than the analytical detection limit.

1. Samples labelled as "follow up" indicate samples that were submitted for repeat analysis in 2009. Samples labelled as "Fortune Minerals Preliminary Samples" collected by Fortune in 2004. All other samples collected by Golder in 2004.
2. Block model code according to P&E mine block model.
3. Classification of ore according to P&E mine block model.

Appendix IV-3b

Acid Base Accounting and Net Acid Generation Testing - Bulk Stockpile Samples

NICO Project, Fortune Minerals Ltd.

Sample ID	Pile ID	Depth	Waste / Ore[1]	Dominant Lithology[2]	Paste pH	Sulphur	Sulphide	Sulphate	Carbon	Carbonate	Potentials (tonnes $CaCO_3$/1000 tonnes)			NP/AP	NAG Test (Typical Preparation	NAG Test (No Preparation)
					(s.u.)	*(%S)*	*(%S)*	*(%S)*	*(%C)*	*(%C)*	*NP*	*AP*	*CaNP*		*NAG pH*	*NAG pH*
Aug 18 NS-2	Aug 18 NS	1 - 2m	ore	BRS±mt	8.20	0.495	0.36	0.14	0.077	0.100	8.3	11.2	6.4	0.7	5.0	
Aug 20 NS-3	Aug 20 NS	1 - 2m	ore	BRS±mt	8.30	0.450	0.41	0.04	0.073	0.058	10.0	12.9	6.1	0.8	4.3	3.4
Aug 21 NS-3	Aug 21 NS	2 - 3m	ore	BRS±mt	8.70	0.475	0.47	***0.01***	0.044	0.053	9.4	14.8	3.7	0.6	3.6	
Aug 23 DS-3	Aug 23 DS	1 - 3m	ore	BRS±mt	8.20	0.436	0.33	0.11	0.115	0.109	9.4	10.3	9.6	0.9	4.9	
Aug 24 DS-2	Aug 24 DS	1 - 3m	ore	BRS±mt	8.30	0.559	0.47	0.09	0.045	0.021	2.8	14.8	3.8	0.2	3.7	
Aug 27 DS-2	Aug 27 DS	0 - 1m	ore	BRS±mt	8.40	1.440	1.31	0.13	0.043	0.144	6.5	40.9	3.6	0.2	2.4	
Aug 28 DS-1	Aug 28 DS	0 - 1m	ore	BRS±mt	8.10	1.740	1.73	***0.01***	0.044	0.127	4.5	54.1	3.7	0.1	2.4	
Aug 28 DS-2	Aug 28 DS	1 - 2m	ore	BRS±mt	8.00	1.780	1.67	0.11	0.037	0.097	10.1	52.1	3.1	0.2	2.3	
Aug 28 DS-3	Aug 28 DS	2 - 3m	ore	BRS±mt	8.20	2.470	2.46	***0.01***	0.044	0.128	9.9	76.9	3.7	0.1	2.2	2.5
Aug 28 DS-4	Aug 28 DS	4m	ore	BRS±mt	8.20	2.240	2.09	0.16	0.054	0.127	7.2	65.2	4.5	0.1	2.2	
FC-5	Aug 28 DS	–	ore	BRS±mt	9.38	1.590	1.40	0.19	0.052	0.040	11.6	43.9	4.3	0.3	2.4	
Oct 10 NS-2	Oct 10 NS	1 - 2m	ore	BRS±mt	8.50	0.372	0.28	0.10	0.069	0.243	15.2	8.7	5.8	1.8	4.7	
Oct 11 DS-3	Oct 11 DS	1 - 2m	ore	BRS±mt	8.70	0.270	0.18	0.09	0.116	0.324	16.4	5.5	9.7	3.0	8.1	
Oct 12 DS-2	Oct 12 DS	0 - 1m	ore	BRS±mt	8.40	0.538	0.32	0.22	0.134	0.470	20.1	9.9	11.2	2.0	7.7	
Oct 9 DS-1	Oct 9 DS	0 - 1m	ore	BRS±mt	8.40	0.298	0.28	0.02	0.078	0.199	12.9	8.8	6.5	1.5	4.5	
Oct 9 DS-2	Oct 9 DS	2 - 3m	ore	BRS±mt	8.30	0.386	0.35	0.04	0.079	0.209	13.8	10.9	6.6	1.3	4.0	4.3
Oct 9 DS-3	Oct 9 DS	4m	ore	BRS±mt	8.20	0.311	0.29	0.02	0.059	0.131	9.3	9.2	4.9	1.0	3.8	
Minimum					8.00	0.27	0.18	0.01	0.04	0.02	2.80	5.50	3.08	0.1	2.23	
Maximum					9.38	2.47	2.46	0.22	0.13	0.47	20.10	76.90	11.17	3.0	8.13	
Average					8.38	0.93	0.85	0.09	0.07	0.15	10.44	26.48	5.70	0.9	4.01	
Standard Deviation					0.32	0.76	0.75	0.07	0.03	0.11	4.32	23.46	2.43	0.8	1.77	
FC-2	Oct 9 NS	–	sub-economic mineralized mine rock	BRS±mt	9.56	0.266	0.18	0.09	0.107	0.156	12.8	5.5	8.9	2.3	7.4	
FC-3	Mar 10 NS	–	sub-economic mineralized mine rock	BRS±mt	9.49	0.381	0.29	0.09	0.066	0.087	13.9	9.1	5.5	1.5	5.5	
FC-4	Mar 8 NS	–	sub-economic mineralized mine rock	BRS±mt	9.37	0.434	0.34	0.09	0.035	0.089	14.5	10.6	2.9	1.4	4.0	
Mar 10 NS-1	Mar 10 NS	0 m (Surface)	sub-economic mineralized mine rock	BRS±mt	8.50	0.428	0.42	***0.01***	0.074	0.301	17.6	13.1	6.2	1.3	4.4	
Mar 10 NS-2	Mar 10 NS	1 - 2m	sub-economic mineralized mine rock	BRS±mt	8.60	0.531	0.50	0.03	0.056	0.154	13.9	15.6	4.7	0.9	3.8	
Mar 10 NS-3	Mar 10 NS	2 - 3m	sub-economic mineralized mine rock	BRS±mt	8.60	0.524	0.47	0.05	0.055	0.166	11.7	14.8	4.6	0.8	3.9	5.2
Mar 10 NS-4	Mar 10 NS	4m	sub-economic mineralized mine rock	BRS±mt	8.50	0.472	0.43	0.04	0.064	0.137	12.8	13.4	5.3	1.0	3.8	
Mar 6 NS-2	Mar 6 NS	0 - 1m	sub-economic mineralized mine rock	BRS±mt	8.30	0.628	0.60	0.02	0.021	0.039	8.5	18.9	1.8	0.4	3.3	
Mar 8 NS-1	Mar 8 NS	0 m (Surface)	sub-economic mineralized mine rock	BRS±mt	8.60	0.316	0.28	0.03	0.075	0.189	7.9	8.8	6.3	0.9	5.4	
Mar 8 NS-2	Mar 8 NS	0 - 1m	sub-economic mineralized mine rock	BRS±mt	8.30	0.544	0.42	0.12	0.033	0.043	10.5	13.1	2.8	0.8	3.2	
Mar 8 NS-3	Mar 8 NS	1 - 2m	sub-economic mineralized mine rock	BRS±mt	8.30	0.497	0.48	0.02	0.032	0.026	9.2	15.1	2.7	0.6	3.3	3.3
Mar 8 NS-4	Mar 8 NS	4m	sub-economic mineralized mine rock	BRS±mt	8.30	0.583	0.56	0.03	0.029	0.052	8.8	17.4	2.4	0.5	3.3	
Oct 9 NS-1	Oct 9 NS	0 m (Surface)	sub-economic mineralized mine rock	BRS±mt	8.40	0.377	0.17	0.21	0.073	0.188	14.0	5.2	6.1	2.7	4.6	
Oct 9 NS-2	Oct 9 NS	0 - 1m	sub-economic mineralized mine rock	BRS±mt	8.40	0.290	0.18	0.11	0.100	0.278	18.1	5.5	8.3	3.3	8.7	
Oct 9 NS-3	Oct 9 NS	2 - 4m	sub-economic mineralized mine rock	BRS±mt	8.40	0.268	0.13	0.14	0.140	0.400	16.8	4.1	11.7	4.1	8.8	7.2
Oct 9 NS-4	Oct 9 NS	4m	sub-economic mineralized mine rock	BRS±mt	8.30	0.307	0.14	0.16	0.099	0.240	17.0	4.5	8.3	3.8	6.7	
Minimum					8.30	0.27	0.13	0.01	0.02	0.03	7.90	4.10	1.75	0.4	3.24	
Maximum					9.56	0.63	0.60	0.21	0.14	0.40	18.10	18.90	11.67	4.1	8.84	
Average					8.62	0.43	0.35	0.08	0.07	0.16	13.00	10.92	5.52	1.6	5.00	
Standard Deviation					0.44	0.12	0.16	0.06	0.03	0.11	3.35	4.92	2.76	1.2	1.93	
FC-1	Oct 5 DS	–	sub-economic mineralized mine rock	FP	9.31	0.059	0.02	0.03	0.099	0.154	12.7	0.6	8.3	20.5	7.9	
Oct 5 DS-1	Oct 5 DS	0 m (Surface)	sub-economic mineralized mine rock	FP	8.70	0.109	0.03	0.07	0.079	0.212	13.8	0.9	6.6	14.7	7.2	
Oct 5 DS-2	Oct 5 DS	0 - 2m	sub-economic mineralized mine rock	FP	8.60	0.121	0.03	0.09	0.094	0.286	15.0	0.9	7.8	16.0	7.2	5.1
Oct 5 DS-3	Oct 5 DS	2 - 4m	sub-economic mineralized mine rock	FP	8.60	0.151	0.06	0.09	0.090	0.291	12.0	1.9	7.5	6.3	7.0	
Minimum					8.60	0.06	0.02	0.03	0.08	0.15	12.00	0.62	6.58	6.3	7.01	
Maximum					9.31	0.15	0.06	0.09	0.10	0.29	15.00	1.90	8.25	20.5	7.87	
Average					8.80	0.11	0.04	0.07	0.09	0.24	13.38	1.10	7.54	14.4	7.32	
Standard Deviation					0.34	0.04	0.02	0.03	0.01	0.07	1.31	0.55	0.71	5.9	0.38	

bold italic Bold italic formatting indicates a value that is less than the analytical detection limit.

* AP calculated using sulphide-sulphur.

1. Sample classified as "waste" or "ore" according to average assay grades of each pile (as provided by Fortune) and August 2008 cut-off criterion.
2. Lithology based on dominant visible lithology in field. Rock may be diluted with minor proportions of other lithologies of waste rock.

Appendix IV-3c

Acid Base Accounting and Net Acid Generation Testing - Tailings

NICO Project, Fortune Minerals Ltd.

Sample ID	Paste pH *(s.u.)*	Sulphur *(%S)*	Sulphide *(%S)*	Sulphate *(%S)*	Carbon *(%C)*	Carbonate *(%C)*	Potentials			NP/AP	NAG-pH
							NP	*AP*	*CaNP*		
Bulk Rougher Tails	8.54	0.08	0.02	0.06	0.19	0.66	24.80	0.54	15.5	46.10	9.49
Bulk Cleaner Tails	8.68	0.43	0.31	0.11	0.23	0.60	25.80	9.83	18.8	2.62	9.13
PP#14	9.14	0.08	0.02	0.06	0.13	0.41	22.50	0.62	10.8	15.90	10.23

Appendix IV-4a

Short-Term Leach Test Results - Synthethic Precipitation Leaching Procedure - Waste Rock and Ore (Drill Core)

NICO Project, Fortune Minerals Ltd.

Sample Number[1]	Hole	Depth From	Depth To	Lithology	Mining Phase[2]	Waste Rock / Ore[3]	Sample weight(g)	Ext.Fluid #1 or #2	ExtVolume ml	Initial pH	Final pH	SO4	Hg	Al	As	Ag	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	Li	Mg	Mo	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
										units	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	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
100916	98151	13	20	Breccia	300	WASTE	100	2	400	8.90	9.46	7.90	***0.0001***	0.99	0.638	***0.0001***	0.452	***0.005***	0.10	0.0034	5.37	***0.0005***	0.0048	***0.001***	0.0050	0.30	***0.02***	0.70	0.0015	***0.001***	0.0015	0.0044	***0.005***	***0.001***	0.009	0.008	***0.0002***	0.0010	0.0011	0.0008	0.0009	0.012
100917	98151	20	28	Breccia	300	WASTE	100	2	400	9.46	9.34	21.00	***0.0001***	0.52	0.241	***0.0001***	0.337	***0.005***	0.09	0.0011	9.25	***0.0005***	0.0008	***0.001***	***0.0008***	0.05	***0.02***	0.71	0.0101	***0.001***	0.0004	0.0090	***0.005***	***0.001***	0.014	0.007	***0.0002***	0.0009	0.0014	0.0013	0.0002	0.006
100925	00233	0	9	Breccia	300	WASTE	100	2	400	8.60	9.29	2.60	***0.0001***	1.37	0.183	***0.0001***	0.583	***0.005***	0.06	0.0030	1.56	***0.0005***	0.0110	***0.001***	0.0167	1.03	***0.02***	1.20	0.0009	***0.001***	0.0004	0.0029	***0.005***	***0.001***	0.009	0.017	***0.0002***	0.0003	0.0019	0.0086	0.0013	0.011
100934	00252	27	33	Breccia	400	WASTE	100	2	400	9.15	9.68	7.10	***0.0001***	1.08	0.690	***0.0001***	0.493	***0.005***	0.08	0.0013	2.72	***0.0005***	0.0124	***0.001***	0.0085	1.04	***0.02***	0.78	0.0026	***0.001***	0.0004	0.0036	***0.005***	***0.001***	0.024	0.023	***0.0002***	0.0007	0.0017	0.1190	0.0003	0.012
Minimum										8.60	9.29	2.60	***0.0001***	0.52	0.183	***0.0001***	0.337	***0.005***	0.06	0.0011	1.56	***0.0005***	0.0008	***0.001***	***0.0008***	0.05	***0.02***	0.70	0.0009	***0.001***	0.0004	0.0029	***0.005***	***0.001***	0.009	0.007	***0.0002***	0.0003	0.0011	0.0008	0.0002	0.006
Maximum										9.46	9.68	21.00	***0.0001***	1.37	0.690	***0.0001***	0.583	***0.005***	0.10	0.0034	9.25	***0.0005***	0.0124	***0.001***	0.0167	1.04	***0.02***	1.20	0.0101	***0.001***	0.0015	0.0090	***0.005***	***0.001***	0.024	0.023	***0.0002***	0.0010	0.0019	0.1190	0.0013	0.012
Average										9.03	9.44	9.65	***0.0001***	0.99	0.438	***0.0001***	0.466	***0.005***	0.08	0.0022	4.72	***0.0005***	0.0073	***0.001***	0.0077	0.60	***0.02***	0.85	0.0038	***0.001***	0.0007	0.0050	***0.005***	***0.001***	0.014	0.014	***0.0002***	0.0007	0.0015	0.0324	0.0007	0.010
Standard Deviation										0.37	0.17	7.92	0.0000	0.35	0.263	0.0000	0.102	0.000	0.02	0.0012	3.41	0.0000	0.0054	0.000	0.0067	0.51	0.00	0.24	0.0043	0.000	0.0006	0.0028	0.000	0.000	0.007	0.008	0.0000	0.0003	0.0004	0.0578	0.0005	0.003
100817	98208	76	86	Black Rock Schist + Magnetite	400	400	100	2	400	9.75	10.17	4.10	***0.0001***	0.90	0.243	***0.0001***	0.429	***0.005***	0.08	0.0013	1.41	***0.0005***	0.0007	***0.001***	0.0009	1.35	***0.02***	1.36	0.0021	***0.001***	0.0008	0.0422	***0.005***	***0.001***	0.014	0.049	***0.0002***	***0.0002***	0.0039	0.0022	0.0002	0.007
100875	03259	96	111	Black Rock Schist + Magnetite	400	400	100	2	400	9.81	9.97	8.00	***0.0001***	0.89	0.114	***0.0001***	0.495	***0.005***	0.09	0.0014	2.66	***0.0005***	0.0013	***0.001***	***0.0008***	1.84	***0.02***	1.26	0.0073	0.001	0.0008	0.0081	***0.005***	***0.001***	0.029	0.067	***0.0002***	0.0007	0.0038	0.0013	0.0004	0.016
100890	00220	32	50	Black Rock Schist + Magnetite			100	2	400	9.47	10.14	6.20	***0.0001***	1.71	0.433	***0.0001***	0.485	***0.005***	0.10	0.0015	0.96	***0.0005***	0.0039	0.003	0.0008	2.02	***0.02***	1.78	0.0021	0.002	0.0007	0.0042	***0.005***	***0.001***	0.011	0.095	***0.0002***	***0.0002***	0.0055	0.0007	0.0003	0.023
100923	98150	45	55	Black Rock Schist + Magnetite	400	400	100	2	400	9.42	10.23	5.70	***0.0001***	1.72	0.062	***0.0001***	0.532	***0.005***	0.10	0.0006	1.09	***0.0005***	0.0007	0.001	***0.0008***	1.81	***0.02***	2.72	***0.0003***	***0.001***	0.0003	0.0198	***0.005***	***0.001***	0.008	0.089	***0.0002***	0.0002	0.0035	0.0050	0.0005	0.022
100924	98150	55	65	Black Rock Schist + Magnetite	400	400	100	2	400	9.64	10.25	6.90	***0.0001***	2.29	0.458	***0.0001***	0.591	***0.005***	0.12	0.0027	1.18	***0.0005***	0.0009	0.001	0.0352	1.72	***0.02***	3.47	0.0003	***0.001***	0.0005	0.0543	***0.005***	***0.001***	0.008	0.094	***0.0002***	0.0002	0.0046	0.0015	0.0009	0.021
100950	96023	30	46	Black Rock Schist + Magnetite			100	2	400	9.75	10.07	5.80	***0.0001***	1.83	0.851	***0.0001***	0.689	***0.005***	0.13	0.0049	2.65	***0.0005***	0.0021	0.001	0.0039	1.82	***0.02***	2.67	0.0009	***0.001***	0.0006	0.0262	***0.005***	***0.001***	0.015	0.114	***0.0002***	0.0003	0.0037	0.0010	0.0005	0.018
100961	98147	3	12	Black Rock Schist + Magnetite	400	400	100	2	400	9.57	9.99	5.90	***0.0001***	1.56	0.249	***0.0001***	0.590	***0.005***	0.10	0.0009	2.00	***0.0005***	0.0015	0.001	***0.0008***	2.01	***0.02***	1.97	***0.0003***	***0.001***	0.0003	0.0042	***0.005***	***0.001***	0.007	0.080	***0.0002***	***0.0002***	0.0040	0.0007	0.0009	0.016
100963	98147	46	61	Black Rock Schist + Magnetite	15	15	100	2	400	9.68	9.90	6.00	***0.0001***	3.33	0.737	***0.0001***	0.764	***0.005***	0.13	0.0064	2.22	***0.0005***	0.0039	0.003	0.0011	2.79	***0.02***	2.10	0.0014	0.001	0.0009	0.0075	***0.005***	***0.001***	0.010	0.187	***0.0002***	0.0006	0.0053	0.0016	0.0009	0.022
100977	96011	145	160	Black Rock Schist + Magnetite	400	400	100	2	400	9.47	10.06	4.60	***0.0001***	1.53	0.345	***0.0001***	0.638	***0.005***	0.11	***0.0003***	1.85	***0.0005***	0.0010	0.001	0.0008	1.67	***0.02***	1.66	***0.0003***	***0.001***	0.0006	0.0081	***0.005***	***0.001***	0.010	0.078	***0.0002***	***0.0002***	0.0038	0.0056	0.0005	0.018
100911	96016	138	158	Black Rock Schist + Magnetite			100	2	400	8.69	9.87	5.00	***0.0001***	1.32	0.059	***0.0001***	0.482	***0.005***	0.09	0.0040	1.94	***0.0005***	0.0018	0.002	0.0024	2.26	***0.02***	0.88	***0.0003***	***0.001***	0.0007	0.0048	***0.005***	***0.001***	0.011	0.105	***0.0002***	0.0003	0.0028	0.0004	0.0005	0.018
100912	96016	158	190	Black Rock Schist + Magnetite			100	2	400	9.70	9.76	8.60	***0.0001***	2.00	1.970	0.0001	0.537	***0.005***	0.13	0.1120	2.99	***0.0005***	0.0184	0.002	0.0366	2.44	***0.02***	0.98	0.0010	***0.001***	0.0007	0.0169	***0.005***	***0.001***	0.008	0.102	***0.0002***	0.0008	0.0025	0.2560	0.0004	0.016
100983	97035	57	68	Black Rock Schist + Magnetite	400	400	100	2	400	9.65	9.95	7.00	***0.0001***	1.03	0.994	***0.0001***	0.597	***0.005***	0.12	0.0101	3.07	***0.0005***	0.0061	***0.001***	0.0023	2.58	***0.02***	1.89	0.0032	0.001	0.0007	0.0102	***0.005***	***0.001***	0.026	0.075	***0.0002***	0.0003	0.0053	0.0013	0.0006	0.016
Minimum										8.69	9.76	4.10	***0.0001***	0.89	0.059	***0.0001***	0.429	***0.005***	0.08	***0.0003***	0.96	***0.0005***	0.0007	***0.001***	0.0008	1.35	***0.02***	0.88	0.0003	***0.001***	0.0003	0.0042	***0.005***	***0.001***	0.007	0.049	***0.0002***	***0.0002***	0.0025	0.0004	0.0002	0.007
Maximum										9.81	10.25	8.60	***0.0001***	3.33	1.970	0.0001	0.764	***0.005***	0.13	0.1120	3.07	***0.0005***	0.0184	0.003	0.0366	2.79	***0.02***	3.47	0.0073	0.002	0.0009	0.0543	***0.005***	***0.001***	0.029	0.187	***0.0002***	0.0008	0.0055	0.2560	0.0009	0.023
Average										9.55	10.03	6.15	***0.0001***	1.68	0.543	0.0001	0.569	***0.005***	0.11	0.0122	2.00	***0.0005***	0.0035	0.002	0.0072	2.03	***0.02***	1.90	0.0016	0.001	0.0006	0.0172	***0.005***	***0.001***	0.013	0.095	***0.0002***	0.0004	0.0041	0.0231	0.0006	0.018
Standard Deviation										0.30	0.15	1.32	0.0000	0.68	0.544	0.0000	0.096	0.000	0.02	0.0316	0.74	0.0000	0.0050	0.001	0.0134	0.42	0.00	0.76	0.0020	0.000	0.0002	0.0162	0.000	0.000	0.007	0.034	0.0000	0.0002	0.0010	0.0734	0.0002	0.004
100802	00231	73	83	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.70	10.20	5.00	***0.0001***	0.92	0.048	***0.0001***	0.540	***0.005***	0.10	0.0008	1.58	***0.0005***	0.0003	***0.001***	***0.0008***	1.99	***0.02***	2.37	***0.0003***	***0.001***	0.0004	0.0082	***0.005***	***0.001***	0.018	0.050	***0.0002***	***0.0002***	0.0070	0.0012	0.0004	0.018
100803	00231	83	94	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.68	10.18	9.40	***0.0001***	2.03	0.195	***0.0001***	0.517	***0.005***	0.13	0.0072	1.17	***0.0005***	0.0012	0.002	0.0073	5.99	***0.02***	2.79	***0.0003***	***0.001***	0.0019	0.1990	***0.005***	***0.001***	0.009	0.166	***0.0002***	***0.0002***	0.0067	0.0005	0.0007	0.025
100806	00236	48	60	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.66	10.23	5.90	***0.0001***	2.64	0.420	***0.0001***	0.618	***0.005***	0.10	0.0015	1.18	***0.0005***	0.0020	0.002	***0.0008***	6.96	***0.02***	4.34	0.0004	0.001	0.0130	0.0098	***0.005***	0.001	0.009	0.175	***0.0002***	0.0003	0.0042	0.0017	0.0010	0.034
100815	98208	0	5	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.59	10.10	6.80	***0.0001***	1.18	0.042	***0.0001***	0.489	***0.005***	0.09	0.0006	1.32	***0.0005***	0.0005	0.001	0.0043	2.85	***0.02***	2.93	0.0003	***0.001***	0.0008	0.0061	***0.005***	***0.001***	0.007	0.073	***0.0002***	***0.0002***	0.0051	0.0007	0.0004	0.015
100866	03258	136	138	Black Rock Schist ± Magnetite	500	WASTE	100	2	400	9.78	9.93	6.30	***0.0001***	2.91	0.071	***0.0001***	0.743	***0.005***	0.08	0.0004	2.31	***0.0005***	0.0015	0.003	0.0013	7.00	***0.02***	1.98	0.0013	0.002	0.0009	0.0064	***0.005***	0.001	0.014	0.181	***0.0002***	0.0008	0.0039	0.0013	0.0009	0.012
100884	98198	20	30	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.55	10.07	3.80	***0.0001***	0.71	0.026	***0.0001***	0.526	***0.005***	0.04	***0.0003***	2.15	***0.0005***	0.0003	***0.001***	***0.0008***	2.40	***0.02***	1.12	0.0012	***0.001***	0.0002	0.0036	***0.005***	***0.001***	0.018	0.046	***0.0002***	***0.0002***	0.0052	0.0019	0.0002	0.004
100885	98198	30	41	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.71	9.98	9.20	***0.0001***	1.51	0.166	***0.0001***	0.529	***0.005***	0.10	0.0008	3.21	***0.0005***	0.0033	0.002	0.0011	6.00	***0.02***	1.40	0.0031	***0.001***	0.0006	0.0054	***0.005***	***0.001***	0.020	0.086	***0.0002***	0.0004	0.0044	0.0408	0.0004	0.009
100900	97072	20	37	Black Rock Schist ± Magnetite			100	2	400	9.80	9.92	8.00	***0.0001***	1.41	0.043	***0.0001***	0.446	***0.005***	0.07	0.0007	2.94	***0.0005***	0.0007	0.001	0.0036	2.06	***0.02***	0.48	0.0008	***0.001***	0.0012	0.0044	***0.005***	***0.001***	0.011	0.103	***0.0002***	0.0006	0.0082	0.0019	0.0003	0.008
100901	97072	55	80	Black Rock Schist ± Magnetite			100	2	400	9.81	10.04	4.70	***0.0001***	0.56	0.353	***0.0001***	0.416	***0.005***	0.06	0.0003	1.98	***0.0005***	0.0007	***0.001***	0.0063	1.77	***0.02***	1.22	***0.0003***	***0.001***	0.0003	0.0057	***0.005***	***0.001***	0.029	0.039	***0.0002***	***0.0002***	0.0047	0.0013	0.0003	0.007
100907	00249	82	90	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.34	9.96	8.60	***0.0001***	1.25	0.733	***0.0001***	0.467	***0.005***	0.09	0.0138	1.49	***0.0005***	0.0029	0.001	0.0039	4.44	***0.02***	1.03	***0.0003***	***0.001***	0.0004	0.0177	***0.005***	***0.001***	0.012	0.104	***0.0002***	***0.0002***	0.0038	0.0102	0.0003	0.011
100919	98151	41	57	Black Rock Schist ± Magnetite			100	2	400	9.59	10.26	9.00	***0.0001***	1.53	0.626	***0.0001***	0.428	***0.005***	0.10	0.0249	0.81	***0.0005***	0.0009	0.001	0.0010	4.24	***0.02***	2.67	***0.0003***	***0.001***	0.0006	0.0085	***0.005***	***0.001***	0.009	0.108	***0.0002***	0.0003	0.0039	0.0027	0.0005	0.014
100936	00252	107	127	Black Rock Schist ± Magnetite			100	2	400	9.72	9.97	12.00	***0.0001***	1.03	0.176	***0.0001***	0.416	***0.005***	0.11	0.0011	1.99	***0.0005***	0.0008	0.001	0.0045	3.53	***0.02***	1.07	0.0010	***0.001***	0.0007	0.0074	***0.005***	***0.001***	0.016	0.069	***0.0002***	0.0002	0.0045	0.0036	0.0002	0.012
100947	97102	57	77	Black Rock Schist ± Magnetite			100	2	400	9.77	10.20	7.70	***0.0001***	1.68	0.148	***0.0001***	0.500	***0.005***	0.12	0.0472	1.69	***0.0005***	0.0007	0.002	***0.0008***	5.49	***0.02***	2.13	0.0007	***0.001***	0.0006	0.0307	***0.005***	***0.001***	0.013	0.105	***0.0002***	***0.0002***	0.0053	0.0369	0.0003	0.012
100948	97102	67	78	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.96	10.17	8.30	***0.0001***	0.15	0.377	***0.0001***	0.424	***0.005***	0.10	***0.0003***	1.97	***0.0005***	***0.0003***	***0.001***	0.0013	0.48	***0.02***	0.54	0.0010	***0.001***	***0.0002***	0.0332	***0.005***	***0.001***	0.016	0.010	***0.0002***	***0.0002***	0.0032	0.0023	***0.0001***	0.010
100959	98209	60	70	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.64	10.15	7.80	***0.0001***	0.72	0.035	***0.0001***	0.380	***0.005***	0.08	***0.0003***	1.39	***0.0005***	***0.0003***	***0.001***	0.0016	2.08	***0.02***	1.02	0.0007	***0.001***	0.0002	0.0088	***0.005***	***0.001***	0.007	0.040	***0.0002***	0.0002	0.0030	0.0036	0.0002	0.007
100966	03267	10	18	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.22	9.98	12.00	***0.0001***	0.87	0.283	***0.0001***	0.454	***0.005***	0.16	0.0008	1.41	***0.0005***	0.0004	0.001	0.0008	2.65	***0.02***	1.73	0.0007	***0.001***	0.0004	0.0251	***0.005***	***0.001***	0.010	0.050	***0.0002***	***0.0002***	0.0053	0.0014	0.0003	0.016
100888	98198	110	130	Black Rock Schist ± Magnetite			100	2	400	9.80	10.10	7.10	***0.0001***	0.78	0.133	***0.0001***	0.393	***0.005***	0.07	0.0019	2.07	***0.0005***	0.0016	< 0.001	0.0008	2.50	***0.02***	0.99	0.0047	***0.001***	0.0008	0.0103	***0.005***	***0.001***	0.018	0.052	***0.0002***	0.0008	0.0041	0.0008	0.0003	0.007
Middle Ore Zone*	03-275	37	74	Middle Ore Zone			200	2	800	7.87	9.51	***5.00***	***0.0001***	0.44	10.100	***0.0001***	0.466	***0.005***	0.14	0.0087		***0.0005***	0.0098	0.001	0.0017	1.80	***0.00***		0.0065	***0.001***	***0.0002***	0.0342	***0.005***	***0.001***	0.016	0.028	***0.0002***	0.0014	0.0037	0.0194	0.0002	0.004
Lower Ore Zone*	03-275	120	157	Lower Ore Zone			200	2	800	8.08	9.75	***5.00***	***0.0001***	1.03	3.950	***0.0001***	0.423	***0.005***	0.15	0.0281		***0.0005***	0.0072	0.002	0.0024	3.36	0.00		0.0096	0.002	0.0003	0.0284	***0.005***	***0.001***	0.009	0.052	***0.0002***	0.0029	0.0039	0.5005	0.0003	0.007
100968	03270	39	47	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.19	9.81	20.00	***0.0001***	0.98	0.591	***0.0001***	0.300	***0.005***	0.10	***0.0003***	1.57	***0.0005***	0.0003	***0.001***	0.0019	2.93	***0.02***	1.54	0.0019	***0.001***	0.0009	0.0307	***0.005***	***0.001***	0.011	0.056	***0.0002***	***0.0002***	0.0030	0.0012	0.0004	0.010
100407*	03-272	2183	81	Upper Ore Zone			200	2	800	9.68	9.82	***5.00***	***0.0001***	1.06	1.360	***0.0001***	0.478	***0.005***	0.14	0.0009		***0.0005***	0.0015	0.001	0.0035	2.89	***0.00***		0.0014	***0.001***	0.0002	0.0109	***0.005***	***0.001***	0.013	0.066	***0.0002***	0.0008	0.0071	0.0062	0.0009	0.006
100989	97036	157	165	Black Rock Schist ± Magnetite	400	WASTE	100	2	400	9.97	10.29	8.40	***0.0001***	1.72	0.049	***0.0001***	0.498	***0.005***	0.13	***0.0003***	1.90	***0.0005***	0.0006	0.001	0.0013	3.77	***0.02***	3.10	0.0133	***0.001***	0.0008	0.0117	***0.005***	***0.001***	0.010	0.111	***0.0002***	***0.0002***	0.0175	0.0016	0.0003	0.015
Minimum										7.87	9.51	3.80	***0.0001***	0.15	0.026	***0.0001***	0.300	***0.005***	0.04	***0.0003***	0.81	***0.0005***	***0.0003***	***0.001***	***0.0008***	0.48	***0.00***	0.48	***0.0003***	***0.001***	***0.0002***	0.0036	***0.005***	***0.001***	0.007	0.010	***0.0002***	***0.0002***	0.0030	0.0005	***0.0001***	0.004
Maximum										9.97	10.29	20.00	***0.0001***	2.91	10.100	***0.0001***	0.743	***0.005***	0.16	0.0472	3.21	***0.0005***	0.0098	0.003	0.0073	7.00	***0.02***	4.34	0.0133	0.002	0.0130	0.1990	***0.005***	0.001	0.029	0.181	***0.0002***	0.0029	0.0175	0.5005	0.0010	0.034
Average										9.51	10.03	7.95	***0.0001***	1.23	0.906	***0.0001***	0.475	***0.005***	0.10	0.0064	1.80	***0.0005***	0.0017	0.001	0.0024	3.51	***0.02***	1.81	0.0023	0.001	0.0012	0.0230	***0.005***	0.001	0.013	0.080	***0.0002***	0.0005	0.0053	0.0292	0.0004	0.012
Standard Deviation										0.53	0.19	3.49	0.0000	0.67	2.219	0.0000	0.089	0.000	0.03	0.0121	0.59	0.0000	0.0024	0.001	0.0019	1.79	0.01	1.01	0.0034	0.000	0.0027	0.0407	0.000	0.000	0.005	0.047	0.0000	0.0006	0.0031	0.1059	0.0002	0.007
100810	03265	69	79	Feldspar Porphyry	200	WASTE	100	2	400	9.78	9.81	9.40	***0.0001***	0.72	0.029	***0.0001***	0.496	***0.005***	0.09	0.0008	4.09	***0.0005***	0.0004	***0.001***	0.0054	0.82	***0.02***	0.54	0.0031	***0.001***	0.0005	0.0044	***0.005***	***0.001***	0.013	0.037	***0.0002***	0.0006	0.0069	0.0030	0.0004	0.009
100811	03265	79	89	Feldspar Porphyry	200	WASTE	100	2	400	9.76	9.79	5.60	***0.0001***	0.24	0.158	***0.0001***	0.474	***0.005***	0.06	***0.0003***	5.08	***0.0005***	***0.0003***	***0.001***	***0.0008***	0.07	***0.02***	0.60	0.0021	***0.001***	0.0002	0.0058	***0.005***	***0.001***	0.030	***0.003***	***0.0002***	0.0003	0.0094	0.0041	***0.0001***	0.004
100858	03257	105	109	Feldspar Porphyry	200	WASTE	100	2	400	9.76	9.85	6.20	***0.0001***	0.72	0.074	***0.0001***	0.417	***0.005***	0.08	0.0003	3.74	***0.0005***	***0.0003***	***0.001***	0.0014	0.56	***0.02***	0.55	0.0091	***0.001***	0.0018	0.0083	***0.005***	***0.001***	0.021	0.015	***0.0002***	0.0015	0.0022	0.0015	0.0003	0.007
100867	03258	138	141	Feldspar Porphyry	200	WASTE	100	2	400	9.87	9.92	4.40	***0.0001***	0.85	0.024	***0.0001***	0.458	***0.005***	0.06	***0.0003***	2.78	***0.0005***	***0.0003***	***0.001***	***0.0008***	0.82	***0.02***	0.40	0.0081	***0.001***	0.0009	0.0040	***0.005***	***0.001***	0.014	0.026	***0.0002***	0.0013	0.0016	0.0049	0.0004	0.006
100891	00220	110	113	Feldspar Porphyry	200	WASTE	100	2	400	9.88	9.95	6.50	***0.0001***	0.69	0.138	***0.0001***	0.383	***0.005***	0.06	***0.0003***	2.57	***0.0005***	0.0013	0.002	0.0009	0.69	***0.02***	0.50	0.0173	***0.001***	0.0012	0.0104	***0.005***	***0.001***	0.023	0.035	***0.0002***	0.0005	0.0134	0.0012	0.0002	0.007
100892	98152	0	15	Feldspar Porphyry	200	WASTE	100	2	400	8.44	9.62	6.40	***0.0001***	0.79	0.008	***0.0001***	0.356	***0.005***	0.06	***0.0003***	2.95	***0.0005***	0.0004	***0.001***	0.0062	0.87	***0.02***	0.49	0.0023	***0.001***	0.0008	0.0026	***0.005***	***0.001***	0.007	0.041	***0.0002***	0.0008	0.0039	0.0011	0.0005	0.010
100894	98152	30	45	Feldspar Porphyry	200	WASTE	100	2	400	9.60	9.49	30.00	***0.0001***	0.62	0.021	***0.0001***	0.315	***0.005***	0.20	0.0005	9.10	***0.0005***	0.0004	0.006	0.0036	0.60	***0.02***	1.57	0.0041	***0.001***	0.0005	0.0044	***0.005***	***0.001***	0.017	0.014	***0.0002***	0.0004	0.0049	0.0017	0.0003	0.076
100913	96016	205	209	Feldspar Porphyry	200	WASTE	100	2	400	9.76	9.94	15.00	***0.0001***	5.67	0.098	***0.0001***	0.986	***0.005***	0.24	0.0018	6.39	***0.0005***	0.0024	0.004	0.0064	6.82	***0.02***	2.93	***0.0003***	0.001	0.0024	0.0038	***0.005***	***0.001***	0.025	0.490	***0.0002***	***0.0002***	0.0233	0.0039	0.0012	0.135
100956	98197	70	80	Feldspar Porphyry	200	WASTE	100	2	400	9.71	9.87	16.00	***0.0001***	3.20	0.012	***0.0001***	0.931	***0.005***	0.28	***0.0003***	3.81	***0.0005***	0.0008	0.003	0.0014	5.48	***0.02***	1.95	0.0052	0.001	0.0010	0.0037	***0.005***	***0.001***	0.024	0.269	***0.0002***	0.0009	0.0182	0.0024	0.0014	0.141
100857	03257	65	79	Feldspar Porphyry	100	WASTE	100	2	400	9.36	9.67	18.00	***0.0001***	5.52	0.050	***0.0001***	1.010	***0.005***	0.31	0.0087	4.48	***0.0005***	0.0065	0.001	0.0012	7.60	***0.02***	1.97	0.0026	0.001	0.0035	0.0033	***0.005***	***0.001***	0.023	0.133	***0.0002***	0.0033	0.0046	0.0006	0.0023	0.112
100859	03257	110	114	Feldspar Porphyry	500	WASTE	100	2	400	9.69	9.79	15.00	***0.0001***	1.59	0.025	***0.0001***	0.651	***0.005***	0.23	***0.0003***	5.34	***0.0005***	0.0006	***0.001***	0.0013	1.71	***0.02***	0.84	0.0279	0.002	0.0016	0.0050	***0.005***	***0.001***	0.028	0.036	***0.0002***	0.0022	0.0031	0.0076	0.0010	0.069
100409*	03-275	86 104	103 114	Quartz Feldspar Porphyry			200	2	800	9.80	9.65	***5.00***	***0.0001***	1.54	2.170	***0.0001***	0.369	***0.005***	0.13	0.0063		***0.0005***	0.0038	***0.001***	0.0058	1.99	***0.00***		0.0092	***0.001***	0.0010	0.0148	***0.005***	***0.001***	0.022	0.039	***0.0002***	0.0058	0.0039	0.0283	0.0009	0.003
100410*	03-376	3	106	Feldspar Porphyry			200	2	800	9.71	9.78	***5.00***	***0.0001***	1.37	0.086	***0.0001***	0.402	***0.005***	0.13	***0.0003***		***0.0005***	0.0005	0.001	0.0056	1.53	***0.00***		0.0050	***0.001***	0.0010	0.0084	***0.005***	***0.001***	0.017	0.050	***0.0002***	0.0034	0.0174	0.0051	0.0007	0.002
Minimum										8.44	9.49	4.40	***0.0001***	0.24	0.008	***0.0001***	0.315	***0.005***	0.06	***0.0003***	2.57	***0.0005***	***0.0003***	***0.001***	***0.0008***	0.07	***0.00***	0.40	***0.0003***	***0.001***	0.0002	0.0026	***0.005***	***0.001***	0.007	***0.003***	***0.0002***	***0.0002***	0.0016	0.0006	***0.0001***	0.002
Maximum										9.88	9.95	30.00	***0.0001***	5.67	2.170	***0.0001***	1.010	***0.005***	0.31	0.0087	9.10	***0.0005***	0.0065	0.006	0.0064	7.60	***0.02***	2.93	0.0279	0.002	0.0035	0.0148	***0.005***	***0.001***	0.030	0.490	***0.0002***	0.0058	0.0233	0.0283	0.0023	0.141
Average										9.62	9.78	10.96	***0.0001***	1.81	0.223	***0.0001***	0.558	***0.005***	0.15	0.0016	4.58	***0.0005***	0.0014	0.002	0.0031	2.27	***0.02***	1.12	0.0074	0.001	0.0013	0.0061	***0.005***	***0.001***	0.020	0.091	***0.0002***	0.0016	0.0087	0.0050	0.0007	0.045
Standard Deviation										0.38	0.14	7.52	0.0000	1.83	0.587	0.0000	0.253	0.000	0.09	0.0027	1.90	0.0000	0.0019	0.002	0.0024	2.58	0.01	0.85	0.0076	0.000	0.0009	0.0035	0.000	0.000	0.006	0.139	0.0000	0.0016	0.0071	0.0073	0.0006	0.054
100854	03257	33	43	Rhyolite	20	ORE	100	2	400	8.70	9.44	20.00	***0.0001***	5.57	0.396	***0.0001***	0.668	***0.005***	0.32	0.0111	6.66	***0.0005***	0.0435	***0.001***	0.0104	3.61	***0.02***	1.91	0.0118	0.006	0.0048	0.0042	***0.005***	***0.001***	0.021	0.008	***0.0002***	0.0054	0.0016	0.0559	0.0019	0.191
100863	03258	35	50	Rhyolite	300	WASTE	100	2	400	9.75	9.70	16.00	***0.0001***	7.37	0.258	***0.0001***	0.967	***0.005***	0.29	0.0055	6.98	***0.0005***	0.0573	0.001	0.0054	4.80	***0.02***	2.55	0.0123	0.002	0.0083	0.0097	***0.005***	***0.001***	0.035	0.030	***0.0002***	0.0054	0.0026	0.0030	0.0026	0.153
100865	03258	65	77	Rhyolite	300	WASTE	100	2	400	9.66	9.75	15.00	***0.0001***	2.42	0.061	***0.0001***	0.696	***0.005***	0.22	0.0012	4.68	***0.0005***	0.0053	***0.001***	0.0015	2.17	***0.02***	1.11	0.0032	0.001	0.0018	0.0031	***0.005***	***0.001***	0.025	0.013	***0.0002***	0.0030	0.0024	0.0017	0.0008	0.116
100871	03259	22	33	Rhyolite	300	WASTE	100	2	400	9.53	9.63	16.00	***0.0001***	2.05	0.091	***0.0001***	0.560	***0.005***	0.22	0.0012	4.63	***0.0005***	0.0077	***0.001***	0.0099	2.89	***0.02***	1.49	0.0047	0.004	0.0011	0.0035	***0.005***	***0.001***	0.015	0.018	***0.0002***	0.0020	0.0017	0.0009	0.0009	0.130
100872	03259	33	43	Rhyolite	300	WASTE	100	2	400	9.38	9.75	11.00	***0.0001***	3.61	0.033	***0.0001***	0.921	***0.005***	0.21	0.0005	4.88	***0.0005***	0.0036	***0.001***	0.0085	2.66	***0.02***	1.27	0.0010	0.002	0.0043	0.0087	***0.005***	***0.001***	0.032	0.039	***0.0002***	0.0018	0.0011	0.0024	0.0009	0.099
100879	00246S	10	20	Rhyolite	300	WASTE	100	2	400	9.69	9.65	15.00	***0.0001***	2.83	0.254	***0.0001***	0.596	***0.005***	0.21	0.2650	5.20	***0.0005***	0.0137	***0.001***	0.0369	2.51	***0.02***	1.33	0.0025	0.002	0.0051	0.0091	***0.005***	***0.001***	0.016	0.008	***0.0002***	0.0026	0.0015	0.0012	0.0012	0.146
100932	00252	3	13	Rhyolite	300	WASTE	100	2	400	6.80	7.95	22.00	***0.0001***	5.92	0.124	***0.0001***	0.506	***0.005***	0.42	0.0319	1.24	***0.0005***	0.0478	0.001	0.2080	6.76	***0.02***	2.79	0.0011	0.004	0.0027	0.0022	***0.005***	***0.001***	0.013	0.026	***0.0002***	0.0060	***0.0009***	0.0147	0.0062	0.158
100944	03264	37	45	Rhyolite	300	WASTE	100	2	400	9.53	9.51	15.00	***0.0001***	2.24	0.765	***0.0001***	0.541	***0.005***	0.23	0.0246	4.58	***0.0005***	0.0131	***0.001***	0.0070	2.79	***0.02***	1.18	0.0066	***0.001***	0.0020	0.0054	***0.005***	***0.001***	0.036	0.013	***0.0002***	0.0027	0.0027	0.0020	0.0013	0.139
100951	98197	15	30	Rhyolite	300	WASTE	100	2	400	9.72	9.68	19.00	***0.0001***	3.08	0.449	0.0001	0.513	***0.005***	0.28	0.0815	5.83	***0.0005***	0.0193	***0.001***	0.0717	2.57	***0.02***	1.73	0.0038	0.002	0.0042	0.0088	***0.005***	***0.001***	0.019	0.010	***0.0002***	0.0050	0.0036	0.0074	0.0013	0.116
100972	96011	15	30	Rhyolite	300	WASTE	100	2	400	9.02	8.89	47.00	***0.0001***	0.34	0.009	***0.0001***	0.203	***0.005***	0.27	0.0006	12.00	***0.0005***	0.0004	***0.001***	0.0029	0.22	***0.02***	2.72	0.0008	***0.001***	***0.0002***	0.0024	***0.005***	***0.001***	0.022	***0.003***	***0.0002***	0.0007	***0.0009***	0.0072	0.0001	0.063
100973	96011	30	45	Rhyolite	300	WASTE	100	2	400	7.61	8.76	26.00	***0.0001***	3.75	0.054	0.0001	0.431	***0.005***	0.38	0.0024	3.20	***0.0005***	0.0104	***0.001***	0.0278	4.00	***0.02***	1.83	0.0064	0.002	0.0019	0.0024	***0.005***	***0.001***	0.014	0.050	***0.0002***	0.0041	0.0022	0.0058	0.0044	0.167
100982	97035	20	29	Rhyolite	30	ORE	100	2	400	8.92	9.48	14.00	***0.0001***	3.07	1.840	***0.0001***	0.612	***0.005***	0.26	0.0844	3.07	***0.0005***	0.1050	***0.001***	0.0137	4.79	***0.02***	2.28	0.0025	0.002	0.0017	0.0068	***0.005***	***0.001***	0.011	0.033	***0.0002***	0.0039	0.0021	0.0842	0.0016	0.097
100985	97036	0	10	Rhyolite	300	WASTE	100	2	400	7.48	8.35	15.00	***0.0001***	6.20	1.380	0.0001	0.988	***0.005***	0.37	0.2440	0.78	***0.0005***	0.0666	0.001	0.1590	7.08	***0.02***	1.66	0.0012	0.001	0.0031	0.0091	***0.005***	***0.001***	0.010	0.079	***0.0002***	0.0062	0.0019	0.0028	0.0031	0.137
100408*	03-272	0.6	18	Rhyolite			200	2	800	9.51	9.45	***5.00***	***0.0001***	2.19	1.910	***0.0001***	0.365	***0.005***	0.13	0.0322		***0.0005***	0.0083	***0.001***	0.0484	1.64	***0.00***		0.0072	***0.001***	0.0008	0.0082	***0.005***	***0.001***	0.010	0.010	***0.0002***	0.0072	0.0018	0.0128	0.0011	0.004
Minimum										6.80	7.95	5.00	***0.0001***	0.34	0.009	***0.0001***	0.203	***0.005***	0.13	0.0005	0.78	***0.0005***	0.0004	***0.001***	0.0015	0.22	***0.00***	1.11	0.0008	***0.001***	***0.0002***	0.0022	***0.005***	***0.001***	0.010	***0.003***	***0.0002***	0.0007	***0.0009***	0.0009	0.0001	0.004
Maximum										9.75	9.75	47.00	***0.0001***	7.37	1.910	0.0001	0.988	***0.005***	0.42	0.2650	12.00	***0.0005***	0.1050	0.001	0.2080	7.08	***0.02***	2.79	0.0123	0.006	0.0083	0.0097	***0.005***	***0.001***	0.036	0.079	***0.0002***	0.0072	0.0036	0.0842	0.0062	0.191
Average										8.95	9.28	18.29	***0.0001***	3.62	0.545	0.0001	0.612	***0.005***	0.27	0.0561	4.90	***0.0005***	0.0287	0.001	0.0436	3.46	***0.02***	1.83	0.0046	0.002	0.0030	0.0060	***0.005***	***0.001***	0.020	0.024	***0.0002***	0.0040	0.0019	0.0144	0.0020	0.123
Standard Deviation										0.96	0.57	9.62	0.0000	1.95	0.673	0.0000	0.226	0.000	0.08	0.0887	2.82	0.0000	0.0309	0.000	0.0633	1.89	0.00	0.58	0.0038	0.001	0.0022	0.0029	0.000	0.000	0.009	0.021	0.0000	0.0019	0.0008	0.0246	0.0016	0.047
100897	98152	108	112	Siltstone	500	WASTE	100	2	400	9.58	9.91	19.00	***0.0001***	14.80	0.030	***0.0001***	0.969	***0.005***	0.30	0.0006	3.35	***0.0005***	0.0043	0.023	0.0056	45.00	0.02	7.90	0.0007	0.009	0.0018	0.0047	***0.005***	0.002	0.016	0.998	0.0004	0.0013	0.0309	0.0321	0.0055	0.161
100914	96016	209	215	Siltstone	500	WASTE	100	2	400	9.39	9.85	12.00	***0.0001***	6.39	0.018	***0.0001***	1.040	***0.005***	0.27	0.0003	3.44	***0.0005***	0.0011	0.012	0.0012	9.94	***0.02***	2.97	0.0005	0.006	0.0015	0.0072	***0.005***	***0.001***	0.016	0.599	***0.0002***	0.0007	0.0217	0.0111	0.0026	0.137
100922	98151	110.5	114	Siltstone	500	WASTE	100	2	400	9.63	9.83	17.00	***0.0001***	7.32	0.096	***0.0001***	0.987	***0.005***	0.27	0.0005	3.83	***0.0005***	0.0025	0.012	0.0074	12.60	***0.02***	3.43	0.0025	0.005	0.0026	0.0050	***0.005***	0.001	0.021	0.605	***0.0002***	0.0009	0.0215	0.0045	0.0044	0.124
100929	00233	105.5	110	Siltstone	400	WASTE	100	2	400	9.74	9.87	15.00	***0.0001***	4.77	0.260	***0.0001***	0.911	***0.005***	0.27	0.0068	3.49	***0.0005***	0.0049	0.012	0.0051	9.55	***0.02***	2.56	0.0014	0.003	0.0017	0.0065	***0.005***	***0.001***	0.015	0.320	***0.0002***	0.0005	0.0174	0.0164	0.0017	0.094
100960	98209	126	131	Siltstone	500	WASTE	100	2	400	9.75	9.90	19.00	***0.0001***	6.15	***0.005***	***0.0001***	0.999	***0.005***	0.31	0.0004	3.22	***0.0005***	0.0007	0.011	0.0011	14.10	***0.02***	3.87	0.0008	0.005	0.0024	0.0109	***0.005***	0.001	0.017	0.439	***0.0002***	0.0006	0.0184	0.0013	0.0023	0.125
100984	97035	267	270	Siltstone	500	WASTE	100	2	400	8.88	9.72	15.00	***0.0001***	10.70	0.011	***0.0001***	1.630	***0.005***	0.35	0.0006	1.30	***0.0005***	0.0030	0.016	0.0017	21.60	***0.02***	4.54	0.0004	0.007	0.0019	0.0066	***0.005***	0.002	0.012	0.864	0.0002	0.0009	0.0191	0.0036	0.0038	0.148
100401	98-159	98	173	Siltstone			200	2	800	9.72	9.79	***5.00***	***0.0001***	0.98	0.020	***0.0001***	0.247	***0.005***	0.16	***0.0003***		***0.0005***	***0.0003***	0.002	0.0011	1.32	***0.00***		0.0021	***0.001***	***0.0002***	0.0042	***0.005***	***0.001***	0.017	0.022	***0.0002***	0.0010	0.0245	0.0057	0.0007	0.002
100402	98-170 98-196	118 194 156 224	160 250 223 256	Siltstone			200	2	800	9.82	9.88	***5.00***	***0.0001***	1.88	0.049	***0.0001***	0.215	***0.005***	0.13	***0.0003***		***0.0005***	0.0005	0.002	0.0017	2.31	***0.00***		0.0012	***0.001***	0.0003	0.0073	***0.005***	***0.001***	0.006	0.100	***0.0002***	0.0017	0.0181	0.0040	0.0004	0.002
Minimum										8.88	9.72	5.00	***0.0001***	0.98	***0.005***	***0.0001***	0.215	***0.005***	0.13	0.0003	1.30	***0.0005***	0.0003	0.002	0.0011	1.32	***0.00***	2.56	0.0004	0.001	0.0002	0.0042	***0.005***	***0.001***	0.006	0.022	***0.0002***	0.0005	0.0174	0.0013	0.0004	0.002
Maximum										9.82	9.91	19.00	***0.0001***	14.80	0.260	***0.0001***	1.630	***0.005***	0.35	0.0068	3.83	***0.0005***	0.0049	0.023	0.0074	45.00	0.02	7.90	0.0025	0.009	0.0026	0.0109	***0.005***	0.002	0.021	0.998	0.0004	0.0017	0.0309	0.0321	0.0055	0.161
Average										9.56	9.84	13.38	***0.0001***	6.62	0.061	***0.0001***	0.875	***0.005***	0.26	0.0012	3.10	***0.0005***	0.0022	0.011	0.0031	14.55	0.02	4.21	0.0012	0.005	0.0016	0.0065	***0.005***	0.001	0.015	0.493	0.0002	0.0010	0.0215	0.0098	0.0027	0.099
Standard Deviation										0.31	0.06	5.66	0.0000	4.50	0.085	0.0000	0.458	0.000	0.07	0.0023	0.91	0.0000	0.0018	0.007	0.0025	13.90	0.01	1.93	0.0008	0.003	0.0009	0.0021	0.000	0.000	0.004	0.343	0.0001	0.0004	0.0045	0.0102	0.0018	0.063
100801	00231	1	15	Sub-Arkosic Wacke	400	WASTE	100	2	400	8.78	9.04	24.00	***0.0001***	3.97	0.361	***0.0001***	0.496	***0.005***	0.45	0.0018	3.55	***0.0005***	0.0077	0.003	0.0405	9.84	***0.02***	4.09	0.0003	0.001	0.0024	0.0044	***0.005***	***0.001***	0.009	0.179	***0.0002***	0.0004	0.0044	0.0009	0.0019	0.094
100808	03265	10	20	Sub-Arkosic Wacke	400	WASTE	100	2	400	9.42	9.86	15.00	***0.0001***	3.57	0.038	***0.0001***	1.020	***0.005***	0.33	0.0006	4.39	***0.0005***	0.0006	0.002	0.0061	9.94	***0.02***	2.88	***0.0003***	0.001	0.0214	0.0041	***0.005***	***0.001***	0.014	0.203	***0.0002***	0.0004	0.0049	0.0303	0.0011	0.094
100809	03265	20	31	Sub-Arkosic Wacke	400	WASTE	100	2	400	8.08	9.81	14.00	***0.0001***	4.86	0.904	***0.0001***	1.080	***0.005***	0.35	0.0029	2.77	***0.0005***	0.0031	0.003	***0.0008***	12.90	***0.02***	6.84	0.0004	***0.001***	0.0030	0.0029	***0.005***	***0.001***	0.011	0.204	***0.0002***	0.0007	0.0051	0.0008	0.0013	0.117
100813	03265	157	160	Sub-Arkosic Wacke	500	WASTE	100	2	400	9.27	9.85	17.00	***0.0001***	9.21	0.013	***0.0001***	1.320	***0.005***	0.31	0.0004	2.09	***0.0005***	0.0021	0.014	0.0175	18.50	***0.02***	3.78	0.0010	0.006	0.0023	0.0056	***0.005***	***0.001***	0.019	0.512	***0.0002***	0.0005	0.0196	0.0005	0.0027	0.151
100881	00246S	31	37	Sub-Arkosic Wacke	400	WASTE	100	2	400	9.73	9.90	19.00	***0.0001***	12.70	0.106	***0.0001***	1.220	***0.005***	0.70	0.0060	4.45	***0.0005***	0.0092	0.022	0.0040	34.00	***0.02***	11.10	0.0012	0.009	0.0013	0.0024	***0.005***	0.002	0.024	0.398	0.0003	0.0009	0.0270	0.0003	0.0020	0.258
100883	98198	10	20	Sub-Arkosic Wacke	400	WASTE	100	2	400	9.80	9.93	15.00	***0.0001***	6.61	0.033	***0.0001***	1.160	***0.005***	0.66	0.0011	5.32	***0.0005***	0.0029	0.005	0.0040	19.90	***0.02***	6.23	0.0005	0.002	0.0011	0.0032	***0.005***	***0.001***	0.031	0.334	0.0002	0.0007	0.0081	0.0044	0.0025	0.192
100886	98198	66	72	Sub-Arkosic Wacke	20	ORE	100	2	400	9.66	9.99	13.00	***0.0001***	4.63	0.015	***0.0001***	0.911	***0.005***	0.26	0.0005	4.91	***0.0005***	0.0021	0.003	0.0031	14.90	***0.02***	2.39	0.0014	***0.001***	0.0012	0.0034	***0.005***	***0.001***	0.019	0.391	***0.0002***	0.0006	0.0116	0.0074	0.0017	0.102
100906	00249	71	82	Sub-Arkosic Wacke	400	WASTE	100	2	400	9.40	10.08	18.00	***0.0001***	15.90	0.348	***0.0001***	2.070	***0.005***	0.57	0.0367	2.81	***0.0005***	0.0034	0.009	0.0013	43.80	***0.02***	15.30	0.0019	0.004	0.0036	0.0384	***0.005***	0.001	0.016	0.723	0.0004	0.0019	0.0125	0.1140	0.0062	0.225
100926	00233	9	16	Sub-Arkosic Wacke	300	WASTE	100	2	400	9.66	9.68	16.00	***0.0001***	6.65	0.158	***0.0001***	0.839	***0.005***	0.30	0.0032	5.79	***0.0005***	0.0196	0.004	0.0201	9.14	***0.02***	3.62	0.0022	0.002	0.0013	0.0052	***0.005***	***0.001***	0.014	0.097	***0.0002***	0.0015	0.0100	0.0018	0.0039	0.118
100987	97036	63	72	Sub-Arkosic Wacke	400	WASTE	100	2	400	8.98	9.75	15.00	***0.0001***	7.22	0.021	***0.0001***	1.510	***0.005***	0.29	0.0010	1.17	***0.0005***	0.0025	0.005	0.0024	19.10	***0.02***	4.42	0.0009	0.002	0.0028	0.0056	***0.005***	***0.001***	0.012	0.461	0.0002	0.0011	0.0086	0.0008	0.0026	0.109
100996	00241	0	10	Sub-Arkosic Wacke	400	WASTE	100	2	400	9.02	9.60	16.00	***0.0001***	10.00	0.108	***0.0001***	1.330	***0.005***	0.64	0.0155	2.41	***0.0005***	0.0121	0.007	0.0416	26.90	***0.02***	10.30	***0.0003***	0.003	0.0014	0.0027	***0.005***	***0.001***	0.012	0.448	0.0002	0.0009	0.0102	0.0010	0.0038	0.239
Minimum										8.08	9.04	13.00	***0.0001***	3.57	0.013	***0.0001***	0.496	***0.005***	0.26	0.0004	1.17	***0.0005***	0.0006	0.002	***0.0008***	9.14	***0.02***	2.39	***0.0003***	***0.001***	0.0011	0.0024	***0.005***	***0.001***	0.009	0.097	***0.0002***	0.0004	0.0044	0.0003	0.0011	0.094
Maximum										9.80	10.08	24.00	***0.0001***	15.90	0.904	***0.0001***	2.070	***0.005***	0.70	0.0367	5.79	***0.0005***	0.0196	0.022	0.0416	43.80	***0.02***	15.30	0.0022	0.009	0.0214	0.0384	***0.005***	0.002	0.031	0.723	0.0004	0.0019	0.0270	0.1140	0.0062	0.258
Average										9.25	9.77	16.55	***0.0001***	7.76	0.191	***0.0001***	1.178	***0.005***	0.44	0.0063	3.61	***0.0005***	0.0059	0.007	0.0129	19.90	***0.02***	6.45	0.0009	0.003	0.0038	0.0071	***0.005***	0.001	0.016	0.359	0.0002	0.0009	0.0111	0.0147	0.0027	0.154
Standard Deviation										0.51	0.28	3.01	0.0000	3.88	0.268	0.0000	0.405	0.000	0.17	0.0110	1.47	0.0000	0.0058	0.006	0.0153	11.01	0.00	4.11	0.0007	0.003	0.0059	0.0105	0.000	0.000	0.007	0.181	0.0001	0.0005	0.0068	0.0341	0.0015	0.063

bold italic Bold italic formatting indicates a value that is less than the analytical detection limit.

1. Golder sample ID.
2. Block model code according to P&E mine block model
3. Classification of ore according to P&E mine block model

Appendix IV-4b

Short-Term Leach Test Results - Synthethic Precipitation Leaching Procedure - Tailings

NICO Project, Fortune Minerals Ltd.

Sample ID	Sample weight	Initial pH	Final pH	CN(T)	CNWAD	CNS	CNO	Hg	Al	As	Ag	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li
	g	units	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	mg/L
Bulk Rougher Tails	200	9.61	9.19					< 0.0001	0.808	0.807	< 0.00001	0.426	0.00006	0.0918	0.0766	10.1	< 0.000003	0.00790	0.0041	0.0038	3.75	12.0	0.005
Bulk Cleaner Tails	200	9.53	9.00					< 0.0001	1.24	1.25	< 0.00001	0.497	0.00009	0.250	0.152	12.5	0.000010	0.0164	0.0034	0.0051	5.92	18.2	0.007
PP#14	200	8.94	8.66					< 0.0001	0.0292	0.271	< 0.00001	0.170	< 0.00002	0.179	0.00181	37.5	< 0.000003	0.000996	< 0.0005	0.0070	0.02	19.9	0.004

Sample ID	Sample weight	Initial pH	Final pH	CN(T)	CNWAD	CNS	CNO	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
	g	units	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	mg/L	mg/L
Bulk Rougher Tails	200	9.61	9.19					3.54	0.0382	0.00517	8.00	0.0065	0.00120	0.0180	0.008	0.00024	0.0315	0.0469	< 0.00002	0.0113	0.00180	0.0164	0.000603	0.026
Bulk Cleaner Tails	200	9.53	9.00					5.70	0.0525	0.00743	13.9	0.0034	0.00176	0.0330	0.019	0.00031	0.0524	0.0765	0.00002	0.0145	0.00199	0.0302	0.000750	0.047
PP#14	200	8.94	8.66					7.29	0.0200	0.00712	9.50	0.0014	0.00018	0.0217	0.014	0.00002	0.0646	0.0010	< 0.00002	0.0130	0.00036	0.00464	0.000019	0.021

Appendix IV-5a

Short-Term Leach Test Results - Shake Flask Extraction - Drill Core Samples (Typical Sample Preparation)

NICO Project, Fortune Minerals Ltd.

Sample Number	Lithology	Hole	Depth From		To	Sample weight(g)	Volume mL D.I. H2O	InitialpH units	Final pH units	Acidity mg/L as CaCO3	pH units	Alkalinity mg/L as CaCO3	Conductivity uS/cm	SO4 mg/L	Cl mg/L	Al mg/L	As mg/L	Ag mg/L	Ba mg/L	Be mg/L	B mg/L	Bi mg/L	Ca mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	K mg/L	Li mg/L
NICO-08-011	Rhyolite	03282	4.3	-	13.4	300	900	9.7	9.49	***2***	9.00	39	86	2.1	3.4	0.264	0.303	***0.00001***	0.491	***0.00002***	0.0557	0.00128	2.98	0.000005	0.00146	***0.0005***	0.0072	0.30	16.0	0.002
NICO-08-012	Rhyolite	03282	31.7	-	41.3	300	900	9.6	9.46	***2***	8.95	28	84	4.8	1.6	0.372	0.116	***0.00001***	0.425	***0.00002***	0.0460	0.00245	4.13	0.000013	0.000355	***0.0005***	0.0050	0.29	14.7	0.002
NICO-08-013	Feldspar Porphyry	03282	117.04	-	126.2	300	900	9.8	9.42	***2***	8.85	36	121	4.0	6.4	0.358	0.379	***0.00001***	0.468	***0.00002***	0.0583	0.00003	3.55	0.000008	0.000250	***0.0005***	***0.0005***	0.42	17.3	0.222

Sample Number	Lithology	Hole	Depth From		To	Sample weight(g)	Volume mL D.I. H2O	InitialpH units	Final pH units	Acidity mg/L as CaCO3	Mg mg/L	pH units	Alkalinity mg/L as CaCO3	Conductivity uS/cm	Mn mg/L	Mo mg/L	Na mg/L	Ni mg/L	Pb mg/L	Sb mg/L	Se mg/L	Sn mg/L	Sr mg/L	Ti mg/L	Tl mg/L	U mg/L	V mg/L	W mg/L	Y mg/L	Zn mg/L
NICO-08-011	Rhyolite	03282	4.3	-	13.4	300	900	9.7	9.49	***2***	0.660	9.00	39	86	0.00236	0.0108	4.14	0.0017	0.00013	0.0187	0.001	***0.00001***	0.0183	0.0014	***0.000002***	0.00290	0.00143	0.00924	0.000131	0.003
NICO-08-012	Rhyolite	03282	31.7	-	41.3	300	900	9.6	9.46	***2***	0.545	8.95	28	84	0.00224	0.0358	3.89	0.0016	0.00039	0.0148	0.001	***0.00001***	0.0239	0.0029	***0.000002***	0.00590	0.00108	0.0620	0.000148	0.002
NICO-08-013	Feldspar Porphyry	03282	117.04	-	126.2	300	900	9.8	9.42	***2***	0.738	8.85	36	121	0.00370	0.0264	8.98	0.0014	0.00014	0.0778	***0.001***	0.00003	0.0282	0.0063	***0.000002***	0.00187	0.00280	0.124	0.000156	0.003

bold italic Indicates values is less than the analytical detection limit.

Appendix IV-5b

Short-Term Leach Test Results - Shake Flask Extraction - Mineralized Waste and Ore - Bulk Sample Stockpile Samples (No Sample Modification)

NICO Project, Fortune Minerals Ltd.

Sample ID	Pile ID	Depth	Waste / Ore[1]	Dominant Lithology[2]	Sample weight(g)	Volume mL D.I. H2O	InitialpH units	Final pH units	Acidity mg/L as CaCO3	pH units	Alkalinity mg/L as CaCO3	Conductivity uS/cm	SO4 mg/L	Cl mg/L	Al mg/L	As mg/L	Ag mg/L	Ba mg/L	Be mg/L
Oct 5 DS-1	Oct 5 DS	0 m (Surface)	Sub-economic mineralized mine rock	FP	300	900	9.49	9.60	***2***	9.33	30	86	2.1	1.9	0.523	1.83	***0.00001***	0.446	***0.00002***
Oct 5 DS-2	Oct 5 DS	0 - 2m	Sub-economic mineralized mine rock	FP	300	900	9.59	9.50	***2***	9.34	43	126	5.7	3.8	0.419	2.18	***0.00001***	0.391	***0.00002***
Oct 5 DS-3	Oct 5 DS	2 - 4m	Sub-economic mineralized mine rock	FP	300	900	9.58	9.61	***2***	9.25	40	110	6.9	2.8	0.447	1.64	***0.00001***	0.409	***0.00002***
FC-1	Oct 5 DS	–	Sub-economic mineralized mine rock	FP	300	900	9.60	9.66	***2***	9.59	36	110	5.2	3.3	0.338	2.58	0.00024	0.271	0.0002
Minimum							9.49	9.50	***2***	9.25	30	86	2.1	1.9	0.338	1.64	***1.E-05***	0.271	***2.E-05***
Maximum							9.60	9.66	***2***	9.59	43	126	6.9	3.8	0.523	2.58	2.E-04	0.446	2.E-04
Average							9.57	9.59	***2***	9.38	37	108	5.0	3.0	0.432	2.06	7.E-05	0.379	7.E-05
Standard Deviation							0.05	0.07	0	0.15	6	16	2.0	0.8	0.076	0.41	1.E-04	0.076	9.E-05
Oct 9 NS-1	Oct 9 NS	0 m (Surface)	Sub-economic mineralized mine rock	BRS±mt	300	900	9.59	10.12	***2***	10.00	32	97	4.7	3.3	0.263	0.05	0.00032	0.336	***0.00002***
Oct 9 NS-2	Oct 9 NS	0 - 1m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.75	9.92	***2***	9.90	30	92	3.8	3.5	0.141	0.05	0.00004	0.465	***0.00002***
Oct 9 NS-3	Oct 9 NS	2 - 4m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.64	9.82	***2***	9.71	34	109	7.7	3.8	0.127	0.07	0.00003	0.405	***0.00002***
Oct 9 NS-4	Oct 9 NS	4m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.57	9.82	***2***	9.73	33	118	11.0	4.0	0.166	0.05	***0.00001***	0.355	***0.00002***
Mar 10 NS-1	Mar 10 NS	0 m (Surface)	Sub-economic mineralized mine rock	BRS±mt	300	900	9.30	9.72	***2***	9.46	46	175	11.0	3.9	0.058	1.65	0.00007	0.386	0.00002
Mar 10 NS-2	Mar 10 NS	1 - 2m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.12	9.57	***2***	9.41	46	170	12.0	4.6	0.056	2.90	0.00003	0.380	***0.00002***
Mar 10 NS-3	Mar 10 NS	2 - 3m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.24	9.74	***2***	9.50	51	178	18.0	4.4	0.076	1.81	0.00003	0.321	***0.00002***
Mar 10 NS-4	Mar 10 NS	4m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.10	9.75	***2***	9.48	49	166	12.0	3.7	0.048	1.27	0.00002	0.375	***0.00002***
Mar 8 NS-1	Mar 8 NS	0 m (Surface)	Sub-economic mineralized mine rock	BRS±mt	300	900	8.62	9.72	***2***	9.12	22	138	24.0	3.7	0.176	0.49	0.00002	0.250	***0.00002***
Mar 8 NS-2	Mar 8 NS	0 - 1m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.23	9.71	***2***	9.08	24	103	9.6	3.2	0.220	1.39	0.00002	0.336	***0.00002***
Mar 8 NS-3	Mar 8 NS	1 - 2m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.16	9.77	***2***	9.12	25	105	9.3	3.7	0.272	0.63	0.00001	0.354	***0.00002***
Mar 8 NS-4	Mar 8 NS	4m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.16	9.13	***2***	9.12	25	128	19.0	3.6	0.195	0.44	0.00001	0.269	***0.00002***
Mar 6 NS-1	Mar 6 NS	0 m (Surface)	Sub-economic mineralized mine rock	BRS±mt	300	900	8.48	9.74	***2***	9.06	22	97	10.0	2.7	0.200	0.29	0.00002	0.348	***0.00002***
Mar 6 NS-2	Mar 6 NS	0 - 1m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.34	9.85	***2***	9.44	30	104	7.1	3.8	0.319	0.33	***0.00001***	0.379	***0.00002***
Mar 6 NS-3	Mar 6 NS	1 - 2m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.47	9.82	***2***	9.35	34	126	10.0	3.3	0.249	0.32	***0.00001***	0.373	***0.00002***
Mar 6 NS-4	Mar 6 NS	4m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.40	9.71	***2***	9.30	34	128	12.0	3.8	0.241	0.25	***0.00001***	0.372	***0.00002***
FC-2	Oct 9 NS	–	Sub-economic mineralized mine rock	BRS±mt	300	900	9.59	9.86	***2***	9.86	31	101	9.5	3.8	0.165	0.05	0.00017	0.280	0.00011
FC-3	Mar 10 NS	–	Sub-economic mineralized mine rock	BRS±mt	300	900	9.22	9.81	***2***	9.79	49	154	14.0	3.5	0.150	1.89	0.00014	0.265	0.00008
FC-4	Mar 8 NS	–	Sub-economic mineralized mine rock	BRS±mt	300	900	9.22	9.77	***2***	9.49	24	101	14.0	2.5	0.249	0.48	0.00009	0.243	0.00004
Minimum							8.48	9.13	***2***	9.06	22	92	3.8	2.5	0.048	0.05	***1.E-05***	0.243	***2.E-05***
Maximum							9.75	10.12	***2***	10.00	51	178	24.0	4.6	0.319	2.90	3.E-04	0.465	1.E-04
Average							9.27	9.76	***2***	9.47	34	126	11.5	3.6	0.177	0.76	6.E-05	0.342	3.E-05
Standard Deviation							0.32	0.19	0	0.30	10	29	4.9	0.5	0.080	0.82	8.E-05	0.058	2.E-05
Oct 10 NS-1	Oct 10 NS	0 m (Surface)	ore	BRS±mt	300	900	9.58	9.77	***2***	9.61	31	104	8.2	2.6	0.232	0.57	***0.00001***	0.357	***0.00002***
Oct 10 NS-2	Oct 10 NS	1 - 2m	ore	BRS±mt	300	900	9.61	9.64	***2***	9.52	30	99	5.9	3.2	0.219	0.60	***0.00001***	0.409	***0.00002***
Oct 10 NS-3	Oct 10 NS	2 - 3m	ore	BRS±mt	300	900	9.54	9.73	***2***	9.78	35	112	6.5	3.6	0.187	0.77	***0.00001***	0.395	***0.00002***
Oct 10 NS-4	Oct 10 NS	3 - 4m	ore	BRS±mt	300	900	9.60	9.76	***2***	9.79	33	94	4.7	2.5	0.303	0.64	***0.00001***	0.417	***0.00002***
Oct 12 DS-1	Oct 12 DS	0 m (Surface)	ore	BRS±mt	300	900	9.32	9.31	***2***	9.16	16	395	86.0	4.9	0.143	0.54	***0.00001***	0.012	***0.00002***
Oct 12 DS-2	Oct 12 DS	0 - 1m	ore	BRS±mt	300	900	9.72	9.63	***2***	9.58	32	111	6.2	2.9	0.219	0.98	***0.00001***	0.383	***0.00002***
Oct 12 DS-3	Oct 12 DS	1 - 2m	ore	BRS±mt	300	900	9.61	9.70	***2***	9.55	36	145	12.0	3.4	0.178	1.25	***0.00001***	0.349	***0.00002***
Oct 12 DS-4	Oct 12 DS	3 - 4m	ore	BRS±mt	300	900	9.64	9.77	***2***	9.57	35	129	11.0	3.2	0.192	0.84	***0.00001***	0.347	***0.00002***
Oct 11 DS-1	Oct 11 DS	0 m (Surface)	ore	BRS±mt	300	900	8.68	9.97	***2***	9.78	30	86	2.3	2.1	0.485	0.07	***0.00001***	0.433	***0.00002***
Oct 11 DS-2	Oct 11 DS	0 - 1m	ore	BRS±mt	300	900	9.64	9.78	***2***	9.50	36	121	7.2	3.3	0.222	0.29	0.00002	0.425	***0.00002***
Oct 11 DS-3	Oct 11 DS	1 - 2m	ore	BRS±mt	300	900	9.66	9.76	***2***	9.51	37	135	9.7	3.5	0.199	0.23	0.00001	0.385	***0.00002***
Oct 11 DS-4	Oct 11 DS	4m	ore	BRS±mt	300	900	9.65	9.69	***2***	9.41	39	136	9.9	2.9	0.242	0.33	***0.00001***	0.380	***0.00002***
Oct 9 DS-1	Oct 9 DS	0 - 1m	ore	BRS±mt	300	900	9.55	9.65	***2***	9.49	30	89	5.4	2.8	0.204	0.04	0.00086	0.415	0.00012
Oct 9 DS-2	Oct 9 DS	2 - 3m	ore	BRS±mt	300	900	9.45	9.51	***2***	9.30	33	138	17.0	3.5	0.145	0.08	0.00025	0.298	0.00011
Oct 9 DS-3	Oct 9 DS	4m	ore	BRS±mt	300	900	9.35	9.71	***2***	9.32	30	140	17.0	3.3	0.135	0.03	0.00007	0.307	0.00003
Aug 27 DS-1	Aug 27 DS	0 m (Surface)	ore	BRS±mt	300	900	9.38	9.27	***2***	8.10	24	117	6.4	3.0	0.139	7.69	***0.0005***	0.387	***0.00002***
Aug 27 DS-2	Aug 27 DS	0 - 1m	ore	BRS±mt	300	900	9.52	9.18	***2***	8.31	30	151	11.0	3.2	0.114	7.43	***0.0005***	0.368	***0.00002***
Aug 27 DS-3	Aug 27 DS	2 - 3m	ore	BRS±mt	300	900	9.34	9.08	***2***	8.22	39	172	23.0	3.5	0.046	6.90	***0.0005***	0.279	***0.00002***
Aug 27 DS-4	Aug 27 DS	4m	ore	BRS±mt	300	900	9.34	9.09	***2***	8.44	27	167	22.0	3.6	0.046	6.17	***0.0005***	0.260	***0.00002***
Aug 28 DS-1	Aug 28 DS	0 - 1m	ore	BRS±mt	300	900	9.52	9.11	***2***	8.44	31	177	19.0	4.4	0.073	8.84	***0.0005***	0.295	***0.00002***
Aug 28 DS-2	Aug 28 DS	1 - 2m	ore	BRS±mt	300	900	9.39	9.17	***2***	9.03	34	177	20.0	4.2	0.059	9.08	0.00071	0.273	0.00016
Aug 28 DS-3	Aug 28 DS	2 - 3m	ore	BRS±mt	300	900	9.41	9.14	***2***	8.49	32	179	20.0	4.8	0.073	8.98	0.0002	0.291	0.00015
Aug 28 DS-4	Aug 28 DS	4m	ore	BRS±mt	300	900	9.47	9.00	***2***	8.14	29	156	15.0	3.8	0.089	9.62	0.00002	0.319	0.00004
Aug 21 NS-1	Aug 21 NS	0 m (Surface)	ore	BRS±mt	300	900	9.39	9.63	***2***	8.91	27	125	13.0	3.4	0.194	1.60	***0.0005***	0.299	***0.00002***
Aug 21 NS-2	Aug 21 NS	0 - 1m	ore	BRS±mt	300	900	9.52	9.47	***2***	8.78	28	145	19.0	3.4	0.143	0.73	0.00003	0.277	***0.00002***
Aug 21 NS-3	Aug 21 NS	2 - 3m	ore	BRS±mt	300	900	9.53	9.65	***2***	8.90	30	147	21.0	2.9	0.127	0.83	0.00004	0.263	***0.00002***
Aug 21 NS-4	Aug 21 NS	4m	ore	BRS±mt	300	900	9.53	9.61	***2***	8.76	30	146	19.0	3.8	0.162	1.67	0.00001	0.276	***0.00002***
Aug 20 NS-1	Aug 20 NS	0 m (Surface)	ore	BRS±mt	300	900	9.50	9.76	***2***	8.87	28	100	5.8	3.3	0.271	1.40	***0.0005***	0.368	***0.00002***
Aug 20 NS-2	Aug 20 NS	0 - 1m	ore	BRS±mt	300	900	9.47	9.77	***2***	8.95	29	117	5.5	4.8	0.202	1.50	***0.0005***	0.410	***0.00002***
Aug 20 NS-3	Aug 20 NS	1 - 2m	ore	BRS±mt	300	900	9.48	9.74	***2***	9.01	32	154	18.0	4.0	0.132	2.44	***0.0005***	0.277	***0.00002***
Aug 20 NS-4	Aug 20 NS	4m	ore	BRS±mt	300	900	9.44	9.40	***2***	8.89	32	154	18.0	5.2	0.168	2.42	***0.0005***	0.293	***0.00002***
Aug 18 NS-1	Aug 18 NS	0 - 1m	ore	BRS±mt	300	900	9.68	9.43	***2***	8.52	27	137	11.0	4.5	0.173	1.30	0.00001	0.342	***0.00002***
Aug 18 NS-2	Aug 18 NS	1 - 2m	ore	BRS±mt	300	900	9.63	9.54	***2***	8.75	31	150	15.0	5.4	0.191	3.94	***0.0005***	0.320	***0.00002***
Aug 18 NS-3	Aug 18 NS	4m	ore	BRS±mt	300	900	9.57	9.49	***2***	8.68	32	150	15.0	6.8	0.228	1.96	***0.0005***	0.319	***0.00002***
Aug 23 DS-1	Aug 23 DS	0 m (Surface)	ore	BRS±mt	300	900	9.54	9.68	***2***	8.86	29	103	6.9	3.3	0.259	0.76	***0.0005***	0.373	***0.00002***
Aug 23 DS-2	Aug 23 DS	0 - 1m	ore	BRS±mt	300	900	9.12	9.48	***2***	8.57	26	114	7.8	3.4	0.243	0.86	0.00002	0.359	***0.00002***
Aug 23 DS-3	Aug 23 DS	1 - 3m	ore	BRS±mt	300	900	9.33	9.44	***2***	8.53	22	132	17.0	3.7	0.127	0.45	***0.0005***	0.277	***0.00002***
Aug 23 DS-4	Aug 23 DS	4m	ore	BRS±mt	300	900	9.47	9.63	***2***	9.60	39	122	13.0	3.5	0.186	2.04	***0.0005***	0.308	***0.00002***
Aug 24 DS-1	Aug 24 DS	0 - 1m	ore	BRS±mt	300	900	9.33	9.57	***2***	9.30	27	126	16.0	3.0	0.293	1.86	***0.0005***	0.183	***0.00002***
Aug 24 DS-2	Aug 24 DS	1 - 3m	ore	BRS±mt	300	900	9.32	9.37	***2***	9.29	26	178	37.0	3.4	0.167	1.41	***0.0005***	0.156	***0.00002***
Aug 24 DS-3	Aug 24 DS	4m	ore	BRS±mt	300	900	9.41	9.53	***2***	9.25	24	143	22.0	3.7	0.186	1.72	0.00098	0.192	0.00031
FC-5	Aug 28 DS	–	ore	BRS±mt	300	900	9.41	9.31	***2***	8.70	23	94	7.4	1.5	0.170	6.11	0.00003	0.296	0.00003
Minimum							8.68	9.00	***2***	8.10	16	86	2.3	1.5	0.046	0.03	***1.E-05***	0.012	***2.E-05***
Maximum							9.72	9.97	***2***	9.79	39	395	86.0	6.8	0.485	9.62	1.E-03	0.433	3.E-04
Average							9.47	9.52	***2***	9.03	30	140	15.1	3.6	0.180	2.55	3.E-04	0.318	4.E-05
Standard Deviation							0.18	0.24	0	0.49	5	48	13.2	0.9	0.079	2.97	3.E-04	0.081	6.E-05

Sample ID	B mg/L	Bi mg/L	Ca mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	K mg/L	Li mg/L	Mg mg/L	Mn mg/L	Mo mg/L	Na mg/L	Ni mg/L	Pb mg/L	Sb mg/L	Se mg/L	Sn mg/L	Sr mg/L	Ti mg/L	Tl mg/L	U mg/L	V mg/L	W mg/L	Y mg/L	Zn mg/L
Oct 5 DS-1	0.0355	0.0064	3.71	***0.000003***	0.000474	***0.0005***	***0.0005***	0.41	12.5	0.003	0.432	0.0021	0.005	5.43	0.0001	0.00042	0.0162	0.006	***0.00001***	0.0173	0.0087	***0.000002***	0.003	0.0071	0.0023	0.000069	0.002
Oct 5 DS-2	0.0526	0.0047	3.73	***0.000003***	0.000467	***0.0005***	***0.0005***	0.19	18.5	0.005	0.538	0.0012	0.005	7.46	0.0001	0.00030	0.0235	0.007	***0.00001***	0.0208	0.0054	0.000004	0.005	0.0093	0.0166	0.000041	0.002
Oct 5 DS-3	0.0491	0.0035	4.35	***0.000003***	0.000525	***0.0005***	***0.0005***	0.27	13.4	0.004	0.598	0.0015	0.008	7.20	0.0002	0.00046	0.0164	0.009	***0.00001***	0.0248	0.0076	***0.000002***	0.004	0.0078	0.0045	0.000065	0.002
FC-1	0.0366	0.0021	3.73	0.000174	0.000735	***0.0005***	0.0005	0.37	15.9	0.004	0.574	0.0021	0.005	7.85	0.0003	0.00069	0.0205	0.006	0.00001	0.0186	0.0099	0.000196	0.008	0.0083	0.0063	0.00024	0.001
Minimum	0.0355	0.0021	3.71	***3.E-06***	5.E-04	***5.E-04***	***5.E-04***	0.19	12.50	0.003	0.432	0.0012	0.005	5.43	0.0001	0.00030	0.0162	0.006	***1.E-05***	0.0173	0.0054	***2.E-06***	0.003	0.0071	0.0023	4.E-05	0.001
Maximum	0.0526	0.0064	4.35	2.E-04	7.E-04	***5.E-04***	5.E-04	0.41	18.50	0.005	0.598	0.0021	0.008	7.85	0.0003	0.00069	0.0235	0.009	1.E-05	0.0248	0.0099	2.E-04	0.008	0.0093	0.0166	2.E-04	0.002
Average	0.0435	0.0042	3.88	5.E-05	6.E-04	***5.E-04***	5.E-04	0.31	15.08	0.004	0.536	0.0017	0.006	6.99	0.0002	0.00047	0.0192	0.007	1.E-05	0.0204	0.0079	5.E-05	0.005	0.0081	0.0074	1.E-04	0.002
Standard Deviation	0.0087	0.0018	0.31	9.E-05	1.E-04	0.E+00	0.E+00	0.10	2.70	0.001	0.073	0.0004	0.001	1.07	0.0001	0.00016	0.0035	0.001	0.E+00	0.0033	0.0019	1.E-04	0.002	0.0009	0.0063	9.E-05	0.001
Oct 9 NS-1	0.0561	0.0579	5.14	0.000006	0.000214	***0.0005***	0.0007	0.50	13.4	0.002	0.414	0.0034	0.007	6.17	0.0003	0.00020	0.0573	0.039	***0.00001***	0.0152	0.0042	0.000017	0.000	0.0006	0.0014	0.000064	0.001
Oct 9 NS-2	0.0533	0.0548	5.00	0.000009	0.000171	***0.0005***	***0.0005***	0.24	12	0.002	0.453	0.0021	0.011	5.24	0.0002	0.00020	0.0745	0.052	***0.00001***	0.0190	0.0028	0.000012	0.000	0.0003	0.0024	0.000039	0.001
Oct 9 NS-3	0.0595	0.0429	4.81	0.000013	0.000197	***0.0005***	0.0006	0.14	12.5	0.002	0.648	0.0013	0.017	6.70	0.0007	0.00023	0.0792	0.060	***0.00001***	0.0211	0.0021	0.000006	0.000	0.0002	0.0033	0.000025	0.002
Oct 9 NS-4	0.0673	0.0428	5.43	0.000004	0.000254	***0.0005***	***0.0005***	0.33	12.6	0.003	0.696	0.0024	0.011	7.29	0.0002	0.00023	0.0751	0.056	***0.00001***	0.0196	0.0038	***0.000002***	0.000	0.0004	0.0104	0.000044	0.001
Mar 10 NS-1	0.0788	0.0100	4.09	0.000027	0.000743	***0.0005***	***0.0005***	0.22	31.8	0.002	0.865	0.0016	0.012	7.47	0.0001	0.00018	0.1540	0.013	***0.00001***	0.0265	0.0027	0.000034	0.001	0.0028	0.1760	0.000047	0.001
Mar 10 NS-2	0.0745	0.0063	5.08	0.000015	0.000717	***0.0005***	***0.0005***	0.22	25.1	0.003	1.300	0.0019	0.013	7.75	0.0002	0.00013	0.1360	0.015	***0.00001***	0.0232	0.0027	0.000016	0.001	0.0030	0.0809	0.00004	0.005
Mar 10 NS-3	0.0814	0.0097	4.17	0.000011	0.000795	***0.0005***	0.0008	0.26	26.7	0.002	1.260	0.0021	0.007	8.65	0.0002	0.00016	0.1310	0.017	***0.00001***	0.0230	0.0031	0.000016	0.000	0.0025	0.0939	0.000038	0.005
Mar 10 NS-4	0.0695	0.0095	4.06	0.000005	0.000703	***0.0005***	0.0005	0.19	23	0.003	1.240	0.0014	0.005	9.24	***0.0001***	0.00008	0.1460	0.017	***0.00001***	0.0249	0.0018	0.00001	0.001	0.0038	0.0974	0.000033	0.001
Mar 8 NS-1	0.0582	0.0235	8.58	0.000005	0.000645	***0.0005***	0.0014	0.31	16.4	0.004	1.180	0.0025	0.009	5.30	0.0003	0.00023	0.1110	0.035	***0.00001***	0.0128	0.0032	0.000003	0.000	0.0007	0.2870	0.000033	0.002
Mar 8 NS-2	0.0470	0.0214	6.46	***0.000003***	0.000904	***0.0005***	0.0014	0.52	11.9	0.003	1.040	0.0031	0.003	4.16	0.0001	0.00022	0.0960	0.025	***0.00001***	0.0124	0.0049	0.000002	0.000	0.0011	0.1520	0.000048	0.001
Mar 8 NS-3	0.0562	0.0424	6.23	***0.000003***	0.0011	***0.0005***	0.0022	0.55	12	0.003	0.972	0.0037	0.003	4.43	0.0002	0.00045	0.1000	0.037	***0.00001***	0.0123	0.0057	***0.000002***	0.000	0.0007	0.1540	0.000048	0.002
Mar 8 NS-4	0.0555	0.0253	8.37	***0.000003***	0.000762	***0.0005***	0.0013	0.32	13.5	0.004	1.400	0.0023	0.004	4.55	0.0001	0.00018	0.1090	0.044	***0.00001***	0.0125	0.0033	***0.000002***	0.000	0.0006	0.2370	0.000032	0.001
Mar 6 NS-1	0.0577	0.0555	5.35	***0.000003***	0.000941	***0.0005***	0.0012	0.48	12.5	0.003	0.796	0.0031	0.008	4.39	0.0002	0.00033	0.1180	0.038	***0.00001***	0.0119	0.0049	***0.000002***	0.000	0.0003	0.1980	0.000052	0.001
Mar 6 NS-2	0.0505	0.0537	4.49	***0.000003***	0.000693	***0.0005***	0.0007	0.33	17.1	0.003	0.534	0.0023	0.008	4.08	0.0001	0.00025	0.0935	0.058	***0.00001***	0.0127	0.0042	***0.000002***	0.000	0.0002	0.1530	0.000038	0.002
Mar 6 NS-3	0.0732	0.0613	4.24	0.000004	0.000696	***0.0005***	***0.0005***	0.36	21.5	0.003	0.480	0.0025	0.014	5.57	0.0001	0.00018	0.1170	0.060	***0.00001***	0.0137	0.0046	***0.000002***	0.000	0.0002	0.1680	0.00004	0.001
Mar 6 NS-4	0.0741	0.0612	4.84	***0.000003***	0.000614	***0.0005***	***0.0005***	0.35	20.9	0.003	0.593	0.0023	0.012	5.35	0.0002	0.00019	0.1170	0.058	0.00002	0.0145	0.0043	***0.000002***	0.000	0.0002	0.2390	0.000035	0.002
FC-2	0.0496	0.0600	5.32	0.000097	0.000406	***0.0005***	0.0008	0.48	11.2	0.004	0.815	0.0042	0.009	6.01	0.0003	0.00063	0.0720	0.062	***0.00001***	0.0189	0.0065	0.000099	0.001	0.0004	0.0155	0.000169	0.001
FC-3	0.0566	0.0255	4.14	0.000073	0.00126	***0.0005***	0.0011	0.62	24.8	0.002	1.420	0.0044	0.006	8.18	0.0002	0.00050	0.1250	0.017	***0.00001***	0.0194	0.0081	0.000078	0.001	0.0036	0.2300	0.000162	0.002
FC-4	0.0408	0.0623	7.67	0.000017	0.00132	***0.0005***	0.0032	1.16	10.5	0.003	1.200	0.0071	0.003	4.08	0.0002	0.00052	0.1060	0.035	***0.00001***	0.0101	0.0108	0.00002	0.000	0.0008	0.0917	0.000116	0.002
Minimum	0.0408	0.0063	4.06	***3.E-06***	2.E-04	***5.E-04***	***5.E-04***	0.14	10.50	0.002	0.414	0.0013	0.003	4.08	***0.0001***	0.00008	0.0573	0.013	***1.E-05***	0.0101	0.0018	***2.E-06***	0.000	0.0002	0.0014	3.E-05	0.001
Maximum	0.0814	0.0623	8.58	1.E-04	1.E-03	***5.E-04***	3.E-03	1.16	31.80	0.004	1.420	0.0071	0.017	9.24	0.0007	0.00063	0.1540	0.062	2.E-05	0.0265	0.0108	1.E-04	0.001	0.0038	0.2870	2.E-04	0.005
Average	0.0610	0.0382	5.45	2.E-05	7.E-04	***5.E-04***	1.E-03	0.40	17.34	0.003	0.911	0.0028	0.008	6.03	0.0002	0.00027	0.1062	0.039	1.E-05	0.0170	0.0044	2.E-05	0.000	0.0012	0.1258	6.E-05	0.002
Standard Deviation	0.0115	0.0206	1.41	3.E-05	3.E-04	2.E-19	7.E-04	0.23	6.44	0.001	0.340	0.0014	0.004	1.65	0.0001	0.00015	0.0266	0.018	2.E-06	0.0050	0.0022	3.E-05	0.000	0.0012	0.0913	4.E-05	0.001
Oct 10 NS-1	0.0493	0.0090	5.05	***0.000003***	0.000463	***0.0005***	0.0007	0.22	12.1	0.002	0.530	0.0023	0.012	6.77	0.0002	0.00030	0.0336	0.011	***0.00001***	0.0229	0.0041	***0.000002***	0.005	0.0029	0.0060	0.000048	0.002
Oct 10 NS-2	0.0485	0.0150	5.93	***0.000003***	0.000436	***0.0005***	0.0005	0.38	10.6	0.003	0.777	0.0040	0.007	5.25	0.0002	0.00029	0.0462	0.015	***0.00001***	0.0270	0.0053	***0.000002***	0.003	0.0022	0.0135	0.000056	0.002
Oct 10 NS-3	0.0517	0.0125	5.42	***0.000003***	0.0004	***0.0005***	***0.0005***	0.26	13.1	0.003	0.738	0.0027	0.008	6.34	0.0001	0.00026	0.0557	0.018	***0.00001***	0.0242	0.0035	***0.000002***	0.003	0.0020	0.0224	0.000039	0.001
Oct 10 NS-4	0.0530	0.0097	4.20	***0.000003***	0.000433	***0.0005***	0.0006	0.27	11.8	0.003	0.528	0.0028	0.006	5.65	0.0002	0.00025	0.0397	0.015	***0.00001***	0.0213	0.0048	***0.000002***	0.003	0.0025	0.0086	0.000042	0.002
Oct 12 DS-1	0.0926	0.0081	27.50	***0.000003***	0.000548	***0.0005***	0.0008	***0.01***	42	0.006	3.050	0.0014	0.010	20.40	0.0004	***0.00002***	0.0590	0.054	***0.00001***	0.0648	0.0005	0.000014	0.001	0.0004	0.0749	***0.000001***	***0.001***
Oct 12 DS-2	0.0565	0.0086	5.26	***0.000003***	0.000328	***0.0005***	0.0005	0.20	15.6	0.003	0.701	0.0027	0.004	5.30	0.0001	0.00023	0.0489	0.023	***0.00001***	0.0210	0.0027	***0.000002***	0.003	0.0011	0.0556	0.000036	0.001
Oct 12 DS-3	0.0772	0.0132	4.81	***0.000003***	0.000498	***0.0005***	0.0006	0.25	23.6	0.003	0.734	0.0031	0.007	7.58	0.0002	0.00021	0.0789	0.035	***0.00001***	0.0222	0.0040	***0.000002***	0.003	0.0013	0.1480	0.000041	0.001
Oct 12 DS-4	0.0707	0.0144	4.96	***0.000003***	0.000476	***0.0005***	0.0007	0.28	17.4	0.003	0.741	0.0033	0.007	7.37	0.0002	0.00022	0.0609	0.030	***0.00001***	0.0224	0.0041	***0.000002***	0.003	0.0013	0.1880	0.000044	0.001
Oct 11 DS-1	0.0400	0.0018	3.77	***0.000003***	0.000109	***0.0005***	***0.0005***	0.29	12.7	0.002	0.265	0.0020	0.002	5.39	0.0002	0.00010	0.0128	0.003	***0.00001***	0.0141	0.0080	***0.000002***	0.002	0.0057	0.0124	0.000047	0.003
Oct 11 DS-2	0.0560	0.0071	4.17	0.000003	0.000216	***0.0005***	***0.0005***	0.24	15.4	0.002	0.530	0.0031	0.014	8.87	0.0001	0.00021	0.0456	0.015	***0.00001***	0.0248	0.0036	***0.000002***	0.005	0.0029	0.0163	0.000039	0.001
Oct 11 DS-3	0.0694	0.0124	4.13	0.000003	0.000234	***0.0005***	0.0006	0.25	19.1	0.002	0.578	0.0032	0.016	9.29	0.0001	0.00030	0.0598	0.025	***0.00001***	0.0248	0.0038	***0.000002***	0.005	0.0019	0.0238	0.000048	0.002
Oct 11 DS-4	0.0644	0.0074	3.59	***0.000003***	0.000249	***0.0005***	0.0006	0.26	20.7	0.003	0.505	0.0030	0.018	9.80	0.0002	0.00032	0.0466	0.018	***0.00001***	0.0236	0.0047	***0.000002***	0.008	0.0038	0.0311	0.000041	0.002
Oct 9 DS-1	0.0486	0.0339	6.15	0.000124	0.0003	***0.0005***	0.0005	0.37	7.42	0.002	0.685	0.0025	0.007	4.57	0.0004	0.00054	0.0721	0.064	***0.00001***	0.0200	0.0039	0.000134	0.001	0.0005	0.0033	0.000159	0.002
Oct 9 DS-2	0.0662	0.0173	8.13	0.000116	0.000407	***0.0005***	0.0005	0.24	12.1	0.003	1.210	0.0022	0.017	6.63	0.0006	0.00071	0.0882	0.091	***0.00001***	0.0243	0.0030	0.000123	0.001	0.0007	0.0052	0.000142	0.002
Oct 9 DS-3	0.0592	0.0197	8.27	0.000029	0.000226	***0.0005***	***0.0005***	0.27	12.9	0.003	1.110	0.0020	0.016	6.76	0.0002	0.00032	0.1010	0.095	***0.00001***	0.0194	0.0028	0.000028	0.000	0.0003	0.0032	0.000059	0.001
Aug 27 DS-1	0.0490	0.0022	8.94	***0.000003***	0.00402	***0.0005***	***0.0005***	0.38	9.71	0.003	1.590	0.0030	0.005	5.25	0.0002	0.00011	0.0372	0.007	***0.00001***	0.0145	0.0032	***0.000002***	0.000	0.0024	0.0157	0.000041	0.002
Aug 27 DS-2	0.0709	0.0055	9.14	***0.000003***	0.00281	***0.0005***	***0.0005***	0.21	17.4	0.006	1.700	0.0023	0.005	6.55	0.0002	0.00015	0.0538	0.004	***0.00001***	0.0181	0.0025	***0.000002***	0.002	0.0024	0.0178	0.000025	0.002
Aug 27 DS-3	0.0804	0.0031	14.20	***0.000003***	0.00365	***0.0005***	***0.0005***	0.07	8.72	0.005	2.810	0.0020	0.004	6.51	0.0003	0.00004	0.0511	0.006	***0.00001***	0.0234	0.0008	***0.000002***	0.001	0.0016	0.0203	0.000009	0.002
Aug 27 DS-4	0.0690	0.0015	14.40	***0.000003***	0.0031	***0.0005***	***0.0005***	0.07	8.41	0.005	2.790	0.0021	0.005	5.47	0.0004	0.00007	0.0518	0.006	***0.00001***	0.0213	0.0007	***0.000002***	0.001	0.0015	0.0207	0.000008	0.001
Aug 28 DS-1	0.0758	0.0012	12.20	***0.000003***	0.00224	***0.0005***	***0.0005***	0.23	12.8	0.005	2.950	0.0031	0.009	9.22	0.0002	0.00009	0.0624	0.004	***0.00001***	0.0276	0.0018	***0.000002***	0.003	0.0016	0.0578	0.000023	0.002
Aug 28 DS-2	0.0735	0.0012	12.50	0.00015	0.002	***0.0005***	***0.0005***	0.26	10.1	0.003	3.230	0.0035	0.004	9.02	0.0003	0.00023	0.0582	0.003	***0.00001***	0.0253	0.0019	0.000175	0.003	0.0015	0.0561	0.000182	0.001
Aug 28 DS-3	0.0743	0.0010	13.10	0.000171	0.00173	***0.0005***	***0.0005***	0.22	11.5	0.004	3.170	0.0037	0.008	8.21	0.0004	0.00021	0.0598	0.003	***0.00001***	0.0268	0.0017	0.000164	0.002	0.0013	0.0217	0.000266	0.002
Aug 28 DS-4	0.0647	0.0014	11.30	0.000042	0.00246	***0.0005***	***0.0005***	0.25	11.3	0.004	2.750	0.0034	0.006	7.52	0.0003	0.00019	0.0520	0.004	***0.00001***	0.0239	0.0019	0.000044	0.001	0.0017	0.0655	0.000068	0.002
Aug 21 NS-1	0.0581	0.0016	5.78	0.000014	0.0017	***0.0005***	0.0006	0.36	12.2	0.003	0.845	0.0030	0.012	8.84	0.0003	0.00036	0.0409	0.005	***0.00001***	0.0170	0.0054	0.000015	0.002	0.0042	0.0204	0.000068	0.002
Aug 21 NS-2	0.0544	0.0033	6.87	0.000012	0.000913	***0.0005***	***0.0005***	0.49	9.73	0.004	1.340	0.0042	0.009	11.20	0.0003	0.00029	0.0474	0.005	***0.00001***	0.0208	0.0047	0.000013	0.001	0.0025	0.0188	0.000074	0.002
Aug 21 NS-3	0.0644	0.0028	6.65	0.000011	0.000875	***0.0005***	***0.0005***	0.48	7.68	0.002	1.240	0.0038	0.008	12.90	0.0002	0.00020	0.0575	0.004	***0.00001***	0.0204	0.0041	0.000009	0.001	0.0025	0.0152	0.000058	0.001
Aug 21 NS-4	0.0598	0.0027	7.13	0.000008	0.00147	***0.0005***	***0.0005***	0.49	9.35	0.003	1.330	0.0043	0.015	12.30	0.0003	0.00040	0.0596	0.003	***0.00001***	0.0215	0.0047	0.000005	0.002	0.0027	0.0892	0.000068	0.002
Aug 20 NS-1	0.0489	0.0010	4.07	0.000003	0.00123	***0.0005***	0.0007	0.32	13.3	0.002	0.544	0.0025	0.006	6.67	0.0003	0.00041	0.0250	0.003	***0.00001***	0.0150	0.0062	0.000004	0.005	0.0065	0.0167	0.000053	0.002
Aug 20 NS-2	0.0541	0.0013	4.98	***0.000003***	0.000997	***0.0005***	***0.0005***	0.38	16.4	0.003	0.713	0.0031	0.006	6.22	0.0003	0.00037	0.0324	0.003	***0.00001***	0.0168	0.0049	***0.000002***	0.003	0.0042	0.0258	0.000047	0.001
Aug 20 NS-3	0.0851	0.0007	6.51	***0.000003***	0.00106	***0.0005***	0.0007	0.16	17.1	0.003	0.991	0.0017	0.010	10.10	0.0004	0.00024	0.0373	0.005	***0.00001***	0.0218	0.0024	***0.000002***	0.005	0.0052	0.0284	0.000025	0.001
Aug 20 NS-4	0.0869	0.0013	6.51	0.000003	0.00159	***0.0005***	0.0009	0.27	16.9	0.003	1.070	0.0027	0.011	10.10	0.0003	0.00040	0.0365	0.005	***0.00001***	0.0226	0.0044	***0.000002***	0.007	0.0052	0.0434	0.000043	0.002
Aug 18 NS-1	0.0861	0.0007	6.89	***0.000003***	0.000826	***0.0005***	***0.0005***	0.32	12.8	0.002	1.060	0.0036	0.006	9.14	0.0002	0.00021	0.0320	0.005	***0.00001***	0.0245	0.0037	***0.000002***	0.003	0.0030	0.0061	0.000045	0.002
Aug 18 NS-2	0.0855	0.0008	6.90	***0.000003***	0.00199	***0.0005***	0.0005	0.40	15.9	0.003	1.090	0.0043	0.007	9.44	0.0004	0.00028	0.0426	0.005	***0.00001***	0.0253	0.0049	***0.000002***	0.005	0.0039	0.0101	0.000048	0.002
Aug 18 NS-3	0.0630	0.0011	6.38	***0.000003***	0.00183	***0.0005***	0.0011	0.44	15.4	0.003	0.965	0.0050	0.007	9.89	0.0003	0.00043	0.0309	0.004	***0.00001***	0.0278	0.0056	***0.000002***	0.003	0.0034	0.0068	0.000054	0.002
Aug 23 DS-1	0.0515	0.0051	4.64	***0.000003***	0.00108	***0.0005***	0.0007	0.40	13	0.003	0.582	0.0027	0.006	7.34	0.0003	0.00070	0.0534	0.009	***0.00001***	0.0159	0.0059	***0.000002***	0.004	0.0043	0.0133	0.000059	0.002
Aug 23 DS-2	0.0455	0.0062	7.19	***0.000003***	0.00114	***0.0005***	0.0005	0.56	10.6	0.003	1.020	0.0046	0.006	6.73	0.0003	0.00074	0.0672	0.007	***0.00001***	0.0233	0.0065	***0.000002***	0.003	0.0025	0.0205	0.000085	0.002
Aug 23 DS-3	0.0560	0.0075	9.26	***0.000003***	0.000936	***0.0005***	0.0005	0.40	10.8	0.004	1.390	0.0035	0.004	5.57	0.0004	0.00052	0.0826	0.014	***0.00001***	0.0175	0.0042	***0.000002***	0.002	0.0012	0.1330	0.000048	0.002
Aug 23 DS-4	0.0584	0.0054	6.94	0.000006	0.00136	***0.0005***	***0.0005***	0.55	14.5	0.004	1.120	0.0041	0.011	6.53	0.0003	0.00084	0.0774	0.008	***0.00001***	0.0151	0.0055	***0.000002***	0.002	0.0027	0.0174	0.00006	0.003
Aug 24 DS-1	0.0487	0.0075	6.99	0.000004	0.00417	***0.0005***	0.0007	1.06	16.6	0.005	1.210	0.0073	0.009	5.90	0.0004	0.00105	0.0786	0.010	***0.00001***	0.0146	0.0122	0.000002	0.004	0.0023	0.0175	0.000118	0.004
Aug 24 DS-2	0.0513	0.0063	9.69	0.000004	0.00263	***0.0005***	0.0006	0.56	23	0.007	1.720	0.0044	0.018	6.41	0.0003	0.00055	0.0898	0.014	***0.00001***	0.0184	0.0064	***0.000002***	0.006	0.0015	0.0290	0.000065	0.003
Aug 24 DS-3	0.0553	0.0072	7.27	0.00031	0.00291	***0.0005***	0.0008	0.76	19.4	0.005	1.200	0.0055	0.006	6.31	0.0005	0.00102	0.0860	0.011	***0.00001***	0.0150	0.0079	0.000313	0.004	0.0019	0.0186	0.000363	0.003
FC-5	0.0349	0.0047	7.69	0.00002	0.00415	***0.0005***	***0.0005***	0.80	8.6	0.002	1.480	0.0054	0.002	4.42	0.0002	0.00027	0.0278	0.003	***0.00001***	0.0158	0.0064	0.000022	0.001	0.0018	0.0115	0.000088	0.002
Minimum	0.0349	0.0007	3.59	***3.E-06***	1.E-04	***5.E-04***	***5.E-04***	***0.01***	7.42	0.002	0.265	0.0014	0.002	4.42	0.0001	***0.00002***	0.0128	0.003	***1.E-05***	0.0141	0.0005	***2.E-06***	0.000	0.0003	0.0032	***1.E-06***	***0.001***
Maximum	0.0926	0.0339	27.50	3.E-04	4.E-03	***5.E-04***	1.E-03	1.06	42.00	0.007	3.230	0.0073	0.018	20.40	0.0006	0.00105	0.1010	0.095	***1.E-05***	0.0648	0.0122	3.E-04	0.008	0.0065	0.1880	4.E-04	0.004
Average	0.0621	0.0065	7.75	3.E-05	1.E-03	***5.E-04***	6.E-04	0.35	14.28	0.003	1.300	0.0033	0.008	7.85	0.0003	0.00035	0.0543	0.016	***1.E-05***	0.0221	0.0043	3.E-05	0.003	0.0025	0.0340	7.E-05	0.002
Standard Deviation	0.0138	0.0066	4.21	6.E-05	1.E-03	3.E-19	1.E-04	0.20	5.91	0.001	0.830	0.0012	0.004	2.85	0.0001	0.00024	0.0196	0.022	1.E-20	0.0078	0.0022	6.E-05	0.002	0.0014	0.0400	7.E-05	0.001

bold italic Indicates values is less than the analytical detection limit.

1. Sample classified as "waste" or "ore" according to average assay grades of each pile (as provided by Fortune) and August 2008 cut-off criterion.
2. Lithology based on dominant visible lithology in field. Rock may be diluted with minor proportions of other lithologies of waste rock.

Appendix IV-5c
Short-Term Leach Test Results - Shake Flask Extraction - Sub-economic mineralized mine rock and Ore - Bulk Sample Stockpile Samples (Typical Sample Preparation)
NICO Project, Fortune Minerals Ltd.

Sample ID	Pile ID	Depth	Waste / Ore[1]	Dominant Lithology[2]	Sample weight(g)	Volume mL D.I. H2O	InitialpH units	Final pH units	Acidity mg/L as CaCO3	pH units	Alkalinity mg/L as CaCO3	Conductivity uS/cm	SO4 mg/L	Cl mg/L	Al mg/L	As mg/L	Ag mg/L	Ba mg/L	Be mg/L	B mg/L	Bi mg/L	Ca mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	K mg/L	Li mg/L
Oct 9 NS-1	Oct 9 NS	0 m (Surface)	Sub-economic mineralized mine rock	BRS±mt	300	900	9.8	9.80	***2***	9.59	29	102	6.1	3.3	0.150	0.0369	0.00013	0.369	0.00003	0.0573	0.0182	5.46	0.000026	0.000215	***0.0005***	***0.0005***	0.33	13.2	0.003
Oct 9 NS-2	Oct 9 NS	0 - 1m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.6	9.59	46	9.34	***2***	***1***	13	3.6	0.107	0.0223	0.00002	0.315	0.00002	0.0683	0.0160	6.05	0.000022	0.000124	***0.0005***	***0.0005***	0.22	14.3	0.003
Mar 10 NS-1	Mar 10 NS	0 m (Surface)	Sub-economic mineralized mine rock	BRS±mt	300	900	9.5	9.48	***2***	9.25	43	178	20	2.3	0.122	0.490	***0.00001***	0.295	***0.00002***	0.0920	0.0150	4.07	0.000006	0.000839	***0.0005***	0.0006	0.43	29.8	0.002
Mar 10 NS-2	Mar 10 NS	1 - 2m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.4	9.56	***2***	9.38	50	183	20	2.7	0.112	0.607	***0.00001***	0.289	***0.00002***	0.0715	0.0151	4.16	0.000005	0.000831	***0.0005***	0.0008	0.40	25.9	0.002
Aug 27 DS-1	Aug 27 DS	0 m (Surface)	ore	BRS±mt	300	900	9.5	8.95	4	7.79	27	166	17	4.0	0.0719	3.33	0.00002	0.322	0.00004	0.0839	0.0100	12.3	0.000023	0.00185	***0.0005***	0.0006	0.36	9.20	0.006
Aug 27 DS-2	Aug 27 DS	0 - 1m	ore	BRS±mt	300	900	9.5	9.19	***2***	8.08	25	153	19	3.0	0.0999	2.90	***0.00001***	0.301	***0.00002***	0.0935	0.00348	10.8	0.000005	0.00179	***0.0005***	0.0006	0.47	12.0	0.004
Oct 10 NS-1	Oct 10 NS	0 m (Surface)	ore	BRS±mt	300	900	9.6	9.46	***2***	9.22	34	138	12	4.9	0.267	0.343	***0.00001***	0.342	***0.00002***	0.0681	0.00806	4.98	0.000014	0.000502	***0.0005***	0.0008	0.51	17.0	0.004
Oct 10 NS-2	Oct 10 NS	1 - 2m	ore	BRS±mt	300	900	9.5	9.39	***2***	9.18	36	137	14	3.4	0.230	0.340	***0.00001***	0.334	***0.00002***	0.0702	0.0127	5.78	0.000015	0.000708	***0.0005***	0.0008	0.47	18.4	0.004

Sample ID	Pile ID	Depth	Waste / Ore[1]	Dominant Lithology[2]	Sample weight(g)	Volume mL D.I. H2O	InitialpH units	Final pH units	Acidity mg/L as CaCO3	pH units	Alkalinity mg/L as CaCO3	Conductivity uS/cm	Mg mg/L	Mn mg/L	Mo mg/L	Na mg/L	Ni mg/L	Pb mg/L	Sb mg/L	Se mg/L	Sn mg/L	Sr mg/L	Ti mg/L	Tl mg/L	U mg/L	V mg/L	W mg/L	Y mg/L	Zn mg/L
Oct 9 NS-1	Oct 9 NS	0 m (Surface)	Sub-economic mineralized mine rock	BRS±mt	300	900	9.8	9.80	***2***	9.59	29	102	0.666	0.00878	0.0118	6.27	0.0012	0.00022	0.0562	0.056	***0.00001***	0.0181	0.0038	0.000049	0.000262	0.00027	0.00298	0.000077	0.001
Oct 9 NS-2	Oct 9 NS	0 - 1m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.6	9.59	46	9.34	***2***	***1***	1.04	0.00471	0.0118	5.63	0.0009	0.00015	0.0557	0.068	***0.00001***	0.0246	0.0026	0.000016	0.000364	0.00013	0.00195	0.000057	0.001
Mar 10 NS-1	Mar 10 NS	0 m (Surface)	Sub-economic mineralized mine rock	BRS±mt	300	900	9.5	9.48	***2***	9.25	43	178	1.25	0.00485	0.0118	8.04	0.0018	0.00024	0.102	0.016	***0.00001***	0.0271	0.0058	0.000006	0.000468	0.00165	0.111	0.000045	0.001
Mar 10 NS-2	Mar 10 NS	1 - 2m	Sub-economic mineralized mine rock	BRS±mt	300	900	9.4	9.56	***2***	9.38	50	183	1.34	0.00410	0.0107	8.92	0.0022	0.00016	0.107	0.020	0.00001	0.0223	0.0053	0.000006	0.000785	0.00139	0.170	0.000048	0.001
Aug 27 DS-1	Aug 27 DS	0 m (Surface)	ore	BRS±mt	300	900	9.5	8.95	4	7.79	27	166	2.53	0.00553	0.00465	11.8	0.0025	0.00009	0.0365	0.009	***0.00001***	0.0246	0.0028	0.000019	0.00150	0.00122	0.0189	0.000067	0.002
Aug 27 DS-2	Aug 27 DS	0 - 1m	ore	BRS±mt	300	900	9.5	9.19	***2***	8.08	25	153	2.26	0.00414	0.00399	7.19	0.0022	0.00019	0.0283	0.008	0.00001	0.0199	0.0040	***0.000002***	0.00140	0.00226	0.0197	0.000051	0.003
Oct 10 NS-1	Oct 10 NS	0 m (Surface)	ore	BRS±mt	300	900	9.6	9.46	***2***	9.22	34	138	0.824	0.00597	0.0142	9.48	0.0011	0.00041	0.0329	0.016	0.00001	0.0261	0.0095	***0.000002***	0.00430	0.00398	0.00435	0.000106	0.002
Oct 10 NS-2	Oct 10 NS	1 - 2m	ore	BRS±mt	300	900	9.5	9.39	***2***	9.18	36	137	1.19	0.00545	0.0143	7.81	0.0014	0.00036	0.0444	0.022	0.00003	0.0327	0.0071	0.000012	0.00401	0.00183	0.112	0.000076	0.002

bold italic Indicates values is less than the analytical detection limit.

1. Sample classified as "waste" or "ore" according to average assay grades of each pile (as provided by Fortune) and August 2008 cut-off criterion.
2. Lithology based on dominant visible lithology in field. Rock may be diluted with minor proportions of other lithologies of waste rock.

Appendix IV-5d
Comparison of Results of Shake Flask Extraction Testing Conducted on Unmodified and Crushed/Ground Samples
Nico Project, Fortune Minerals Ltd.

Sample Preparation[1]		Typical Preparation	No Preparation		Typical Preparation	No Preparation		Typical Preparation	No Preparation		Typical Preparation	No Preparation	
Sample ID		Oct 9 NS-1	Oct 9 NS-1		Oct 9 NS-2	Oct 9 NS-2		Mar 10 NS-1	Mar 10 NS-1		Mar 10 NS-2	Mar 10 NS-2	
Depth		0 m (Surface)	0 m (Surface)	Relative Percent Difference	0 - 1m	0 - 1m	Relative Percent Difference	0 m (Surface)	0 m (Surface)	Relative Percent Difference	1 - 2m	1 - 2m	Relative Percent Difference
Sub-economic mineralized mine rock / Ore2		Sub-economic mineralized mine rock	Sub-economic mineralized mine rock		Sub-economic mineralized mine rock	Sub-economic mineralized mine rock		Sub-economic mineralized mine rock	Sub-economic mineralized mine rock		Sub-economic mineralized mine rock	Sub-economic mineralized mine rock	
Dominant Lithology[3]		BRS±mt	BRS±mt		BRS±mt	BRS±mt		BRS±mt	BRS±mt		BRS±mt	BRS±mt	
Acidity	**mg/L as CaCO3**	2	2	0%	46	2	***183%***	2	2	0%	2	2	0%
pH	**units**	9.59	10	4%	9.34	9.9	6%	9.25	9.46	2%	9.38	9.41	0%
Alkalinity	**mg/L as CaCO3**	29	32	10%	2	30	***175%***	43	46	7%	50	46	8%
Conductivity	**uS/cm**	102	97	5%	1	92	***196%***	178	175	2%	183	170	7%
SO4	**mg/L**	6.1	4.7	26%	13	3.8	***110%***	20	11	***58%***	20	12	***50%***
Cl	**mg/L**	3.3	3.3	0%	3.6	3.5	3%	2.3	3.9	***52%***	2.7	4.6	***52%***
Al	**mg/L**	0.15	0.263	***55%***	0.107	0.141	27%	0.122	0.0582	***71%***	0.112	0.0557	***67%***
As	**mg/L**	0.0369	0.0516	***33%***	0.0223	0.0515	***79%***	0.49	1.65	***108%***	0.607	2.9	***131%***
Ag	**mg/L**	0.00013	0.00032	***84%***	0.00002	0.00004	***67%***	0.00001	0.00007	***150%***	0.00001	0.00003	***100%***
Ba	**mg/L**	0.369	0.336	9%	0.315	0.465	***38%***	0.295	0.386	27%	0.289	0.38	27%
Be	**mg/L**	0.00003	0.00002	***40%***	0.00002	0.00002	0%	0.00002	0.00002	0%	0.00002	0.00002	0%
B	**mg/L**	0.0573	0.0561	2%	0.0683	0.0533	25%	0.092	0.0788	15%	0.0715	0.0745	4%
Bi	**mg/L**	0.0182	0.0579	***104%***	0.016	0.0548	***110%***	0.015	0.01	***40%***	0.0151	0.00626	***83%***
Ca	**mg/L**	5.46	5.14	6%	6.05	5	19%	4.07	4.09	0%	4.16	5.08	20%
Cd	**mg/L**	0.000026	0.000006	***125%***	0.000022	0.000009	***84%***	0.000006	0.000027	***127%***	0.000005	0.000015	***100%***
Co	**mg/L**	0.000215	0.000214	0%	0.000124	0.000171	***32%***	0.000839	0.000743	12%	0.000831	0.000717	15%
Cr	**mg/L**	0.0005	0.0005	0%	0.0005	0.0005	0%	0.0005	0.0005	0%	0.0005	0.0005	0%
Cu	**mg/L**	0.0005	0.0007	***33%***	0.0005	0.0005	0%	0.0006	0.0005	18%	0.0008	0.0005	***46%***
Fe	**mg/L**	0.33	0.5	***41%***	0.22	0.24	9%	0.43	0.22	***65%***	0.4	0.22	***58%***
K	**mg/L**	13.2	13.4	2%	14.3	12	17%	29.8	31.8	6%	25.9	25.1	3%
Li	**mg/L**	0.003	0.002	***40%***	0.003	0.002	***40%***	0.002	0.002	0%	0.002	0.003	***40%***
Mg	**mg/L**	0.666	0.414	***47%***	1.04	0.453	***79%***	1.25	0.865	***36%***	1.34	1.3	3%
Mn	**mg/L**	0.00878	0.00336	***89%***	0.00471	0.00209	***77%***	0.00485	0.00156	***103%***	0.0041	0.00185	***76%***
Mo	**mg/L**	0.0118	0.00743	***45%***	0.0118	0.0112	5%	0.0118	0.0116	2%	0.0107	0.0127	17%
Na	**mg/L**	6.27	6.17	2%	5.63	5.24	7%	8.04	7.47	7%	8.92	7.75	14%
Ni	**mg/L**	0.0012	0.0003	***120%***	0.0009	0.0002	***127%***	0.0018	0.0001	***179%***	0.0022	0.0002	***167%***
Pb	**mg/L**	0.00022	0.0002	10%	0.00015	0.0002	29%	0.00024	0.00018	29%	0.00016	0.00013	21%
Sb	**mg/L**	0.0562	0.0573	2%	0.0557	0.0745	29%	0.102	0.154	***41%***	0.107	0.136	24%
Se	**mg/L**	0.056	0.039	***36%***	0.068	0.052	27%	0.016	0.013	21%	0.02	0.015	29%
Sn	**mg/L**	0.00001	0.00001	0%	0.00001	0.00001	0%	0.00001	0.00001	0%	0.00001	0.00001	0%
Sr	**mg/L**	0.0181	0.0152	17%	0.0246	0.019	26%	0.0271	0.0265	2%	0.0223	0.0232	4%
Ti	**mg/L**	0.0038	0.0042	10%	0.0026	0.0028	7%	0.0058	0.0027	***73%***	0.0053	0.0027	***65%***
Tl	**mg/L**	0.000049	0.000017	***97%***	0.000016	0.000012	29%	0.000006	0.000034	***140%***	0.000006	0.000016	***91%***
U	**mg/L**	0.000262	0.00021	22%	0.000364	0.000175	***70%***	0.000468	0.000529	12%	0.000785	0.00063	22%
V	**mg/L**	0.00027	0.0006	***76%***	0.00013	0.00032	***84%***	0.00165	0.00276	***50%***	0.00139	0.00303	***74%***
W	**mg/L**	0.00298	0.00143	***70%***	0.00195	0.00239	20%	0.111	0.176	***45%***	0.17	0.0809	***71%***
Y	**mg/L**	0.000077	0.000064	18%	0.000057	0.000039	***38%***	0.000045	0.000047	4%	0.000048	0.00004	18%
Zn	**mg/L**	0.001	0.001	0%	0.001	0.001	0%	0.001	0.001	0%	0.001	0.005	***133%***

Sample Preparation[1]		Typical	No Preparation	Relative Percent Difference	Typical	No Preparation	Relative Percent Difference	Typical	No Preparation	Relative Percent Difference	Typical	No Preparation	Relative Percent Difference
Sample ID		**Aug 27 DS-1**	**Aug 27 DS-1**		**Aug 27 DS-2**	**Aug 27 DS-2**		**Oct 10 NS-1**	**Oct 10 NS-1**		**Oct 10 NS-2**	**Oct 10 NS-2**	
Depth		0 m (Surface)	0 m (Surface)		0 - 1m	0 - 1m		0 m (Surface)	0 m (Surface)		1 - 2m	1 - 2m	
Sub-economic mineralized mine rock / Ore2		ore	ore		ore	ore		ore	ore		ore	ore	
Dominant Lithology[3]		BRS±mt	BRS±mt		BRS±mt	BRS±mt		BRS±mt	BRS±mt		BRS±mt	BRS±mt	
Acidity	**mg/L as CaCO3**	4	2	#REF!	2	2	#REF!	2	2	#REF!	2	2	#REF!
pH	**units**	7.79	8.1	#REF!	8.08	8.31	#REF!	9.22	9.61	#REF!	9.18	9.52	#REF!
Alkalinity	**mg/L as CaCO3**	27	24	#REF!	25	30	#REF!	34	31	#REF!	36	30	#REF!
Conductivity	**uS/cm**	166	117	#REF!	153	151	#REF!	138	104	#REF!	137	99	#REF!
SO4	**mg/L**	17	6.4	#REF!	19	11	#REF!	12	8.2	#REF!	14	5.9	#REF!
Cl	**mg/L**	4	3	#REF!	3	3.2	#REF!	4.9	2.6	#REF!	3.4	3.2	#REF!
Al	**mg/L**	0.0719	0.139	#REF!	0.0999	0.114	#REF!	0.267	0.232	#REF!	0.23	0.219	#REF!
As	**mg/L**	3.33	7.69	#REF!	2.9	7.43	#REF!	0.343	0.568	#REF!	0.34	0.602	#REF!
Ag	**mg/L**	0.00002	0.0005	#REF!	0.00001	0.0005	#REF!	0.00001	0.00001	#REF!	0.00001	0.00001	#REF!
Ba	**mg/L**	0.322	0.387	#REF!	0.301	0.368	#REF!	0.342	0.357	#REF!	0.334	0.409	#REF!
Be	**mg/L**	0.00004	0.00002	#REF!	0.00002	0.00002	#REF!	0.00002	0.00002	#REF!	0.00002	0.00002	#REF!
B	**mg/L**	0.0839	0.049	#REF!	0.0935	0.0709	#REF!	0.0681	0.0493	#REF!	0.0702	0.0485	#REF!
Bi	**mg/L**	0.01	0.00215	#REF!	0.00348	0.00553	#REF!	0.00806	0.00899	#REF!	0.0127	0.015	#REF!
Ca	**mg/L**	12.3	8.94	#REF!	10.8	9.14	#REF!	4.98	5.05	#REF!	5.78	5.93	#REF!
Cd	**mg/L**	0.000023	0.000003	#REF!	0.000005	0.000003	#REF!	0.000014	0.000003	#REF!	0.000015	0.000003	#REF!
Co	**mg/L**	0.00185	0.00402	#REF!	0.00179	0.00281	#REF!	0.000502	0.000463	#REF!	0.000708	0.000436	#REF!
Cr	**mg/L**	0.0005	0.0005	#REF!	0.0005	0.0005	#REF!	0.0005	0.0005	#REF!	0.0005	0.0005	#REF!
Cu	**mg/L**	0.0006	0.0005	#REF!	0.0006	0.0005	#REF!	0.0008	0.0007	#REF!	0.0008	0.0005	#REF!
Fe	**mg/L**	0.36	0.38	#REF!	0.47	0.21	#REF!	0.51	0.22	#REF!	0.47	0.38	#REF!
K	**mg/L**	9.2	9.71	#REF!	12	17.4	#REF!	17	12.1	#REF!	18.4	10.6	#REF!
Li	**mg/L**	0.006	0.003	#REF!	0.004	0.006	#REF!	0.004	0.002	#REF!	0.004	0.003	#REF!
Mg	**mg/L**	2.53	1.59	#REF!	2.26	1.7	#REF!	0.824	0.53	#REF!	1.19	0.777	#REF!
Mn	**mg/L**	0.00553	0.00295	#REF!	0.00414	0.00229	#REF!	0.00597	0.0023	#REF!	0.00545	0.00395	#REF!
Mo	**mg/L**	0.00465	0.00456	#REF!	0.00399	0.00473	#REF!	0.0142	0.0118	#REF!	0.0143	0.00735	#REF!
Na	**mg/L**	11.8	5.25	#REF!	7.19	6.55	#REF!	9.48	6.77	#REF!	7.81	5.25	#REF!
Ni	**mg/L**	0.0025	0.0002	#REF!	0.0022	0.0002	#REF!	0.0011	0.0002	#REF!	0.0014	0.0002	#REF!
Pb	**mg/L**	0.00009	0.00011	#REF!	0.00019	0.00015	#REF!	0.00041	0.0003	#REF!	0.00036	0.00029	#REF!
Sb	**mg/L**	0.0365	0.0372	#REF!	0.0283	0.0538	#REF!	0.0329	0.0336	#REF!	0.0444	0.0462	#REF!
Se	**mg/L**	0.009	0.007	#REF!	0.008	0.004	#REF!	0.016	0.011	#REF!	0.022	0.015	#REF!
Sn	**mg/L**	0.00001	0.00001	#REF!	0.00001	0.00001	#REF!	0.00001	0.00001	#REF!	0.00003	0.00001	#REF!
Sr	**mg/L**	0.0246	0.0145	#REF!	0.0199	0.0181	#REF!	0.0261	0.0229	#REF!	0.0327	0.027	#REF!
Ti	**mg/L**	0.0028	0.0032	#REF!	0.004	0.0025	#REF!	0.0095	0.0041	#REF!	0.0071	0.0053	#REF!
Tl	**mg/L**	0.000019	0.000002	#REF!	0.000002	0.000002	#REF!	0.000002	0.000002	#REF!	0.000012	0.000002	#REF!
U	**mg/L**	0.0015	0.000452	#REF!	0.0014	0.00174	#REF!	0.0043	0.00525	#REF!	0.00401	0.00261	#REF!
V	**mg/L**	0.00122	0.00236	#REF!	0.00226	0.00237	#REF!	0.00398	0.00286	#REF!	0.00183	0.00221	#REF!
W	**mg/L**	0.0189	0.0157	#REF!	0.0197	0.0178	#REF!	0.00435	0.00604	#REF!	0.112	0.0135	#REF!
Y	**mg/L**	0.000067	0.000041	#REF!	0.000051	0.000025	#REF!	0.000106	0.000048	#REF!	0.000076	0.000056	#REF!
Zn	**mg/L**	0.002	0.002	#REF!	0.003	0.002	#REF!	0.002	0.002	#REF!	0.002	0.002	#REF!

1.0 Indicates the highest concentration measured in the prepared / unmodified samples, respectively.

1.0 **Indicates an RPD greater than 20%.**

1. "Typical preparation" indicates that the sample was crushed and ground, according to standard procedures prior to short-term leach testing. "No preparation" indicates that the sample was not modified prior to testing.
2. Sample classified as "waste" or "ore" according to average assay grades of each pile (as provided by Fortune) and August 2008 cut-off criterion.
3. Lithology based on dominant visible lithology in field. Rock may be diluted with minor proportions of other lithologies of waste rock.

Appendix IV-6a

Results of Short Term Leach Testing - Comprehensive Analysis of Net Acid Generation Leachates - Waste - Exploration Drill Core Samples - Typical Sample Preparation

NICO Project, Fortune Minerals Ltd.

Sample ID	Lithology	Hole ID	Depth From	Depth To	pH units	Alkalinity mg/L as CaCO3	Acidity mg/L as CaCO3	Conductivity uS/cm	Cl mg/L	SO4 mg/L	Ag mg/L	Al mg/L	As mg/L	Ba mg/L	Be mg/L	B mg/L	Bi mg/L	Ca mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	K mg/L	Li mg/L
NICO-08-011	Rhyolite	03282	4.3	13.4	7.42	36	***2***	117	***2***	15	0.00004	0.17	0.139	0.382	***0.00002***	0.444	0.00044	3.73	0.000006	0.11	0.029	0.0073	0.03	6.82	***0.002***
NICO-08-012	Rhyolite	03282	31.7	41.3	6.85	8	***2***	152	***2***	51	0.00001	0.07	0.0278	0.223	***0.00002***	0.383	0.00041	5.83	0.000042	0.0137	0.0199	0.0031	0.02	9.94	***0.002***
Minimum					6.85	8	***2***	117	***2***	15	0.00001	0.07	0.0278	0.223	***0.00002***	0.383	0.00041	3.73	0.000006	0.0137	0.0199	0.0031	0.02	6.82	***0.002***
Maximum					7.42	36	***2***	152	***2***	51	0.00004	0.17	0.139	0.382	***0.00002***	0.444	0.00044	5.83	0.000042	0.11	0.029	0.0073	0.03	9.94	***0.002***
Average					7.05	22	***2***	135	***2***	33	0.00003	0.12	0.08	0.303	***0.00002***	0.414	0.00043	4.8	0.00002	0.1	0.0245	0.005	0.03	8.4	***0.002***
Standard Deviation					0.40	20	***0***	25	***0***	25	0.00002	0.07	0.08	0.112	***0.00000***	0.043	0.00002	1.5	0.00003	0.1	0.0064	0.003	0.01	2.2	***0.000***

Sample ID	Lithology	Hole ID	Depth From	Depth To	pH units	Alkalinity mg/L as CaCO3	Acidity mg/L as CaCO3	Conductivity uS/cm	Mg mg/L	Mn mg/L	Mo mg/L	Na mg/L	Ni mg/L	Pb mg/L	Sb mg/L	Se mg/L	Sn mg/L	Sr mg/L	Ti mg/L	Tl mg/L	U mg/L	V mg/L	W mg/L	Y mg/L	Zn mg/L
NICO-08-011	Rhyolite	03282	4.3	13.4	7.42	36	***2***	117	1.75	0.005	0.00942	15.2	0.0037	5E-05	0.0194	***0.001***	0.00015	0.0221	0.0041	0.000009	0.00562	0.00268	0.0121	0.000092	0.038
NICO-08-012	Rhyolite	03282	31.7	41.3	6.85	8	***2***	152	2.23	0.01	0.125	13.6	0.0022	5E-05	0.00717	0.002	0.0001	0.0205	0.0003	***2E-06***	0.000193	0.00028	0.0953	0.000031	0.006
Minimum					6.85	8	***2***	117	1.75	0.005	0.00942	13.6	0.0022	5E-05	0.00717	***0.001***	0.0001	0.0205	0.0003	***2E-06***	0.000193	0.00028	0.0121	0.000031	0.006
Maximum					7.42	36	***2***	152	2.23	0.01	0.125	15.2	0.0037	5E-05	0.0194	0.002	0.00015	0.0221	0.0041	0.000009	0.00562	0.00268	0.0953	0.000092	0.038
Average					7.05	22	***2***	135	1.99	0.007	0.067	14.40	0.0030	0.0001	0.013	0.002	0.00013	0.0213	0.0022	0.00001	0.002907	0.0015	0.0537	0.00006	0.022
Standard Deviation					0.40	20	***0***	25	0.34	0.003	0.082	1.13	0.0011	0.0000	0.009	0.001	0.00004	0.0011	0.0027	0.00000	0.003837	0.0017	0.0588	0.00004	0.023

Note: "Typical Sample Preparation" indicates that samples were crushed and ground prior to Net Acid Generation testing.

bold italic Bold italic formatting indicates a value that is less than the analytical detection limit.

Appendix IV-6b

Results of Short Term Leach Testing - Comprehensive Analysis of Net Acid Generation Leachates - Sub-economic mineralized mine rock and Ore - Bulk Sample Stockpile Samples - Typical Sample Preparation

NICO Project, Fortune Minerals Ltd.

Sample ID	Waste / Ore[1]	Dominant Lithology[2]	pH units	Alkalinity mg/L as CaCO3	Acidity mg/L as CaCO3	Conductivity uS/cm	Cl mg/L	SO4 mg/L	Ag mg/L	Al mg/L	As mg/L	Ba mg/L	Be mg/L	B mg/L	Bi mg/L	Ca mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	K mg/L	Li mg/L
Oct 5 DS-1	Sub-economic mineralized mine rock	FP	7.05	15	***2***	153	***2***	41	0.00003	0.03	4.51	0.269	***0.00002***	0.258	0.00569	13.5	0.00008	0.00427	0.0092	0.0007	0.02	10.6	***0.002***
Oct 5 DS-2	Sub-economic mineralized mine rock	FP	7.07	16	***2***	171	***2***	47	0.00003	0.03	6.07	0.268	0.00002	0.273	0.00399	16.3	0.000054	0.000837	0.0074	***0.0005***	0.02	11.1	***0.002***
FC-1	Sub-economic mineralized mine rock	FP	7.36	27	***2***	150	***2***	30	***0.00001***	0.58	2.82	0.248	***0.00002***	0.256	0.00104	10.2	0.000035	0.0168	0.0212	0.002	0.08	14.2	***0.002***
Minimum			7.05	15	2	150	2	30	0.00001	0.03	2.82	0.248	0.00002	0.256	0.00104	10.2	0.00004	0.00084	0.0074	0.0005	0.02	10.6	*0.002*
Maximum			7.36	27	2	171	2	47	0.00003	0.58	6.07	0.269	0.00002	0.273	0.00569	16.3	0.00008	0.01680	0.0212	0.002	0.08	14.2	*0.002*
Average			7.16	19	2	158	2	39	2.33333E-05	0.21	4.47	0.262	0.00002	0.262	0.00357	13.3	0.00006	0.00730	0.0126	0.001066667	0.04	12.0	*0.002*
Standard Deviation			0.17	7	0	11	0	9	1.1547E-05	0.32	1.63	0.012	0	0.009	0.00235	3.1	0.00002	0.00840	0.007502	0.000814453	0.03	2.0	0.000
Oct 9 NS-1	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	6.19	2	8	281	***2***	120	0.00013	0.43	0.0056	0.165	0.00008	0.507	0.00012	26.8	0.000125	1.24	0.0008	0.456	***0.01***	14.6	***0.002***
Oct 9 NS-3	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	7.73	41	***2***	201	***2***	52	0.00005	1.09	0.27	0.209	***0.00002***	0.232	0.064	26.8	0.000059	0.00855	0.0011	0.0039	0.02	11	0.002
Mar 10 NS-1	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	5.95	***2***	11	403	***2***	170	0.00004	0.11	1.91	0.145	0.00005	0.551	0.00089	16.4	0.000175	9.92	0.0038	0.277	***0.01***	47.9	***0.002***
Mar 10 NS-3	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	4.35	***2***	24	412	***2***	170	0.00005	0.25	4.85	0.153	0.00015	0.744	0.00058	12.2	0.000125	13.6	0.0012	0.585	***0.01***	49.1	***0.002***
Mar 8 NS-1	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	4.62	***2***	21	328	***2***	120	0.00009	0.44	6.93	0.0224	0.00005	0.0521	0.0006	10.5	0.000062	7.4	0.0014	0.135	***0.01***	47.5	***0.002***
FC-2	Sub-economic mineralized mine rock	Black Rock Schist (±magnetite)	6.53	5	2	294	***2***	110	0.00001	0.01	0.0747	0.144	0.00002	0.243	0.00048	33.3	0.000043	0.0928	0.0027	0.0017	***0.01***	16.3	***0.002***
FC-3	Sub-economic mineralized mine rock	Black Rock Schist (±magnetite)	6.46	4	2	378	***2***	150	0.00001	0.01	2.33	0.143	0.00002	0.347	0.0001	11.8	0.000064	6.32	0.0061	0.0161	***0.01***	46.3	***0.002***
FC-4	Sub-economic mineralized mine rock	Black Rock Schist (±magnetite)	4.48	***2***	2	353	***2***	160	0.00003	1.12	0.872	0.138	0.00034	0.523	0.00013	18.2	0.000128	3.29	0.0005	0.0005	***7.24***	19.4	***0.002***
Mar 8 NS-3	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	3.19	***2***	94	564	***2***	200	0.00017	1.54	0.59	0.0402	0.00054	0.146	0.00321	11.1	0.000174	2.3	***0.0005***	9.47	16.7	13.3	***0.002***
Minimum			3.19	***2***	***2***	201	***2***	52	0.0000	0.01	0.01	0.022	***0.00002***	0.052	0.0001	10.50	0.0000	0.01	***0.0005***	0.001	***0.01***	11.00	***0.002***
Maximum			7.73	41	94	564	***2***	200	0.0002	1.54	6.93	0.209	0.00054	0.744	0.0640	33.30	0.0002	13.60	0.0061	9.470	16.70	49.10	0.002
Average			5.50	7	18	357	***2***	139	0.0001	0.56	1.98	0.129	0.00014	0.372	0.0078	18.57	0.0001	4.91	0.0020	1.216	2.67	29.49	0.002
Standard Deviation			1.42	13	30	102	0	44	0.0001	0.56	2.41	0.059	0.00018	0.224	0.0211	8.40	0.0001	4.73	0.0019	3.103	5.78	17.44	0.000
Oct 9 DS-1	ore	Black Rock Schist ± Magnetite	4.12	***2***	15	258	***2***	100	0.00043	1.05	0.0523	0.0403	0.00009	0.124	0.00189	22.5	0.00077	0.403	0.0031	0.143	***0.01***	19.6	***0.002***
Oct 9 DS-2	ore	Black Rock Schist ± Magnetite	5.69	***2***	11	295	***2***	130	0.0001	0.72	0.0102	0.162	0.00017	0.757	0.00163	24.9	0.001145	0.643	0.0026	0.226	***0.01***	13.5	***0.002***
Aug 28 DS-1	ore	Black Rock Schist ± Magnetite	2.32	***2***	436	2560	***2***	520	0.0001	6.39	6.49	0.0541	0.00074	0.0879	0.00118	17.4	0.000063	19.6	0.0064	2.5	39.4	14	***0.002***
Aug 28 DS-3	ore	Black Rock Schist ± Magnetite	2.17	***2***	542	3430	2	630	0.0001	7.76	18.7	0.0489	0.0007	0.118	0.00081	16.4	0.000081	21.1	0.0055	1.92	28.5	14	***0.002***
Aug 21 NS-1	ore	Black Rock Schist ± Magnetite	2.28	***2***	473	2790	3.1	590	0.0001	11.2	26.5	0.0812	0.00123	0.0938	0.00044	20.6	0.000085	27.7	0.0115	1.7	16.1	22.6	***0.002***
Aug 20 NS-1	ore	Black Rock Schist ± Magnetite	6.46	4	2	228	***2***	75	0.00002	***0.01***	0.623	0.163	***0.00002***	0.231	0.00016	13.6	0.000056	0.295	0.016	0.0177	***0.01***	15.5	***0.002***
Aug 18 NS-1	ore	Black Rock Schist ± Magnetite	4.04	***2***	33	374	2.1	160	0.00002	2.59	0.359	0.0629	0.00014	0.0367	0.00008	22.8	0.000632	10.2	0.0089	0.281	***0.01***	27.7	***0.002***
Aug 23 DS-1	ore	Black Rock Schist ± Magnetite	6.7	7	***2***	205	***2***	69	0.00001	***0.01***	0.346	0.187	***0.00002***	0.171	0.00079	17	0.000033	0.0791	0.0131	0.0033	0.02	14.2	***0.002***
FC-5	Ore	Black Rock Schist (±magnetite)	2.35	2	411	2450	***2***	590	0.00006	12.3	16.6	0.1	0.00133	0.761	0.00024	23.9	0.000106	25.3	0.0066	1.64	***0.01***	36.2	***0.002***
Aug 24 DS-1	ore	Black Rock Schist ± Magnetite	3.61	***2***	52	502	2.5	210	0.00002	3.6	0.399	0.073	0.00043	0.0927	0.00017	22.2	0.000081	16.6	0.0064	0.231	***0.01***	36.5	***0.002***
Minimum			2.17	***2***	2	205	2	69	0.00001	***0.01***	0.0102	0.0403	***0.00002***	0.0367	0.00008	13.6	0.00003	0.1	0.0026	0.003	0.01	13.5	***0.002***
Maximum			6.70	7	542	3430	3	630	0.00043	12.30	26.5000	0.1870	0.00133	0.7610	0.00189	24.9	0.00115	27.7	0.0160	2.500	39.40	36.5	***0.002***
Average			3.97	3	198	1309	2	307	0.00010	4.56	7.0080	0.0972	0.00049	0.2473	0.00074	20.1	0.00031	12.2	0.0080	0.866	8.41	21.4	***0.002***
Standard Deviation			1.77	2	233	1317	0	242	0.00012	4.61	9.8844	0.0538	0.00049	0.2747	0.00065	3.8	0.00040	11.2	0.0043	0.956	14.59	9.1	0.000

Sample ID	Waste / Ore[1]	Dominant Lithology[2]	pH units	Alkalinity mg/L as CaCO3	Acidity mg/L as CaCO3	Conductivity uS/cm	Mg mg/L	Mn mg/L	Mo mg/L	Na mg/L	Ni mg/L	Pb mg/L	Sb mg/L	Se mg/L	Sn mg/L	Sr mg/L	Ti mg/L	Tl mg/L	U mg/L	V mg/L	W mg/L	Y mg/L	Zn mg/L
Oct 5 DS-1	Sub-economic mineralized mine rock	FP	7.05	15	***2***	153	0.112	0.0014	0.167	8.52	0.001	0.00005	0.0302	0.023	0.00007	0.0172	0.0008	0.000003	0.000157	0.0204	0.00256	0.000019	0.031
Oct 5 DS-2	Sub-economic mineralized mine rock	FP	7.07	16	***2***	171	0.148	0.00083	0.0717	9.24	0.0009	0.00006	0.0265	0.021	0.00008	0.0197	0.0008	0.000016	0.000077	0.0236	0.00355	0.000034	0.048
FC-1	Sub-economic mineralized mine rock	FP	7.36	27	***2***	150	0.092	0.00118	0.0882	12	0.0021	0.00005	0.0273	0.02	0.00013	0.016	0.0047	0.000003	0.000436	0.0341	0.00941	0.000039	0.006
Minimum			7.05	15	2	150	0.092	0.00083	0.0717	8.52	0.0009	0.00005	0.0265	0.020	0.00007	0.016	0.0008	0.0000	0.0001	0.0204	0.0026	0.0000	0.006
Maximum			7.36	27	2	171	0.148	0.00140	0.1670	12.00	0.0021	0.00006	0.0302	0.023	0.00013	0.020	0.0047	0.0000	0.0004	0.0341	0.0094	0.0000	0.048
Average			7.16	19	2	158	0.117	0.00114	0.1090	9.92	0.0013	0.00005	0.0280	0.021	0.00009	0.018	0.0021	0.0000	0.0002	0.0260	0.0052	0.0000	0.028
Standard Deviation			0.17	7	0	11	0.028	0.00029	0.0509	1.84	0.0007	0.00001	0.0019	0.002	0.00003	0.002	0.002251666	0.0000	0.0002	0.0072	0.0037	0.0000	0.021
Oct 9 NS-1	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	6.19	2	8	281	3.65	0.406	0.00077	11.1	0.155	0.00028	0.00137	0.129	0.00006	0.025	0.0004	0.000178	0.00621	0.00008	0.00046	0.000622	0.401
Oct 9 NS-3	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	7.73	41	***2***	201	0.04	0.00322	0.117	8.51	0.0015	0.00004	0.117	0.107	0.00005	0.0152	0.0005	0.000009	0.00018	0.00274	0.00186	0.000028	0.006
Mar 10 NS-1	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	5.95	***2***	11	403	5.71	0.268	0.0584	10.3	0.124	0.00009	0.0187	0.051	0.00003	0.0234	0.0006	0.000334	0.000833	0.00658	0.00076	0.000213	0.488
Mar 10 NS-3	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	4.35	***2***	24	412	6.06	0.259	0.0546	11.8	0.171	0.00028	0.0221	0.052	0.00001	0.0194	0.0005	0.00037	0.00234	0.0025	0.0006	0.00049	0.793
Mar 8 NS-1	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	4.62	***2***	21	328	3.92	0.204	0.112	0.64	0.0976	0.00017	0.071	0.05	0.00005	0.0106	0.0019	0.00024	0.000728	0.00783	0.126	0.000069	0.013
FC-2	Sub-economic mineralized mine rock	Black Rock Schist (±magnetite)	6.53	5	2	294	4.39	0.0238	0.0891	8.53	0.0045	0.00002	0.0221	0.165	0.00004	0.0221	0.0004	0.000023	0.000035	0.00054	0.00565	0.000007	0.074
FC-3	Sub-economic mineralized mine rock	Black Rock Schist (±magnetite)	6.46	4	2	378	10.9	0.242	0.116	7.81	0.0906	0.00002	0.0808	0.074	0.00004	0.0168	0.0015	0.000067	0.000238	0.0113	0.229	0.000035	0.343
FC-4	Sub-economic mineralized mine rock	Black Rock Schist (±magnetite)	4.48	***2***	2	353	8.84	0.564	0.00135	8.45	0.0583	0.00049	0.00272	0.042	0.00002	0.0148	0.0005	0.000209	0.00666	0.0001	0.00231	0.00679	0.527
Mar 8 NS-3	Sub-economic mineralized mine rock	Black Rock Schist ± Magnetite	3.19	***2***	94	564	4.17	0.409	0.00143	0.77	0.0562	0.0082	0.00483	0.032	0.00005	0.0089	0.0008	0.000628	0.0289	0.00015	0.00126	0.00684	0.027
Minimum			3.19	***2***	***2***	201	0.04	0.003	0.0008	0.64	0.002	0.0000	0.0014	0.032	0.0000	0.0089	0.0004	0.0000	0.0000	0.0001	0.000	0.0000	0.006
Maximum			7.73	41	94	564	10.90	0.564	0.1170	11.80	0.171	0.0082	0.1170	0.165	0.0001	0.0250	0.0019	0.0006	0.0289	0.0113	0.229	0.0068	0.793
Average			5.50	7	18	357	5.30	0.264	0.0612	7.55	0.084	0.0011	0.0378	0.078	0.0000	0.0174	0.0008	0.0002	0.0051	0.0035	0.041	0.0017	0.297
Standard Deviation			1.42	13	30	102	3.14	0.181	0.0504	4.10	0.060	0.0027	0.0414	0.046	0.0000	0.0056	0.0005	0.0002	0.0093	0.0041	0.082	0.0029	0.282
Oct 9 DS-1	ore	Black Rock Schist ± Magnetite	4.12	***2***	15	258	2.98	0.291	0.0168	0.93	0.128	0.00591	0.00296	0.123	0.00006	0.0163	0.0006	0.000575	0.00751	0.00143	0.00033	0.0015	0.121
Oct 9 DS-2	ore	Black Rock Schist ± Magnetite	5.69	***2***	11	295	3.74	0.335	0.00118	10.3	0.171	0.00443	0.00209	0.134	***0.00001***	0.0252	0.0005	0.000198	0.0219	0.00007	0.00023	0.00276	0.633
Aug 28 DS-1	ore	Black Rock Schist ± Magnetite	2.32	***2***	436	2560	5.11	0.502	0.00926	0.83	0.218	0.0042	0.00563	0.056	0.00008	0.0116	0.0075	0.000618	0.0563	0.00211	0.00031	0.00882	0.022
Aug 28 DS-3	ore	Black Rock Schist ± Magnetite	2.17	***2***	542	3430	6.83	0.554	0.0207	1.09	0.212	0.00349	0.00656	0.049	0.00004	0.014	0.0086	0.000614	0.0904	0.00389	0.0003	0.0102	0.024
Aug 21 NS-1	ore	Black Rock Schist ± Magnetite	2.28	***2***	473	2790	11.6	0.787	0.0153	2.86	0.189	0.00131	0.00627	0.05	0.00007	0.0175	0.0046	0.000611	0.0853	0.00572	0.00039	0.015	0.033
Aug 20 NS-1	ore	Black Rock Schist ± Magnetite	6.46	4	2	228	4.54	0.0459	0.136	8.09	0.005	0.00003	0.0139	0.011	0.00004	0.0181	0.0005	0.000028	0.001225	0.0185	0.051	0.000135	0.111
Aug 18 NS-1	ore	Black Rock Schist ± Magnetite	4.04	***2***	33	374	7.29	0.571	0.0573	1.66	0.187	0.00083	0.00414	0.023	0.00001	0.018	0.001	0.000571	0.0209	0.00793	0.0013	0.00264	0.116
Aug 23 DS-1	ore	Black Rock Schist ± Magnetite	6.7	7	***2***	205	2.76	0.00624	0.0751	7.1	0.004	0.00005	0.0565	0.036	0.00006	0.0145	0.0008	0.000005	0.000482	0.0134	0.0107	0.000027	0.07
FC-5	Ore	Black Rock Schist (±magnetite)	2.35	2	411	2450	15.4	0.924	0.0186	8.85	0.203	0.00115	0.00578	0.053	0.00003	0.0218	0.0039	0.00065	0.061	0.00549	0.00104	0.0141	0.915
Aug 24 DS-1	ore	Black Rock Schist ± Magnetite	3.61	***2***	52	502	8.87	0.536	0.0129	2.38	0.295	0.00101	0.00588	0.046	0.00003	0.0156	0.001	0.000674	0.0302	0.00285	0.00039	0.0095	0.024
Minimum			2.17	***2***	2	205	2.76	0.006	0.0012	0.83	0.004	0.0000	0.0021	0.011	***0.00001***	0.0116	0.0005	0.0000	0.0005	0.0001	0.0002	0.0000	0.022
Maximum			6.70	7	542	3430	15.40	0.924	0.1360	10.30	0.295	0.0059	0.0565	0.134	0.00008	0.0252	0.0086	0.0007	0.0904	0.0185	0.0510	0.0150	0.915
Average			3.97	3	198	1309	6.91	0.455	0.0363	4.41	0.161	0.0022	0.0110	0.058	0.00004	0.0173	0.0029	0.0005	0.0375	0.0061	0.0066	0.0065	0.207
Standard Deviation			1.77	2	233	1317	4.08	0.293	0.0419	3.73	0.093	0.0021	0.0163	0.040	0.00002	0.0039	0.0031	0.0003	0.0336	0.0058	0.0159	0.0057	0.309

bold italic Bold italic formatting indicates a value that is less than the analytical detection limit

1. Sample classified as "waste" or "ore" according to average assay grades of each pile (as provided by Fortune) and August 2008 cut-off criterion
2. Lithology based on dominant visible lithology in field. Rock may be diluted with minor proportions of other lithologies of waste rock

Appendix IV-6c

Results of Short Term Leach Testing - Comprehensive Analysis of Net Acid Generation Leachates - Tailings

NICO Project, Fortune Minerals Ltd.

	Sample weight	Vol H_2O_2	Hg	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg
	g	mL	µg/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
Bulk Rougher Tails	2.52	250	< 0.1	0.00003	1.25	0.180	0.00253	0.00003	0.417	0.00262	19.3	0.000034	0.0225	0.0650	0.0183	0.06	37.8	< 0.002	0.014
Bulk Cleaner Tails	2.53	250	< 0.1	0.00002	0.97	1.84	0.00157	< 0.00002	0.168	0.00227	29.9	0.000036	0.00997	0.0452	0.0074	0.02	38.5	< 0.002	0.013
PP#14	2.54	250	< 0.1	0.00003	1.31	0.824	0.00107	0.00002	0.155	0.00126	20.1	< 0.000003	0.00726	0.0329	0.0093	0.05	29.2	< 0.002	0.010

	Sample weight	Vol H_2O_2	Hg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
	g	mL	µg/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
Bulk Rougher Tails	2.52	250	< 0.1	0.00172	0.0204	0.96	0.0020	0.00015	0.0277	0.013	0.00017	0.0059	0.0014	0.000097	0.00110	0.00855	0.0336	0.000098	< 0.001
Bulk Cleaner Tails	2.53	250	< 0.1	0.00063	0.0530	0.87	0.0012	0.00007	0.0858	0.048	0.00005	0.0127	0.0006	0.000046	0.00151	0.00680	0.0198	0.000044	< 0.001
PP#14	2.54	250	< 0.1	0.00082	0.0197	0.54	0.0017	0.00020	0.0338	0.014	0.00177	0.0060	0.0007	0.000030	0.00120	0.00692	0.0262	0.000033	0.001

Appendix IV-7
Results of Decant Water Quality Analysis
NICO Project, Fortune Minerals Limited

	Unit	Bulk Rougher Tails (FC-6)	PP#14	NICO Field Test Blend (FC-7)
pH	units	8.2	8.18	7.7
Conductivity (EC)	uS/cm	666	547	36800
Bicarbonate (HCO3)	mg/L	104		136
Carbonate (CO3)	mg/L	<5	<2	<5
Hydroxide (OH)	mg/L	<5		<5
Alkalinity, Total (as CaCO3)	mg/L	85	113	112
Chloride (Cl)	mg/L	62	38	13500
Calcium (Ca)	mg/L	18.6	15.7	922
Potassium (K)	mg/L	80.0	81.3	236
Magnesium (Mg)	mg/L	13.4	5.78	80.5
Sodium (Na)	mg/L	43	34.5	7330
Sulfate (SO4)	mg/L	132	60	2120
Ion Balance	%	95.9		88.4
TDS (Calculated)	mg/L	400	394	24300
Hardness (as CaCO3)	mg/L	102		2630
Nitrate+Nitrite-N	mg/L	<0.1		0.4
Nitrate-N	mg/L	<0.1	1.89	0.4
Nitrite-N	mg/L	<0.05	0.8	0.07
Dissolved Metals				
Silver (Ag)	mg/L	<0.0002	<0.00001	<0.0002
Aluminum (Al)	mg/L	0.09	0.08	<0.01
Arsenic (As)	mg/L	0.220	0.625	0.0986
Boron (B)	mg/L	0.126	0.147	0.099
Barium (Ba)	mg/L	0.0092	0.00937	0.229
Beryllium (Be)	mg/L	<0.0005	<0.00002	<0.0005
Bismuth (Bi)	mg/L	0.00427	0.00136	0.00016
Cadmium (Cd)	mg/L	0.0004	0.000055	0.0003
Cobalt (Co)	mg/L	0.0045	0.00141	1.63
Chromium (Cr)	mg/L	<0.002	<0.0005	0.003
Copper (Cu)	mg/L	0.0021	0.002	0.0127
Iron (Fe)	mg/L	0.235	0.11	<0.1
Manganese (Mn)	mg/L	0.013	0.00681	0.63
Molybdenum (Mo)	mg/L	0.0603	0.0534	0.0059
Nickel (Ni)	mg/L	0.0011	0.0019	0.0320
Lead (Pb)	mg/L	<0.0001	0.00004	<0.0001
Antimony (Sb)	mg/L	0.0569	0.0623	0.0261
Tin (Sn)	mg/L	<0.0002	0.00076	<0.0002
Strontium (Sr)	mg/L	0.0710	0.0577	2.17
Titanium (Ti)	mg/L	0.0043	0.002	0.0045
Thallium (Tl)	mg/L	<0.00005	0.000048	0.00021
Uranium (U)	mg/L	0.0952	0.0363	0.0964
Vanadium (V)	mg/L	0.0040	0.00138	<0.0005
Zinc (Zn)	mg/L	0.003	<0.001	0.015
Total Major Metals				
Calcium (Ca)	mg/L	67	26.2	948
Potassium (K)	mg/L	110	91.7	241
Magnesium (Mg)	mg/L	59	13.5	80
Sodium (Na)	mg/L	50	37.8	7700
Iron (Fe)	mg/L	227	41.2	8.74
Manganese (Mn)	mg/L	1.99	0.343	0.68
Total Trace Metals				
Silver (Ag)	mg/L	<0.0004	0.00007	<0.0004
Aluminum (Al)	mg/L	53.2	9.3	1.70
Arsenic (As)	mg/L	1.45	0.625	0.281
Boron (B)	mg/L	0.13	0.143	0.09
Barium (Ba)	mg/L	0.174	0.0484	0.213
Beryllium (Be)	mg/L	0.003	0.00071	<0.001
Bismuth (Bi)	mg/L	1.76	0.245	0.0858
Cadmium (Cd)	mg/L	<0.0002	0.000068	0.0004
Cobalt (Co)	mg/L	0.239	0.0607	1.56
Chromium (Cr)	mg/L	0.0840	0.0126	0.037
Copper (Cu)	mg/L	0.079	0.0129	0.025
Molybdenum (Mo)	mg/L	0.0553	0.054	0.0060
Nickel (Ni)	mg/L	0.0284	0.0058	0.0274
Lead (Pb)	mg/L	0.0280	0.00416	0.0029
Antimony (Sb)	mg/L	0.0218	0.0609	0.0264
Tin (Sn)	mg/L	0.0061	0.00361	0.0006
Strontium (Sr)	mg/L	0.0835	0.0668	1.99
Titanium (Ti)	mg/L	4.06	0.461	0.138
Thallium (Tl)	mg/L	0.0016	0.000132	0.0003
Uranium (U)	mg/L	0.134	0.0571	0.0944
Vanadium (V)	mg/L	0.0569	0.0097	<0.0002
Zinc (Zn)	mg/L	0.437	0.009	0.027
Mercury (Hg)-Dissolved	mg/L	<0.00010	<0.1	<0.00010
Mercury (Hg)-Total	mg/L	<0.00010	<0.1	<0.00010
Selenium (Se)-Dissolved	mg/L	0.0142	0.012	0.428
Selenium (Se)-Total	mg/L	0.0115	0.013	0.403

Appendix IV-8
NICO Project, Fortune Minerals Limited

Sample ID		PP-01 Thickener O/F 16:00	PP-02 Thickener O/F 16:00	PP-03 Thickener O/F 11:00	PP-03 Thickener O/F 16:00	PP-05 Thickener O/F 14:30	PP-7A Thickener O/F 13:00
Date		**Oct-10**	**Oct-10**	**Oct-10**	**Oct-10**	**Oct-10**	**Oct-10**
Parameter	**Unit**						
pH	units	8.72	8.56	8.43	8.57	8.51	8.02
Conductivity	µS/cm	503	520	540	596	623	701
Cl	mg/L	28	30	31	37	45	41
SO_4	mg/L	95	83	77	100	110	140
As^{+3}	mg/L	---	---	---	---	---	0.018
As^{+5}	mg/L	---	---	---	---	---	0.008
Se^{4}	mg/L	---	---	---	---	---	< 0.005
Se^{6}	mg/L	---	---	---	---	---	< 0.005
Hg	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
As	mg/L	0.035	0.045	0.033	0.038	0.028	0.025
Se	mg/L	0.065	< 0.005	0.019	0.008	< 0.005	< 0.005
Ag	mg/L	0.00002	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Al	mg/L	0.06	0.07	0.04	0.07	0.09	0.05
Ba	mg/L	0.01212	0.00851	0.0110	0.0115	0.0158	0.01393
Be	mg/L	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
B	mg/L	0.0690	0.0776	0.0848	0.101	0.0988	0.105
Bi	mg/L	0.00013	0.00025	0.00013	0.00009	0.00011	0.00015
Ca	mg/L	22.6	17.1	22.0	22.4	26.1	24.7
Cd	mg/L	0.000026	0.000056	0.000040	0.000048	0.000054	0.000088
Co	mg/L	0.001092	0.00103	0.00235	0.00229	0.00215	0.001850
Cr	mg/L	< 0.0005	0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cu	mg/L	0.0009	0.0019	0.0016	0.0012	0.0006	0.0015
Fe	mg/L	0.014	0.011	< 0.002	0.003	0.005	0.008
K	mg/L	69.8	80.8	60.9	70.9	88.0	98.9
Li	mg/L	0.016	0.017	0.019	0.021	0.035	0.025
Mg	mg/L	6.27	4.69	6.55	6.61	8.11	8.80
Mn	mg/L	0.01648	0.0108	0.0187	0.0155	0.0198	0.01901
Mo	mg/L	0.03553	0.0357	0.0466	0.0460	0.0517	0.07904
Na	mg/L	23.9	23.4	24.3	30.6	31.7	35.1
Ni	mg/L	0.0002	0.0011	0.0016	0.0013	0.0016	0.0027
P	mg/L	0.033	< 0.009	< 0.009	0.034	0.019	0.010
Pb	mg/L	0.00053	0.00010	0.00088	0.00005	0.00006	0.00016
Sb	mg/L	0.0093	0.0098	0.0107	0.0084	0.0171	0.0214
Si	mg/L	2.03	2.14	2.32	2.41	2.42	3.09
Sn	mg/L	0.00040	0.00030	0.00044	0.00023	0.00009	0.00019
Sr	mg/L	0.0690	0.0469	0.0722	0.0638	0.0742	0.0673
Ti	mg/L	0.0009	0.0004	0.0004	0.0022	0.0008	0.0009
Th	mg/L	< 0.000004	0.000084	0.000013	0.000052	< 0.000004	< 0.000004
Tl	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
U	mg/L	0.007833	0.00803	0.0101	0.00928	0.0119	0.017088
V	mg/L	0.00017	0.00041	0.00019	0.00016	0.00010	0.00031
Y	mg/L	0.000017	0.000006	0.000008	0.000005	0.000006	0.000009
W	mg/L	0.00668	0.0101	0.00905	0.0109	0.0105	0.01494
Zn	mg/L	< 0.002	< 0.002	0.004	< 0.002	< 0.002	0.007

APPENDIX V

Results of Regression Analysis – Correlation Coefficients

Breccia - Drill Core

	NP	Total Sulphur	Sulphate-Sulphur	Sulphide-Sulphur	Total Carbon	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
NP	1.00																																				
Total Sulphur	-0.25	1.00																																			
Sulphate-Sulphur	-0.23	0.97	1.00																																		
Sulphide-Sulphur	0.09	1.00	0.97	1.00																																	
Total Carbon	0.80	-0.48	-0.54	-0.57	1.00																																
Ag	0.27	0.02	0.14	0.98	0.15	1.00																															
Al	-0.80	0.08	0.07	-0.11	-0.38	-0.46	1.00																														
As	-0.29	0.66	0.53	0.71	-0.47	-0.28	0.29	1.00																													
Ba	-0.64	-0.17	-0.31	-0.34	-0.22	-0.22	0.82	0.11	1.00																												
Be	0.06	-0.38	-0.50	-0.47	0.21	-0.05	-0.09	-0.50	-0.33	1.00																											
B	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00																										
Bi	0.48	0.14	0.18	0.27	-0.07	0.43	-0.80	-0.03	-0.80	0.27	N/A	1.00																									
Ca	0.94	-0.40	-0.46	-0.72	0.91	0.06	-0.40	-0.30	-0.25	0.03	N/A	0.09	1.00																								
Cd	N/A	-0.73	N/A	N/A	N/A	N/A	-0.77	-0.62	-0.91	0.87	N/A	1.00	-0.94	1.00																							
Co	-0.18	0.98	0.97	0.99	-0.48	0.08	-0.03	0.68	-0.29	-0.32	N/A	0.21	-0.37	0.15	1.00																							
Cr	-0.16	-0.18	-0.20	-0.49	-0.24	-0.55	0.06	-0.28	0.40	-0.26	N/A	-0.49	-0.02	-0.27	-0.24	1.00																					
Cu	-0.16	0.97	0.98	0.97	-0.47	0.09	-0.05	0.57	-0.34	-0.23	N/A	0.23	-0.36	0.93	0.99	-0.22	1.00																				
Fe	0.55	0.07	0.22	0.29	0.07	0.25	-0.33	0.07	-0.27	0.05	N/A	0.39	0.34	-0.09	0.18	-0.11	0.20	1.00																			
K	-0.59	0.31	0.33	0.17	-0.25	-0.53	0.80	0.24	0.61	0.06	N/A	-0.52	-0.39	-0.84	0.14	-0.03	0.15	-0.31	1.00																		
Li	-0.26	-0.10	0.04	-0.13	-0.54	0.36	-0.28	0.09	-0.44	0.09	N/A	0.44	-0.24	0.85	0.30	-0.56	0.30	0.00	-0.48	1.00																	
Mg	0.59	-0.02	0.22	0.19	0.14	0.33	-0.55	-0.17	-0.56	0.42	N/A	0.59	0.31	0.31	0.13	-0.15	0.18	0.82	-0.40	-0.03	1.00																
Mn	0.15	-0.37	-0.64	-0.47	-0.02	-0.27	-0.17	-0.11	-0.43	0.61	N/A	0.20	0.07	0.18	-0.18	-0.17	-0.15	0.19	-0.25	0.15	0.52	1.00															
Mo	-0.13	0.92	0.99	0.96	-0.46	0.19	-0.16	0.52	-0.47	-0.19	N/A	0.35	-0.33	0.87	0.96	-0.38	0.97	0.17	0.03	0.78	0.20	-0.10	1.00														
Na	-0.39	-0.16	-0.33	-0.47	0.09	-0.62	0.56	0.01	0.44	0.12	N/A	-0.48	-0.15	-0.67	-0.31	0.06	-0.32	-0.80	0.61	-0.35	-0.71	-0.07	-0.38	1.00													
Ni	0.16	-0.02	0.05	0.17	0.26	-0.18	0.13	-0.04	0.29	0.17	N/A	0.07	0.18	-0.60	-0.10	0.14	-0.08	0.57	0.34	-0.50	0.37	-0.18	-0.23	-0.11	1.00												
Pb	-0.23	-0.21	-0.25	-0.40	0.09	0.43	0.09	-0.28	0.03	0.25	N/A	-0.13	-0.17	0.87	-0.17	-0.08	-0.16	-0.26	-0.14	0.58	-0.27	-0.14	-0.06	-0.05	-0.33	1.00											
Sb	-0.21	0.26	0.20	0.38	-0.02	-0.17	0.45	0.49	0.32	-0.35	N/A	-0.65	-0.13	-0.57	0.27	0.24	0.19	-0.41	0.21	-0.13	-0.47	-0.03	0.13	0.30	-0.44	0.20	1.00										
Se	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00								
Sn	0.52	0.48	0.55	0.68	0.04	0.10	-0.38	0.25	-0.31	-0.41	N/A	0.30	0.36	-0.77	0.50	0.04	0.52	0.74	-0.24	-0.30	0.53	-0.16	0.46	-0.64	0.36	-0.55	-0.22	N/A	1.00							
Sr	-0.35	-0.46	-0.67	-0.56	0.19	0.02	0.57	-0.21	0.79	0.05	N/A	-0.43	-0.14	-0.42	-0.51	0.16	-0.53	-0.33	0.56	-0.32	-0.48	-0.48	-0.60	0.52	0.44	0.22	-0.08	N/A	-0.50	1.00						
Ti	0.17	-0.30	-0.25	-0.25	0.15	0.02	-0.06	-0.18	0.38	-0.16	N/A	0.04	0.19	-0.65	-0.31	0.44	-0.31	0.41	0.08	-0.56	0.24	-0.29	-0.45	-0.13	0.80	-0.47	-0.48	N/A	0.35	0.45	1.00					
Tl	0.33	-0.11	-0.30	-0.11	0.19	-0.29	0.05	0.42	0.37	-0.53	N/A	-0.06	0.35	-0.62	-0.13	0.07	-0.21	0.60	0.08	-0.29	0.05	-0.27	-0.28	-0.17	0.55	-0.56	-0.14	N/A	0.54	0.22	0.74	1.00				
U	-0.38	0.68	0.65	0.76	-0.28	-0.05	0.32	0.37	-0.09	-0.09	N/A	-0.26	-0.38	0.28	0.62	-0.15	0.63	-0.48	0.30	0.16	-0.43	-0.16	0.63	0.27	-0.51	0.34	0.62	N/A	-0.16	-0.23	-0.77	-0.66	1.00			
V	0.33	-0.42	-0.39	-0.37	0.21	0.17	-0.23	-0.19	0.23	-0.12	N/A	0.20	0.30	-0.44	-0.38	0.29	-0.39	0.56	-0.15	-0.35	0.40	-0.13	-0.47	-0.32	0.72	-0.42	-0.55	N/A	0.37	0.31	0.94	0.82	-0.91	1.00		
W	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00		
Y	-0.19	-0.29	-0.48	-0.50	-0.01	-0.51	0.28	0.11	-0.03	0.62	N/A	-0.08	-0.11	0.05	-0.24	-0.22	-0.26	-0.28	0.21	0.07	-0.05	0.68	-0.27	0.54	-0.08	0.05	0.23	N/A	-0.60	0.05	-0.34	-0.36	0.11	-0.31	N/A	1.00	
Zn	-0.20	-0.20	-0.20	-0.41	-0.01	0.47	-0.04	-0.21	-0.16	0.45	N/A	0.13	-0.21	0.88	-0.09	-0.28	-0.08	0.01	-0.21	0.70	0.06	0.13	0.04	-0.26	-0.22	0.91	0.03	N/A	-0.46	0.07	-0.44	-0.53	0.19	-0.32	N/A	0.17	1.00

Feldspar Porphyry - Drill Core

	NP	Total Sulphur	Sulphate-Sulphur	Sulphide-Sulphur	Total Carbon	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
NP	1.00																																				
Total Sulphur	-0.10	1.00																																			
Sulphate-Sulphur	-0.18	0.84	1.00																																		
Sulphide-Sulphur	0.11	0.96	0.62	1.00																																	
Total Carbon	0.63	-0.10	-0.18	-0.11	1.00																																
Ag	-0.21	0.11	0.24	-0.01	-0.12	1.00																															
Al	0.41	0.06	0.03	0.11	0.20	-0.26	1.00																														
As	-0.18	0.14	0.01	0.10	-0.25	0.02	-0.03	1.00																													
Ba	-0.14	0.13	0.03	0.21	0.10	-0.06	0.45	0.05	1.00																												
Be	0.05	0.12	0.11	0.08	-0.15	-0.21	0.15	-0.15	-0.09	1.00																											
B	0.76	-0.60	-0.60	-0.60	-0.48	-0.31	0.39	N/A	-0.83	0.99	1.00																										
Bi	0.25	0.03	0.23	-0.02	-0.07	-0.19	-0.16	0.07	-0.54	0.23	-0.61	1.00																									
Ca	0.59	-0.01	-0.03	0.04	0.33	-0.11	0.53	-0.03	-0.21	0.10	0.90	0.24	1.00																								
Cd	-0.07	0.18	0.67	-0.35	0.52	0.89	-0.77	-0.43	-0.52	-0.25	-0.29	0.79	-0.16	1.00																							
Co	-0.01	-0.02	-0.12	0.17	-0.06	-0.27	0.01	0.66	0.16	-0.39	-0.36	-0.07	0.05	-0.15	1.00																						
Cr	-0.25	-0.09	-0.10	-0.04	-0.29	-0.01	0.29	-0.12	0.44	0.04	-0.22	-0.62	-0.13	-0.59	0.06	1.00																					
Cu	0.04	0.49	0.62	0.30	0.04	-0.05	-0.05	0.24	0.04	-0.11	-0.60	0.03	-0.07	-0.12	0.09	-0.08	1.00																				
Fe	0.39	0.07	0.16	0.11	-0.13	-0.12	0.50	-0.01	-0.29	0.31	0.96	0.34	0.60	-0.21	-0.24	0.04	-0.08	1.00																			
K	0.22	-0.04	-0.19	0.09	0.40	-0.18	0.47	-0.01	0.74	-0.13	-0.95	-0.33	-0.14	-0.46	0.13	0.31	0.08	-0.22	1.00																		
Li	0.03	0.05	0.00	-0.11	-0.10	-0.20	-0.16	-0.06	-0.52	0.31	0.96	0.59	0.30	-0.16	0.23	-0.32	-0.15	0.30	-0.46	1.00																	
Mg	0.47	0.03	0.03	0.07	-0.06	-0.23	0.46	-0.10	-0.32	0.36	0.98	0.40	0.73	-0.22	-0.18	-0.02	-0.17	0.92	-0.30	0.46	1.00																
Mn	0.54	0.08	0.02	0.08	0.37	-0.27	0.38	-0.02	-0.22	0.12	-0.24	0.29	0.88	-0.33	-0.02	-0.10	0.04	0.55	-0.12	0.33	0.68	1.00															
Mo	-0.04	-0.05	-0.10	-0.01	0.06	0.28	-0.37	0.09	0.00	-0.11	-0.52	0.04	-0.21	0.34	0.08	-0.29	0.07	-0.50	0.01	-0.16	-0.49	-0.27	1.00														
Na	0.34	0.01	0.13	0.01	-0.07	-0.04	0.63	-0.05	-0.05	0.30	0.90	0.11	0.62	-0.15	-0.20	0.02	-0.13	0.67	-0.23	0.02	0.66	0.46	-0.20	1.00													
Ni	-0.17	0.33	0.36	0.31	-0.31	0.04	0.21	-0.04	-0.02	0.49	0.99	-0.16	-0.01	-0.07	-0.23	0.37	-0.14	0.36	-0.10	0.22	0.35	0.01	-0.39	0.15	1.00												
Pb	0.13	0.02	0.18	-0.03	0.29	0.51	-0.27	-0.01	-0.19	-0.21	-0.08	-0.02	0.11	0.31	-0.09	-0.14	0.04	-0.20	-0.16	0.03	-0.18	0.19	0.12	-0.10	-0.16	1.00											
Sb	0.57	-0.02	-0.02	-0.02	0.25	-0.02	0.50	0.11	-0.17	0.07	-0.89	0.08	0.88	-0.27	0.12	-0.10	0.06	0.55	-0.20	0.18	0.60	0.73	-0.12	0.63	-0.03	0.07	1.00										
Se	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00									
Sn	-0.11	0.05	-0.01	-0.14	-0.24	-0.21	0.10	-0.28	-0.34	0.27	0.98	0.33	-0.02	0.17	-0.22	-0.01	-0.10	0.30	-0.09	0.51	0.26	-0.01	-0.34	0.02	0.50	-0.20	-0.12	0.00	1.00							
Sr	0.36	0.03	0.00	0.09	-0.03	-0.09	0.44	-0.08	-0.23	0.43	1.00	0.24	0.85	-0.13	-0.02	-0.01	-0.17	0.63	-0.28	0.38	0.79	0.72	-0.21	0.68	0.23	-0.07	0.74	0.00	0.04	1.00						
Ti	0.19	0.04	-0.01	0.03	-0.20	-0.17	0.47	-0.14	-0.22	0.44	1.00	0.24	0.64	-0.26	-0.22	0.19	-0.16	0.84	-0.19	0.48	0.87	0.57	-0.51	0.58	0.52	-0.21	0.50	0.00	0.44	0.76	1.00					
Tl	-0.14	0.27	0.23	0.50	-0.39	-0.14	0.27	-0.13	0.09	0.12	0.99	0.03	-0.04	-0.42	-0.27	0.28	-0.11	0.56	0.10	0.07	0.43	-0.02	-0.58	0.15	0.50	-0.45	-0.13	0.00	0.32	0.05	0.53	1.00				
U	-0.05	0.22	0.32	0.18	0.30	0.28	-0.04	0.08	0.43	-0.18	-0.90	-0.32	-0.30	-0.21	0.02	0.00	0.17	-0.58	0.25	-0.43	-0.63	-0.28	0.53	-0.12	-0.22	0.40	-0.19	0.00	-0.41	-0.46	-0.64	-0.50	1.00			
V	0.30	0.03	0.05	0.02	-0.12	-0.23	0.39	-0.15	-0.40	0.37	1.00	0.42	0.73	-0.15	-0.18	-0.04	-0.17	0.86	-0.33	0.58	0.94	0.66	-0.51	0.57	0.36	-0.18	0.57	0.00	0.40	0.80	0.94	0.43	-0.70	1.00		
W	0.07	1.00	1.00	1.00	0.99	-0.58	-0.97	N/A	0.05	-0.50	-0.59	1.00	-0.18	-0.60	0.97	0.92	1.00	-0.34	0.31	-0.35	-0.74	0.93	1.00	-0.18	-0.72	0.85	0.89	0.00	-0.43	-0.52	-0.53	-0.71	0.88	-0.51	1.00		
Y	0.36	0.14	0.01	0.26	0.25	-0.28	0.26	-0.03	-0.16	0.41	0.80	0.26	0.45	-0.39	-0.25	-0.07	-0.17	0.45	-0.10	0.20	0.52	0.48	-0.21	0.42	0.27	0.02	0.32	0.00	0.21	0.45	0.47	0.18	-0.12	0.47	0.00	1.00	
Zn	-0.07	0.24	0.42	0.02	0.04	0.49	-0.01	-0.04	0.02	-0.11	-0.05	0.11	-0.03	1.00	-0.12	-0.20	-0.04	-0.06	-0.08	-0.13	-0.08	-0.09	0.04	0.19	0.07	0.22	-0.11	0.00	-0.03	-0.04	-0.10	-0.07	0.30	-0.09	0.83	-0.03	1.00

x Shading indicates a correlation coefficient greater than 0.75, or less than -0.75.

'N/A' indicates that the solid phase concentration was less than the analytical detection limit.

	NP	Total Sulphur	Sulphate-Sulphur	Sulphide-Sulphur	Total Carbon	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
NP	1.00																																				
Total Sulphur	-0.11	1.00																																			
Sulphate-Sulphur	0.02	0.92	1.00																																		
Sulphide-Sulphur	-0.10	1.00	0.88	1.00																																	
Total Carbon	0.14	-0.11	-0.13	-0.11	1.00																																
Ag	-0.03	-0.08	-0.09	-0.07	0.09	1.00																															
Al	0.20	0.04	0.09	0.02	-0.29	0.14	1.00																														
As	-0.06	0.49	0.25	0.43	-0.10	-0.18	0.01	1.00																													
Ba	0.00	0.01	-0.11	-0.11	-0.69	-0.12	0.32	-0.03	1.00																												
Be	-0.02	-0.08	-0.07	-0.08	0.85	0.00	-0.32	-0.13	-0.44	1.00																											
B	0.51	-0.11	-0.07	-0.07	0.88	0.61	-0.64	-0.07	-0.88	0.93	1.00																										
Bi	-0.11	0.22	0.04	0.15	-0.07	0.03	0.03	0.73	-0.03	-0.07	-0.43	1.00																									
Ca	0.34	-0.08	0.01	-0.11	0.71	0.05	0.03	-0.12	-0.47	0.53	0.89	-0.09	1.00																								
Cd	0.29	0.00	0.45	0.15	-0.12	0.02	0.16	-0.19	0.29	0.05	0.19	-0.09	-0.07	1.00																							
Co	-0.02	0.31	0.21	0.25	-0.08	-0.07	0.00	0.80	-0.08	-0.04	0.51	0.56	-0.08	-0.02	1.00																						
Cr	0.26	-0.05	-0.32	-0.30	0.06	-0.32	0.15	0.01	0.50	-0.09	-0.61	0.07	-0.08	0.16	-0.08	1.00																					
Cu	0.00	0.84	0.88	0.84	-0.07	-0.01	0.01	0.18	0.11	-0.09	-0.27	-0.07	0.00	0.06	0.00	0.04	1.00																				
Fe	0.32	0.00	0.07	-0.06	0.59	0.01	0.28	0.01	-0.41	0.46	0.93	0.01	0.93	-0.02	0.01	-0.11	0.03	1.00																			
K	0.18	0.19	0.26	0.19	-0.26	-0.10	0.87	0.00	0.19	-0.33	-0.79	0.00	0.14	0.07	-0.03	0.10	0.11	0.33	1.00																		
Li	0.01	-0.10	0.05	0.00	0.90	0.01	-0.63	-0.15	-0.74	0.93	0.90	-0.13	0.86	-0.07	-0.09	-0.34	-0.09	0.86	-0.67	1.00																	
Mg	0.31	-0.07	0.00	-0.10	0.64	0.04	0.08	-0.05	-0.41	0.49	0.91	-0.04	0.98	-0.07	-0.03	-0.09	-0.01	0.96	0.16	0.88	1.00																
Mn	0.22	-0.18	-0.21	-0.17	0.96	0.08	-0.32	-0.11	-0.55	0.85	0.90	-0.07	0.63	-0.10	-0.07	-0.03	-0.13	0.50	-0.36	0.86	0.56	1.00															
Mo	0.07	0.42	0.42	0.38	-0.25	0.02	0.02	0.54	-0.01	-0.18	-0.16	0.32	-0.05	0.13	0.57	-0.23	0.28	0.01	0.13	-0.14	-0.03	-0.21	1.00														
Na	0.04	-0.12	-0.08	-0.09	-0.16	0.24	0.27	-0.23	0.25	0.18	0.18	-0.16	-0.11	0.37	-0.10	0.02	-0.12	-0.02	0.04	-0.02	-0.07	0.02	-0.23	1.00													
Ni	0.01	0.21	0.16	0.20	0.18	0.21	-0.08	0.61	-0.26	0.24	0.91	0.45	0.15	-0.09	0.73	-0.15	0.01	0.22	-0.12	0.24	0.21	0.19	0.47	0.00	1.00												
Pb	0.01	0.20	-0.01	0.14	-0.18	0.31	0.03	0.60	0.05	-0.08	-0.45	0.84	-0.07	-0.05	0.41	0.19	-0.07	-0.02	0.06	-0.16	-0.04	-0.07	0.29	-0.09	0.29	1.00											
Sb	-0.14	0.34	0.14	0.28	0.13	0.02	-0.03	0.78	-0.09	-0.03	0.54	0.89	-0.03	-0.13	0.59	0.15	0.10	0.04	0.00	-0.08	0.01	0.00	0.36	-0.26	0.52	0.80	1.00										
Se	-0.54	0.81	0.77	0.99	-0.14	0.17	-0.01	0.84	-0.18	-0.14	-0.17	0.90	-0.16	-0.17	0.93	-0.34	-0.19	-0.05	-0.03	-0.12	-0.11	-0.18	0.48	-0.16	0.77	0.52	0.76	1.00									
Sn	0.09	0.08	0.00	0.13	0.55	0.02	-0.16	-0.02	-0.47	0.53	0.92	-0.10	0.35	-0.03	-0.03	-0.19	-0.05	0.30	0.03	0.86	0.30	0.58	-0.06	-0.01	0.10	-0.09	-0.06	-0.14	1.00								
Sr	-0.18	0.02	-0.18	-0.07	0.04	0.04	-0.11	0.01	0.43	0.28	-0.08	0.00	-0.19	0.15	-0.04	0.11	0.05	-0.16	-0.32	0.10	-0.14	0.16	-0.18	0.37	0.09	0.00	-0.06	-0.23	0.00	1.00							
Ti	0.23	-0.18	-0.23	-0.20	0.74	0.10	-0.09	-0.14	-0.22	0.70	0.92	-0.06	0.47	0.23	-0.12	0.18	-0.12	0.43	-0.24	0.62	0.45	0.80	-0.33	0.41	0.12	-0.05	-0.03	-0.29	0.43	0.39	1.00						
Tl	0.41	-0.28	-0.54	-0.53	0.68	0.20	-0.16	-0.24	-0.14	0.55	0.83	-0.14	0.66	0.24	-0.27	0.16	0.01	0.65	-0.42	0.55	0.66	0.72	-0.34	0.21	-0.09	-0.04	-0.09	-0.48	0.27	0.48	0.83	1.00					
U	0.20	0.29	0.20	0.22	-0.33	0.02	0.18	0.27	0.28	-0.33	-0.32	0.14	-0.14	0.19	0.21	0.19	0.34	-0.09	0.24	-0.39	-0.10	-0.33	0.60	-0.09	0.21	0.22	0.27	0.15	-0.22	-0.11	-0.28	-0.22	1.00				
V	0.21	-0.16	-0.26	-0.16	0.69	0.32	-0.14	-0.13	-0.41	0.71	0.88	-0.17	0.45	0.18	-0.10	-0.07	-0.12	0.46	-0.35	0.67	0.44	0.78	-0.33	0.50	0.24	-0.22	-0.05	-0.27	0.45	0.38	0.95	0.80	-0.40	1.00			
W	0.48	0.82	0.85	0.85	0.34	0.23	-0.17	-0.44	-0.26	0.34	0.43	0.10	0.35	0.44	0.43	-0.18	0.63	0.33	0.01	0.32	0.33	0.30	0.80	-0.12	0.27	0.35	0.60	-0.24	0.32	-0.34	0.24	0.13	0.65	0.18	1.00		
Y	0.06	-0.18	-0.15	-0.22	0.67	0.30	-0.29	-0.10	-0.17	0.71	0.94	-0.06	0.33	0.21	-0.09	-0.05	-0.08	0.26	-0.40	0.69	0.30	0.64	0.03	0.08	0.20	-0.08	-0.09	-0.20	0.37	0.33	0.53	0.69	-0.27	0.71	0.59	1.00	
Zn	-0.22	-0.11	-0.08	0.05	-0.13	0.13	-0.12	-0.02	-0.07	0.11	-0.33	0.01	-0.11	-0.13	0.06	-0.30	-0.12	-0.08	-0.17	0.17	-0.05	-0.02	0.13	-0.02	0.44	-0.08	-0.07	0.54	-0.06	0.24	-0.16	-0.24	0.16	-0.09	-0.20	0.16	1.00

x Shading indicates a correlation coefficient greater than 0.75, or less than -0.75.

Siltstone - Drill Core Samples

	NP	Total Sulphur	Sulphate-Sulphur	Sulphide-Sulphur	Total Carbon	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
NP	1.00																																				
Total Sulphur	0.23	1.00																																			
Sulphate-Sulphur	0.17	0.42	1.00																																		
Sulphide-Sulphur	0.14	0.90	-0.02	1.00																																	
Total Carbon	0.90	0.27	-0.15	0.36	1.00																																
Ag	0.34	-0.14	0.29	-0.35	0.12	1.00																															
Al	-0.25	-0.56	-0.49	-0.27	-0.08	-0.13	1.00																														
As	0.78	0.69	-0.06	0.95	0.90	0.08	0.03	1.00																													
Ba	-0.07	-0.07	-0.13	0.05	0.15	-0.24	0.65	0.29	1.00																												
Be	-0.60	-0.46	-0.43	-0.30	-0.50	-0.62	0.30	-0.38	0.25	1.00																											
B	1.00	1.00	N/A	N/A	1.00	-1.00	-1.00	-1.00	1.00	1.00	1.00																										
Bi	0.52	0.22	0.01	0.41	0.57	-0.23	-0.12	0.55	-0.10	0.07	-1.00	1.00																									
Ca	0.05	0.71	0.35	0.59	-0.10	0.20	-0.24	0.19	0.05	-0.26	N/A	-0.02	1.00																								
Cd	-0.29	-0.60	-0.58	-0.58	-0.64	1.00	0.74	-0.40	0.14	-0.11	-1.00	-0.62	-0.04	1.00																							
Co	0.16	0.54	0.17	0.31	0.15	0.04	0.04	0.53	0.42	-0.08	1.00	0.22	0.42	-0.55	1.00																						
Cr	-0.50	-0.28	-0.32	-0.21	-0.39	-0.41	-0.02	-0.49	0.23	0.46	1.00	-0.43	-0.20	0.05	-0.07	1.00																					
Cu	0.04	0.30	0.81	-0.22	-0.24	0.22	-0.28	-0.10	-0.04	-0.38	-1.00	-0.36	0.13	0.53	0.36	-0.07	1.00																				
Fe	0.57	-0.03	0.04	0.09	0.60	-0.42	0.15	0.54	0.17	0.02	1.00	0.75	-0.35	-0.56	0.15	-0.29	-0.06	1.00																			
K	0.35	-0.06	-0.31	0.07	0.59	-0.16	0.65	0.73	0.77	0.08	-1.00	0.32	0.03	-0.16	0.42	-0.22	-0.27	0.41	1.00																		
Li	-0.35	0.48	-0.05	0.56	-0.05	-0.21	-0.05	0.35	-0.04	0.31	N/A	0.73	0.13	-0.62	0.46	-0.10	-0.11	0.43	0.03	1.00																	
Mg	0.04	0.10	0.50	0.05	-0.07	-0.27	0.17	0.01	0.30	0.26	1.00	0.45	0.08	-0.20	0.20	0.05	-0.06	0.48	0.15	0.47	1.00																
Mn	0.17	0.47	0.63	0.13	-0.15	0.09	-0.07	0.18	0.18	-0.31	-1.00	-0.04	0.57	0.40	0.64	-0.10	0.44	-0.12	0.03	0.07	0.36	1.00															
Mo	0.49	0.07	0.23	0.09	0.68	-0.11	0.16	0.66	0.27	-0.35	-1.00	0.38	-0.13	-0.26	0.34	-0.34	0.13	0.47	0.49	0.07	0.11	0.08	1.00														
Na	-0.55	-0.46	-0.37	-0.27	-0.52	0.54	0.55	-0.44	0.10	0.06	-1.00	-0.60	0.08	0.85	-0.23	0.07	-0.16	-0.56	-0.02	-0.28	-0.23	-0.07	-0.27	1.00													
Ni	-0.45	0.28	0.57	0.17	-0.46	-0.48	-0.16	-0.45	0.11	0.24	1.00	-0.16	0.00	-0.18	0.07	0.55	0.32	-0.12	-0.39	0.29	0.48	0.21	-0.08	-0.16	1.00												
Pb	-0.05	0.51	0.71	0.42	-0.06	0.26	-0.05	-0.15	0.07	-0.01	1.00	-0.07	0.26	0.11	-0.14	-0.20	-0.04	-0.18	0.04	-0.11	-0.06	0.01	-0.21	0.00	-0.08	1.00											
Sb	0.68	0.54	-0.17	0.65	0.91	-0.19	-0.14	0.95	0.14	-0.40	1.00	0.51	0.14	-0.55	0.40	-0.35	-0.10	0.45	0.50	0.52	-0.13	-0.03	0.55	-0.50	-0.31	-0.14	1.00										
Se	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00									
Sn	-0.12	0.06	0.02	0.10	-0.12	-0.11	-0.01	-0.05	0.48	0.31	1.00	-0.09	0.28	-0.25	0.28	0.61	-0.10	-0.10	0.09	0.02	0.32	0.30	-0.22	-0.16	0.38	0.19	-0.06	N/A	1.00								
Sr	-0.59	-0.02	0.45	-0.12	-0.59	0.13	0.21	-0.40	0.24	0.37	1.00	-0.25	0.33	-0.07	-0.01	0.01	0.12	-0.38	-0.03	0.11	0.19	0.06	-0.22	0.33	0.32	0.50	-0.45	N/A	0.26	1.00							
Ti	-0.45	-0.01	-0.13	0.17	-0.42	0.23	0.40	-0.12	0.54	0.42	1.00	-0.19	0.48	0.24	0.24	0.21	-0.19	-0.29	0.26	0.10	0.20	0.16	-0.33	0.43	0.11	0.11	-0.19	N/A	0.58	0.59	1.00						
Tl	0.45	0.24	0.40	0.09	0.27	-0.35	-0.11	0.26	0.11	-0.07	1.00	0.47	-0.07	-0.43	0.16	-0.21	0.26	0.76	0.16	0.28	0.56	0.14	0.09	-0.58	0.06	-0.14	0.22	N/A	-0.02	-0.27	-0.19	1.00					
U	-0.05	-0.42	-0.26	-0.37	-0.14	0.26	0.37	-0.17	0.01	-0.23	-1.00	-0.34	-0.19	0.88	-0.18	-0.19	0.02	-0.22	0.15	-0.44	-0.36	-0.03	0.04	0.63	-0.43	0.08	-0.29	N/A	-0.52	-0.17	-0.18	-0.28	1.00				
V	-0.45	-0.32	0.03	-0.37	-0.47	-0.23	0.40	-0.27	0.35	0.43	1.00	0.07	-0.06	-0.23	0.29	0.38	0.08	0.13	0.12	0.53	0.56	0.10	0.10	0.18	0.50	-0.25	-0.31	N/A	0.23	0.39	0.29	0.08	-0.15	1.00			
W	1.00	1.00	N/A	N/A	1.00	-1.00	-1.00	-1.00	1.00	1.00	1.00	-1.00	N/A	-1.00	1.00	1.00	-1.00	1.00	-1.00	N/A	1.00	-1.00	-1.00	-1.00	1.00	1.00	1.00	N/A	1.00	1.00	1.00	1.00	-1.00	1.00	1.00		
Y	-0.51	0.22	0.46	-0.06	-0.57	-0.11	-0.34	-0.48	-0.30	0.46	N/A	0.02	0.21	0.14	-0.03	0.13	0.05	-0.29	-0.48	0.46	0.28	0.01	-0.25	0.00	0.44	0.16	-0.45	N/A	0.01	0.45	0.11	-0.12	-0.21	0.25	N/A	1.00	
Zn	0.09	-0.09	0.84	-0.10	-0.02	-0.02	0.04	-0.11	0.06	-0.18	-1.00	0.35	-0.05	-0.43	0.05	-0.05	0.20	0.39	-0.10	0.24	0.64	0.23	0.37	-0.21	0.43	-0.03	-0.15	N/A	0.07	0.09	-0.14	0.40	-0.15	0.49	-1.00	0.07	1.00

Wacke - Drill Core Samples

	NP	Total Sulphur	Sulphate-Sulphur	Sulphide-Sulphur	Total Carbon	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
NP	1.00																																				
Total Sulphur	-0.07	1.00																																			
Sulphate-Sulphur	0.43	0.57	1.00																																		
Sulphide-Sulphur	-0.10	0.99	0.56	1.00																																	
Total Carbon	0.54	-0.18	0.40	-0.22	1.00																																
Ag	0.21	0.56	0.39	0.65	0.04	1.00																															
Al	-0.17	-0.21	-0.04	-0.18	0.13	0.20	1.00																														
As	-0.23	0.76	0.18	0.82	-0.35	0.23	-0.34	1.00																													
Ba	-0.39	-0.18	-0.12	-0.12	0.08	0.08	0.86	-0.21	1.00																												
Be	0.19	-0.16	0.19	-0.17	0.33	0.31	0.58	-0.30	0.47	1.00																											
B	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00																										
Bi	0.63	-0.14	0.18	-0.06	0.21	0.19	-0.20	-0.05	-0.27	-0.13	N/A	1.00																									
Ca	0.43	-0.18	0.12	-0.19	0.37	0.19	-0.07	-0.21	-0.34	0.19	N/A	0.41	1.00																								
Cd	N/A	-0.30	N/A	N/A	N/A	N/A	-0.22	-0.59	-0.26	-0.26	N/A	-0.44	-0.03	1.00																							
Co	-0.14	0.17	0.14	0.07	0.22	0.13	0.14	0.14	-0.05	0.00	N/A	0.22	0.48	-0.58	1.00																						
Cr	0.00	0.28	-0.08	0.18	0.20	-0.03	-0.08	0.26	-0.04	0.07	N/A	-0.68	-0.11	0.02	-0.18	1.00																					
Cu	-0.04	0.57	0.38	0.48	-0.24	0.53	-0.01	0.38	-0.04	0.28	N/A	0.06	-0.06	-0.56	0.06	0.04	1.00																				
Fe	0.72	0.06	0.24	-0.03	0.10	0.23	-0.22	-0.05	-0.45	-0.03	N/A	0.49	0.39	0.36	0.04	-0.08	-0.04	1.00																			
K	-0.30	-0.11	-0.12	0.11	-0.12	0.09	0.80	-0.10	0.90	0.36	N/A	-0.29	-0.38	-0.26	-0.13	0.01	-0.03	-0.30	1.00																		
Li	0.35	-0.20	0.26	-0.16	0.15	0.24	0.05	-0.16	-0.21	0.09	N/A	0.55	0.64	-0.34	0.32	-0.31	0.08	0.25	-0.19	1.00																	
Mg	0.83	-0.07	0.26	-0.08	0.17	0.15	-0.35	-0.11	-0.58	-0.02	N/A	0.39	0.54	0.18	-0.14	0.03	-0.04	0.79	-0.43	0.41	1.00																
Mn	0.41	-0.22	0.07	-0.17	0.33	-0.02	-0.08	-0.12	-0.26	0.16	N/A	0.41	0.85	-0.22	0.33	-0.07	-0.03	0.35	-0.25	0.47	0.52	1.00															
Mo	-0.31	0.22	-0.19	0.26	-0.16	-0.31	-0.10	0.39	0.04	-0.13	N/A	-0.03	-0.28	0.01	0.10	-0.20	0.00	-0.21	0.13	-0.22	-0.38	-0.19	1.00														
Na	-0.23	-0.26	-0.08	-0.26	0.21	0.09	0.92	-0.34	0.76	0.63	N/A	-0.18	0.07	-0.32	0.25	-0.12	0.02	-0.30	0.64	0.05	-0.37	0.05	-0.05	1.00													
Ni	-0.04	0.21	0.08	-0.04	0.28	0.13	0.10	0.15	-0.04	0.21	N/A	0.01	0.17	-0.26	0.18	0.21	0.13	0.12	-0.13	0.02	0.01	0.09	0.03	0.18	1.00												
Pb	0.05	0.04	0.13	0.05	0.09	0.18	0.25	0.03	0.12	0.34	N/A	-0.14	0.10	-0.49	0.09	0.04	0.00	-0.08	0.06	0.15	-0.04	0.07	-0.02	0.29	0.08	1.00											
Sb	0.18	0.53	0.33	0.45	-0.17	0.34	-0.29	0.58	-0.37	-0.13	N/A	0.25	0.25	-0.31	0.21	0.10	0.58	0.33	-0.19	0.24	0.42	0.30	0.08	-0.29	0.13	-0.23	1.00										
Se	N/A	1.00	N/A	N/A	N/A	N/A	-1.00	1.00	-1.00	-1.00	N/A	1.00	1.00	-1.00	1.00	-1.00	-1.00	1.00	-1.00	N/A	-1.00	1.00	1.00	1.00	1.00	N/A	1.00	1.00									
Sn	0.17	0.11	-0.07	0.04	0.16	0.29	-0.23	0.12	-0.35	0.00	N/A	0.46	0.61	0.01	0.53	-0.13	0.02	0.37	-0.37	0.37	0.22	0.49	0.10	-0.20	0.37	-0.14	0.23	1.00	1.00								
Sr	-0.09	-0.08	0.16	-0.11	0.25	0.17	0.58	-0.22	0.30	0.31	N/A	0.02	0.28	-0.26	0.47	-0.13	0.09	-0.10	0.16	0.50	-0.15	0.02	-0.16	0.61	0.26	0.28	-0.07	-1.00	-0.03	1.00							
Ti	0.03	0.07	0.04	-0.02	0.05	0.31	0.15	-0.04	-0.15	0.09	N/A	0.23	0.58	0.27	0.66	-0.01	0.14	0.32	-0.17	0.63	0.22	0.30	-0.20	0.13	0.23	0.00	0.31	-1.00	0.53	0.66	1.00						
Tl	0.52	0.11	0.08	0.10	-0.20	0.19	-0.12	-0.05	-0.35	-0.04	N/A	0.23	0.25	0.30	-0.28	0.09	0.01	0.65	-0.13	0.38	0.70	0.28	-0.31	-0.35	0.01	-0.05	0.28	-1.00	0.26	-0.11	0.27	1.00					
U	-0.22	-0.29	-0.20	-0.21	-0.05	0.19	0.83	-0.32	0.80	0.68	N/A	-0.38	-0.17	-0.24	-0.08	0.04	0.05	-0.39	0.78	-0.09	-0.36	-0.16	-0.02	0.77	-0.07	0.21	-0.31	-1.00	-0.28	0.24	-0.11	-0.20	1.00				
V	0.02	-0.03	0.05	-0.13	0.28	0.24	0.46	-0.18	0.15	0.14	N/A	0.23	0.38	-0.07	0.62	-0.17	0.04	0.14	0.06	0.56	0.00	0.19	-0.20	0.40	0.22	0.11	0.03	1.00	0.33	0.81	0.84	0.16	0.09	1.00			
W	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00		
Y	-0.09	-0.05	-0.03	-0.17	0.05	0.31	0.65	-0.21	0.44	0.85	N/A	-0.25	0.23	-0.31	0.28	0.17	0.27	-0.10	0.33	0.13	-0.15	0.07	-0.11	0.73	0.28	0.20	-0.07	-1.00	0.08	0.54	0.38	-0.11	0.68	0.39	N/A	1.00	
Zn	-0.03	-0.25	-0.02	-0.17	0.22	-0.33	0.36	-0.25	0.35	0.07	N/A	0.10	-0.07	-0.14	0.04	-0.32	-0.20	-0.19	0.34	-0.01	-0.18	0.19	0.24	0.39	-0.18	0.10	-0.28	-1.00	-0.28	0.13	-0.23	-0.20	0.22	0.09	N/A	-0.05	1.00

x Shading indicates a correlation coefficient greater than 0.75, or less than -0.75.

'N/A' indicates that the solid phase concentration was less than the analytical detection limit.

Black Rock Schist +/- magnetite - Drill Core

	NP	Total Sulphur	Sulphate-Sulphur	Sulphide-Sulphur	Total Carbon	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
NP	1.00																																				
Total Sulphur	-0.03	1.00																																			
Sulphate-Sulphur	-0.01	0.82	1.00																																		
Sulphide-Sulphur	-0.03	0.99	0.72	1.00																																	
Total Carbon	0.79	-0.17	0.07	-0.23	1.00																																
Ag	-0.08	0.26	0.39	0.20	0.16	1.00																															
Al	-0.07	0.05	-0.15	0.16	-0.12	0.20	1.00																														
As	-0.09	0.05	-0.17	0.08	-0.16	0.26	-0.20	1.00																													
Ba	-0.10	-0.10	-0.21	-0.23	-0.05	0.38	0.54	-0.24	1.00																												
Be	-0.10	-0.10	0.11	-0.23	0.10	-0.30	0.04	0.06	-0.23	1.00																											
B	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00																										
Bi	-0.08	-0.02	0.09	0.02	0.00	0.10	0.02	0.30	-0.30	0.32	N/A	1.00																									
Ca	0.18	-0.01	0.26	-0.07	0.24	0.04	-0.22	-0.16	-0.28	-0.10	N/A	-0.02	1.00																								
Cd	0.08	-0.26	0.00	-0.45	0.52	N/A	-0.24	0.25	0.32	0.27	N/A	-0.17	0.36	1.00																							
Co	-0.11	-0.04	-0.07	-0.12	-0.07	0.22	0.12	0.39	-0.14	0.09	N/A	0.17	0.00	0.35	1.00																						
Cr	-0.19	0.10	0.09	0.05	-0.11	-0.08	0.02	-0.12	0.06	0.34	N/A	-0.41	-0.01	0.45	-0.26	1.00																					
Cu	-0.04	0.11	0.00	0.10	0.03	0.09	0.04	0.19	0.02	0.07	N/A	-0.01	0.30	0.27	0.09	0.10	1.00																				
Fe	-0.09	0.09	0.22	0.12	-0.16	-0.11	-0.03	0.31	-0.49	0.55	N/A	0.52	0.00	-0.17	0.05	0.13	-0.03	1.00																			
K	0.02	-0.02	-0.26	0.11	0.03	0.03	0.65	-0.08	0.43	0.06	N/A	0.03	-0.15	0.30	-0.20	0.09	0.14	0.01	1.00																		
Li	-0.08	-0.13	-0.13	0.01	-0.08	0.07	0.42	0.24	0.00	0.28	N/A	0.50	-0.35	-0.30	0.31	-0.24	-0.03	0.20	0.04	1.00																	
Mg	0.35	0.00	-0.16	0.07	0.03	-0.38	-0.04	0.08	-0.40	-0.15	N/A	0.08	0.05	-0.22	-0.22	-0.05	-0.08	0.21	0.14	0.07	1.00																
Mn	-0.12	-0.07	0.15	-0.11	0.04	0.21	-0.11	-0.09	-0.22	0.03	N/A	0.14	0.81	0.25	0.26	-0.03	0.34	0.05	-0.21	-0.09	-0.11	1.00															
Mo	-0.07	0.01	0.43	-0.10	0.32	0.40	-0.09	-0.07	-0.03	0.34	N/A	0.33	0.02	0.26	0.05	0.04	-0.04	0.18	-0.16	0.16	-0.29	0.20	1.00														
Na	-0.02	-0.15	-0.06	-0.23	0.05	0.13	0.36	-0.06	0.22	-0.03	N/A	-0.10	0.00	-0.05	0.60	-0.02	-0.10	-0.21	-0.14	0.25	-0.36	0.10	0.06	1.00													
Ni	-0.21	0.03	0.05	-0.06	-0.08	-0.14	0.35	0.04	0.07	0.55	N/A	0.07	-0.15	0.40	-0.02	0.40	0.03	0.30	0.31	0.22	-0.09	-0.10	0.15	0.10	1.00												
Pb	-0.12	0.42	0.49	0.26	0.04	0.15	-0.12	0.04	-0.10	0.46	N/A	0.41	-0.10	0.10	0.02	0.19	0.03	0.38	-0.02	-0.01	-0.16	0.04	0.53	-0.13	0.43	1.00											
Sb	0.17	0.18	0.14	0.04	0.06	0.08	-0.33	0.36	-0.41	0.11	N/A	0.39	0.14	0.58	-0.06	0.09	0.13	0.42	-0.10	-0.02	0.48	0.03	0.20	-0.32	-0.07	0.36	1.00										
Se	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00									
Sn	-0.23	-0.01	0.17	-0.07	0.09	0.13	0.22	-0.02	-0.05	0.50	N/A	0.32	0.32	0.23	0.15	0.04	0.31	0.39	0.19	0.12	-0.38	0.51	0.38	0.16	0.20	0.23	-0.11	N/A	1.00								
Sr	0.02	-0.15	-0.19	-0.18	0.06	0.24	0.51	-0.31	0.60	-0.21	N/A	-0.12	-0.26	-0.01	0.02	0.03	-0.14	-0.41	0.14	0.28	-0.25	-0.23	0.12	0.64	0.18	-0.12	-0.34	N/A	-0.11	1.00							
Ti	0.01	-0.10	-0.16	-0.04	0.10	0.16	0.52	-0.01	0.30	0.28	N/A	0.15	-0.07	0.74	0.18	0.20	0.06	0.04	0.62	0.27	-0.18	0.04	0.04	0.36	0.32	0.09	-0.13	N/A	0.36	0.36	1.00						
Tl	-0.14	0.06	-0.13	0.15	-0.04	-0.05	0.31	0.14	-0.07	0.34	N/A	0.14	-0.49	0.39	-0.07	0.26	-0.13	0.22	0.44	0.24	0.14	-0.43	0.05	-0.19	0.44	0.14	-0.06	N/A	0.05	0.05	0.34	1.00					
U	-0.08	0.02	0.42	-0.09	0.32	0.37	-0.04	-0.07	-0.02	0.42	N/A	0.31	-0.01	0.32	-0.01	0.12	-0.01	0.23	-0.05	0.12	-0.27	0.15	0.98	-0.02	0.23	0.57	0.20	N/A	0.40	0.03	0.08	0.16	1.00				
V	-0.17	-0.13	-0.07	-0.10	-0.04	0.25	0.63	-0.02	0.38	0.30	N/A	0.12	-0.33	0.27	0.48	0.11	-0.02	0.05	0.31	0.51	-0.33	-0.08	0.20	0.70	0.39	0.16	-0.25	N/A	0.31	0.54	0.72	0.26	0.19	1.00			
W	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00		
Y	-0.02	-0.01	0.27	-0.12	0.28	-0.01	0.34	-0.15	-0.01	0.62	N/A	0.13	-0.01	0.57	-0.05	0.34	0.19	0.22	0.33	0.31	-0.01	0.10	0.52	-0.07	0.61	0.38	0.03	N/A	0.38	0.01	0.33	0.48	0.60	0.31	N/A	1.00	
Zn	0.14	-0.05	0.16	-0.03	0.23	0.25	0.20	-0.15	-0.14	0.04	N/A	0.47	0.09	-0.20	0.22	-0.27	-0.03	0.29	-0.02	0.40	0.16	0.26	0.28	0.18	0.12	0.29	0.11	N/A	0.18	0.11	0.09	-0.04	0.24	0.26	N/A	0.22	1.00

Black Rock Schist + magnetite - Drill Core

	NP	Total Sulphur	Sulphate-Sulphur	Sulphide-Sulphur	Total Carbon	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
NP	1.00																																				
Total Sulphur	0.31	1.00																																			
Sulphate-Sulphur	0.82	0.53	1.00																																		
Sulphide-Sulphur	-0.09	0.92	0.10	1.00																																	
Total Carbon	0.82	0.20	0.78	-0.23	1.00																																
Ag	0.02	0.12	0.46	-0.16	0.03	1.00																															
Al	-0.48	-0.09	-0.23	0.03	-0.25	0.02	1.00																														
As	-0.22	0.34	-0.26	0.33	-0.21	0.01	-0.21	1.00																													
Ba	-0.38	-0.18	-0.16	-0.14	-0.21	0.17	0.71	-0.14	1.00																												
Be	-0.05	-0.12	-0.08	-0.16	0.04	-0.23	0.35	0.17	-0.13	1.00																											
B	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00																										
Bi	-0.03	0.16	-0.05	0.12	0.02	-0.02	-0.06	-0.01	-0.39	0.20	N/A	1.00																									
Ca	0.28	-0.17	0.28	-0.17	0.30	0.18	-0.36	-0.20	-0.34	0.08	N/A	0.01	1.00																								
Cd	N/A	-0.27	N/A	N/A	N/A	N/A	-0.12	-0.23	-0.25	-0.25	N/A	0.78	-0.41	1.00																							
Co	-0.13	0.22	-0.01	0.13	-0.02	0.29	-0.06	0.57	-0.10	0.15	N/A	0.30	0.13	-0.37	1.00																						
Cr	-0.46	-0.11	-0.20	-0.08	-0.09	0.25	0.21	0.34	0.31	0.24	N/A	-0.34	0.03	-0.05	0.35	1.00																					
Cu	-0.09	0.16	0.07	0.05	-0.09	0.43	0.06	-0.04	0.21	-0.24	N/A	0.15	-0.04	0.17	0.23	-0.13	1.00																				
Fe	-0.04	0.21	0.05	0.18	0.02	0.02	0.10	0.28	-0.41	0.77	N/A	0.48	0.18	-0.08	0.35	-0.03	0.04	1.00																			
K	-0.33	-0.11	-0.27	-0.02	-0.30	-0.24	0.48	0.01	0.33	0.42	N/A	-0.01	-0.45	-0.06	-0.26	0.02	0.09	0.23	1.00																		
Li	-0.31	-0.22	-0.59	-0.05	-0.33	-0.43	-0.15	0.02	0.00	-0.21	N/A	0.15	-0.11	0.05	-0.02	-0.25	-0.10	-0.14	-0.26	1.00																	
Mg	0.12	0.16	-0.01	0.30	-0.32	-0.25	-0.30	-0.08	-0.22	-0.10	N/A	0.05	-0.06	0.44	-0.34	-0.33	0.13	0.11	0.20	0.16	1.00																
Mn	0.09	-0.10	0.24	-0.07	0.15	0.35	-0.13	-0.14	-0.24	0.17	N/A	0.12	0.84	0.20	-0.50	0.20	-0.03	-0.01	0.37	-0.44	-0.07	-0.05	1.00														
Mo	0.25	0.02	-0.05	-0.10	0.89	-0.18	-0.14	-0.09	-0.15	0.04	N/A	-0.21	0.43	-0.20	0.13	0.25	-0.14	-0.07	-0.33	-0.01	-0.33	0.26	1.00														
Na	-0.25	-0.17	-0.05	-0.23	0.02	0.17	0.63	-0.21	0.53	-0.05	N/A	-0.08	-0.01	0.03	0.10	0.19	-0.02	-0.19	-0.13	-0.06	-0.51	0.05	0.10	1.00													
Ni	-0.13	-0.01	0.05	-0.17	0.03	0.46	0.22	0.22	0.28	-0.01	N/A	-0.11	0.13	-0.47	0.61	0.25	0.13	0.13	-0.38	0.11	-0.36	0.28	0.12	0.51	1.00												
Pb	0.02	0.22	0.15	0.09	0.22	0.25	0.07	0.33	-0.25	0.47	N/A	0.52	0.12	0.34	0.71	0.26	0.14	0.58	-0.05	-0.26	-0.44	0.10	0.01	0.09	0.30	1.00											
Sb	-0.01	0.17	0.06	0.08	0.00	0.18	0.05	0.07	0.06	0.03	N/A	0.25	-0.08	0.12	0.12	-0.13	0.84	0.29	0.36	-0.10	0.26	-0.07	-0.11	-0.21	-0.12	0.17	1.00										
Se	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00									
Sn	-0.01	-0.23	0.03	-0.34	0.39	0.06	0.35	-0.04	0.09	0.54	N/A	-0.02	0.29	-0.62	0.19	0.20	-0.15	0.32	0.21	-0.31	-0.57	0.26	0.41	0.27	0.17	0.32	-0.09	N/A	1.00								
Sr	-0.16	-0.16	0.02	-0.50	0.01	0.11	0.56	-0.33	0.68	-0.18	N/A	-0.19	-0.28	0.14	-0.18	0.11	0.14	-0.43	0.11	0.02	-0.31	-0.33	0.02	0.74	0.23	-0.09	0.02	N/A	-0.06	1.00							
Ti	-0.45	-0.39	-0.36	-0.27	-0.10	-0.12	0.51	0.00	0.29	0.55	N/A	-0.14	0.09	-0.36	-0.09	0.24	-0.27	0.24	0.49	-0.15	-0.38	0.03	0.00	0.38	0.01	0.15	-0.11	N/A	0.65	0.23	1.00						
Tl	0.13	-0.22	-0.07	-0.27	0.11	-0.14	0.01	0.17	-0.12	0.53	N/A	-0.19	-0.29	-0.03	-0.24	0.07	-0.33	0.32	0.48	0.02	0.10	-0.32	-0.14	-0.46	-0.22	0.02	-0.03	N/A	0.23	-0.27	0.37	1.00					
U	0.46	0.08	0.60	-0.22	0.77	0.15	-0.06	-0.10	-0.20	0.23	N/A	-0.10	0.53	-0.19	0.29	0.15	0.01	0.22	-0.36	-0.21	-0.46	0.38	0.84	0.26	0.38	0.36	0.00	N/A	0.58	0.07	0.14	-0.06	1.00				
V	-0.39	-0.25	-0.18	-0.22	-0.02	0.10	0.78	-0.04	0.59	0.29	N/A	-0.16	-0.12	-0.12	0.05	0.35	-0.21	0.02	0.20	-0.13	-0.56	-0.03	0.05	0.82	0.38	0.12	-0.21	N/A	0.47	0.59	0.72	-0.01	0.19	1.00			
W	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00		
Y	-0.21	-0.22	-0.13	-0.30	0.04	0.04	0.50	-0.08	0.01	0.65	N/A	0.19	0.21	-0.14	0.20	0.27	-0.05	0.46	-0.04	-0.08	-0.50	0.33	0.25	0.47	0.27	0.46	-0.04	N/A	0.53	0.18	0.48	0.02	0.45	0.56	N/A	1.00	
Zn	-0.15	0.11	0.06	0.04	-0.07	0.50	0.04	0.11	-0.08	-0.12	N/A	0.31	0.21	0.10	0.72	-0.05	0.49	0.22	-0.33	-0.13	-0.26	0.30	-0.08	0.31	0.62	0.53	0.19	N/A	0.10	-0.03	-0.13	-0.48	0.24	0.06	N/A	0.22	1.00

x Shading indicates a correlation coefficient greater than 0.75, or less than -0.75.
'N/A' indicates that the solid phase concentration was less than the analytical detection limit.

Sub-economic Mineralized Mine Rock - Black Rock Schist - Run of Mine

	NP	Total Sulphur	Acid Leachable SO4-S	Sulphide-S	Total Carbon	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
NP	1.00																																			
Total Sulphur	-0.58	1.00																																		
Acid Leachable SO4-S	0.47	-0.54	1.00																																	
Sulphide-S	-0.61	0.95	-0.78	1.00																																
Total Carbon	0.66	-0.89	0.49	-0.85	1.00																															
Ag	-0.26	0.43	-0.08	0.36	-0.29	1.00																														
Al	0.17	-0.50	0.44	-0.53	0.44	0.11	1.00																													
As	-0.61	0.86	-0.70	0.90	-0.79	0.24	-0.42	1.00																												
Ba	0.47	-0.85	0.64	-0.87	0.92	-0.25	0.44	-0.79	1.00																											
Be	-0.66	0.75	-0.47	0.73	-0.88	0.40	-0.04	0.78	-0.79	1.00																										
B	-0.18	0.26	0.07	0.17	-0.25	-0.20	-0.33	0.44	-0.23	0.38	1.00																									
Bi	0.34	-0.35	0.62	-0.50	0.42	0.56	0.35	-0.25	0.41	-0.03	0.03	1.00																								
Ca	-0.09	0.18	0.32	0.02	-0.25	0.54	0.39	-0.16	-0.17	0.30	-0.13	0.36	1.00																							
Cd	0.34	-0.21	-0.21	-0.07	0.44	-0.10	-0.10	-0.28	0.30	-0.54	-0.41	-0.21	-0.50	1.00																						
Co	-0.25	0.53	-0.64	0.63	-0.42	-0.28	-0.66	0.63	-0.47	0.09	0.26	-0.63	-0.65	0.22	1.00																					
Cr	0.08	-0.36	0.04	-0.28	0.21	-0.38	0.17	-0.31	0.27	-0.11	0.03	-0.03	-0.13	-0.02	-0.27	1.00																				
Cu	-0.61	0.69	-0.28	0.63	-0.78	0.43	0.02	0.27	-0.62	0.57	-0.05	-0.22	0.71	-0.44	-0.12	-0.13	1.00																			
Fe	-0.61	0.85	-0.75	0.92	-0.86	0.28	-0.38	0.92	-0.91	0.80	0.24	-0.40	-0.03	-0.19	0.59	-0.40	0.46	1.00																		
K	0.54	-0.74	0.35	-0.69	0.88	-0.32	0.22	-0.54	0.82	-0.79	-0.25	0.21	-0.52	0.59	-0.03	0.00	-0.84	-0.63	1.00																	
Li	0.07	0.09	-0.48	0.24	0.03	-0.39	-0.55	0.23	-0.08	-0.32	-0.04	-0.52	-0.86	0.63	0.81	-0.19	-0.50	0.22	0.42	1.00																
Mg	0.06	0.14	-0.53	0.30	-0.09	-0.43	-0.46	0.26	-0.21	-0.23	-0.06	-0.63	-0.77	0.55	0.83	-0.20	-0.37	0.31	0.30	0.95	1.00															
Mn	0.08	-0.04	0.55	-0.23	-0.02	0.53	0.46	-0.28	0.05	0.16	-0.07	0.59	0.93	-0.49	-0.73	-0.09	0.45	-0.23	-0.31	-0.87	-0.81	1.00														
Mo	0.34	-0.31	0.50	-0.42	0.51	0.48	0.15	-0.01	0.36	0.01	0.12	0.87	-0.01	-0.04	-0.31	-0.16	-0.43	-0.21	0.35	-0.19	-0.37	0.21	1.00													
Na	-0.01	-0.41	0.52	-0.50	0.42	0.18	0.72	-0.52	0.58	-0.16	-0.20	0.42	0.54	-0.21	-0.78	0.22	0.16	-0.55	0.15	-0.73	-0.78	0.58	0.21	1.00												
Ni	0.58	-0.66	0.45	-0.66	0.79	-0.34	0.01	-0.66	0.81	-0.88	-0.11	0.28	-0.36	0.37	-0.08	0.27	-0.68	-0.82	0.78	0.22	0.10	-0.13	0.27	0.16	1.00											
Pb	0.47	-0.31	-0.08	-0.21	0.17	-0.49	-0.08	-0.25	0.13	-0.24	-0.25	-0.20	-0.23	0.13	0.03	0.43	-0.24	-0.23	0.17	0.16	0.19	-0.26	-0.20	-0.11	0.23	1.00										
Sb	-0.25	0.46	-0.02	0.35	-0.30	0.67	-0.01	0.55	-0.24	0.57	0.36	0.65	0.11	-0.32	-0.04	-0.28	-0.01	0.37	-0.20	-0.21	-0.29	0.22	0.75	-0.08	-0.28	-0.42	1.00									
Se	0.24	-0.35	0.66	-0.51	0.40	0.55	0.34	-0.28	0.45	-0.06	0.05	0.99	0.36	-0.23	-0.64	-0.02	-0.21	-0.43	0.22	-0.53	-0.66	0.61	0.85	0.47	0.30	-0.26	0.62	1.00								
Sn	-0.55	0.63	-0.20	0.54	-0.75	0.50	0.11	0.47	-0.68	0.84	0.12	0.01	0.72	-0.65	-0.22	-0.10	0.86	0.57	-0.90	-0.64	-0.52	0.53	-0.16	0.16	-0.84	-0.24	0.32	0.00	1.00							
Sr	0.40	-0.82	0.49	-0.80	0.91	-0.33	0.43	-0.68	0.97	-0.73	-0.17	0.29	-0.30	0.35	-0.35	0.33	-0.65	-0.82	0.84	0.03	-0.11	-0.11	0.31	0.55	0.76	0.15	-0.25	0.33	-0.70	1.00						
Ti	-0.60	0.68	-0.70	0.77	-0.68	0.07	-0.28	0.71	-0.74	0.53	0.04	-0.68	-0.04	-0.05	0.60	-0.40	0.50	0.85	-0.47	0.30	0.41	-0.30	-0.52	-0.38	-0.73	-0.20	-0.05	-0.69	0.45	-0.62	1.00					
Tl	0.12	0.15	-0.47	0.28	-0.01	-0.25	-0.47	0.38	-0.22	-0.12	0.00	-0.44	-0.77	0.59	0.80	-0.33	-0.47	0.39	0.33	0.94	0.92	-0.78	-0.10	-0.78	0.03	0.06	-0.03	-0.48	-0.49	-0.12	0.40	1.00				
U	-0.08	0.01	0.03	-0.01	0.09	0.57	0.18	-0.12	0.29	-0.05	-0.27	0.57	0.18	0.01	-0.36	0.21	0.04	-0.23	0.08	-0.28	-0.40	0.26	0.47	0.39	0.17	0.02	0.41	0.58	0.07	0.28	-0.32	-0.34	1.00			
V	-0.66	0.56	-0.67	0.67	-0.59	0.00	-0.17	0.69	-0.63	0.51	0.04	-0.66	-0.14	-0.06	0.58	-0.39	0.41	0.81	-0.36	0.32	0.42	-0.38	-0.47	-0.31	-0.70	-0.18	-0.02	-0.66	0.37	-0.49	0.96	0.40	-0.32	1.00		
W	-0.52	0.62	-0.47	0.64	-0.60	0.06	-0.30	0.43	-0.52	0.29	-0.05	-0.55	0.04	0.04	0.32	-0.15	0.49	0.53	-0.52	0.15	0.22	-0.21	-0.55	-0.29	-0.55	-0.22	-0.14	-0.55	0.37	-0.49	0.63	0.19	-0.14	0.59	1.00	
Y	-0.11	0.09	0.35	-0.06	-0.19	0.59	0.49	-0.18	-0.09	0.33	-0.16	0.46	0.96	-0.53	-0.74	0.02	0.65	-0.09	-0.50	-0.91	-0.84	0.92	0.08	0.60	-0.35	-0.25	0.20	0.46	0.72	-0.21	-0.13	-0.82	0.35	-0.20	0.01	1.00
Zn	-0.59	0.67	-0.48	0.69	-0.64	0.35	-0.11	0.25	-0.52	0.35	-0.15	-0.39	0.33	0.09	0.15	0.10	0.74	0.43	-0.56	-0.10	-0.03	0.10	-0.47	-0.01	-0.43	-0.22	-0.14	-0.36	0.50	-0.49	0.51	-0.12	0.04	0.39	0.48	0.27

Sub-economic Mineralized Mine Rock - Run of Mine

	NP	Total Sulphur	Acid Leachable SO4-S	Sulphide-S	Total Carbon	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
NP	1.00																																			
Total Sulphur	-0.03	1.00																																		
Acid Leachable SO4-S	0.29	0.95	1.00																																	
Sulphide-S	-0.51	0.87	0.68	1.00																																
Total Carbon	-0.13	-0.41	-0.39	-0.23	1.00																															
Ag	0.90	0.15	0.41	-0.33	-0.54	1.00																														
Al	0.84	-0.24	0.06	-0.57	0.43	0.52	1.00																													
As	0.03	0.94	0.92	0.81	-0.08	0.06	0.00	1.00																												
Ba	0.82	-0.21	0.09	-0.53	0.46	0.49	1.00	0.05	1.00																											
Be	-0.83	-0.19	-0.47	0.19	-0.27	-0.58	-0.91	-0.41	-0.92	1.00																										
B	0.56	-0.09	0.14	-0.28	0.70	0.17	0.90	0.24	0.92	-0.88	1.00																									
Bi	0.82	-0.10	0.13	-0.53	-0.58	0.95	0.43	-0.24	0.38	-0.37	0.00	1.00																								
Ca	0.09	0.45	0.41	0.28	-1.00	0.51	-0.47	0.12	-0.49	0.29	-0.71	0.53	1.00																							
Cd	-0.20	-0.66	-0.66	-0.42	0.95	-0.58	0.34	-0.39	0.35	-0.07	0.53	-0.51	-0.96	1.00																						
Co	0.19	0.89	0.94	0.70	-0.05	0.18	0.16	0.99	0.21	-0.56	0.37	-0.14	0.08	-0.36	1.00																					
Cr	-0.44	-0.88	-0.97	-0.53	0.54	-0.60	-0.12	-0.81	-0.13	0.49	-0.08	-0.36	-0.55	0.77	-0.84	1.00																				
Cu	0.62	0.33	0.55	0.04	0.40	0.35	0.80	0.59	0.83	-0.95	0.90	0.09	-0.41	0.14	0.71	-0.50	1.00																			
Fe	0.02	0.31	0.25	0.19	-0.99	0.45	-0.53	-0.04	-0.56	0.41	-0.80	0.53	0.99	-0.89	-0.09	-0.40	-0.54	1.00																		
K	-0.22	-0.94	-0.96	-0.68	0.63	-0.46	0.13	-0.81	0.12	0.27	0.13	-0.24	-0.66	0.85	-0.80	0.97	-0.31	-0.52	1.00																	
Li	0.78	-0.47	-0.18	-0.75	0.49	0.45	0.97	-0.24	0.96	-0.77	0.83	0.42	-0.53	0.46	-0.08	0.11	0.64	-0.55	0.36	1.00																
Mg	0.31	0.34	0.37	0.08	-0.98	0.69	-0.26	0.03	-0.29	0.13	-0.58	0.73	0.97	-0.93	0.03	-0.55	-0.30	0.96	-0.60	-0.31	1.00															
Mn	0.22	0.42	0.42	0.19	-1.00	0.62	-0.35	0.10	-0.37	0.19	-0.63	0.64	0.99	-0.96	0.08	-0.58	-0.33	0.97	-0.66	-0.41	0.99	1.00														
Mo	0.29	-0.28	-0.22	-0.45	-0.75	0.58	-0.15	-0.56	-0.21	0.30	-0.58	0.78	0.72	-0.53	-0.55	0.00	-0.55	0.79	-0.02	-0.06	0.81	0.75	1.00													
Na	0.42	-0.60	-0.41	-0.67	0.81	0.00	0.82	-0.30	0.82	-0.58	0.85	0.00	-0.85	0.81	-0.18	0.43	0.54	-0.83	0.63	0.89	-0.69	-0.77	-0.35	1.00												
Ni	0.07	-0.83	-0.74	-0.70	0.84	-0.30	0.52	-0.57	0.51	-0.17	0.56	-0.19	-0.87	0.94	-0.51	0.77	0.15	-0.79	0.90	0.67	-0.76	-0.83	-0.27	0.90	1.00											
Pb	0.05	0.62	0.65	0.57	0.44	-0.15	0.30	0.86	0.35	-0.58	0.63	-0.45	-0.40	0.13	0.88	-0.48	0.80	-0.55	-0.42	0.11	-0.46	-0.41	-0.87	0.19	-0.07	1.00										
Sb	0.02	0.53	0.47	0.39	-0.99	0.45	-0.52	0.21	-0.54	0.31	-0.72	0.45	0.99	-0.97	0.15	-0.59	-0.39	0.97	-0.71	-0.60	0.94	0.97	0.64	-0.89	-0.91	-0.33	1.00									
Se	-0.89	0.47	0.18	0.84	0.04	-0.77	-0.78	0.43	-0.74	0.57	-0.43	-0.83	0.02	-0.04	0.28	0.01	-0.31	0.01	-0.20	-0.83	-0.23	-0.11	-0.49	-0.55	-0.36	0.33	0.12	1.00								
Sn	-0.21	0.70	0.56	0.65	-0.88	0.20	-0.67	0.40	-0.67	0.38	-0.74	0.16	0.91	-0.92	0.31	-0.61	-0.37	0.87	-0.77	-0.78	0.79	0.86	0.39	-0.97	-0.97	-0.12	0.95	0.41	1.00							
Sr	0.91	-0.26	0.05	-0.64	0.30	0.64	0.99	-0.07	0.98	-0.88	0.82	0.56	-0.34	0.23	0.10	-0.14	0.73	-0.39	0.11	0.97	-0.12	-0.21	0.00	0.76	0.46	0.18	-0.41	-0.86	-0.60	1.00						
Ti	0.81	0.42	0.68	0.00	0.05	0.67	0.77	0.58	0.79	-0.96	0.73	0.42	-0.06	-0.19	0.70	-0.71	0.92	-0.20	-0.52	0.60	0.08	0.04	-0.23	0.33	-0.10	0.61	-0.06	-0.48	-0.12	0.76	1.00					
Tl	0.75	0.63	0.83	0.17	-0.49	0.85	0.42	0.58	0.42	-0.68	0.26	0.64	0.49	-0.68	0.67	-0.92	0.59	0.35	-0.81	0.23	0.58	0.56	0.17	-0.17	-0.56	0.33	0.48	-0.39	0.39	0.47	0.85	1.00				
U	0.79	0.17	0.38	-0.28	-0.70	0.98	0.34	0.01	0.30	-0.40	-0.04	0.96	0.67	-0.70	0.10	-0.59	0.16	0.62	-0.50	0.28	0.82	0.76	0.71	-0.18	-0.43	-0.29	0.61	-0.69	0.37	0.47	0.52	0.80	1.00			
V	0.67	0.66	0.86	0.26	-0.10	0.61	0.57	0.76	0.59	-0.86	0.58	0.33	0.10	-0.37	0.85	-0.86	0.86	-0.06	-0.72	0.35	0.18	0.18	-0.26	0.09	-0.34	0.69	0.12	-0.26	0.12	0.55	0.96	0.90	0.50	1.00		
W	0.58	0.40	0.60	0.12	0.38	0.32	0.74	0.66	0.78	-0.93	0.87	0.04	-0.38	0.11	0.76	-0.54	1.00	-0.53	-0.36	0.57	-0.30	-0.31	-0.59	0.48	0.09	0.84	-0.36	-0.24	-0.32	0.67	0.92	0.60	0.14	0.88	1.00	
Y	0.03	0.61	0.55	0.45	-0.97	0.45	-0.50	0.29	-0.52	0.26	-0.68	0.42	0.98	-0.98	0.24	-0.65	-0.32	0.94	-0.77	-0.60	0.92	0.96	0.57	-0.89	-0.94	-0.24	1.00	0.15	0.96	-0.40	0.00	0.53	0.60	0.20	-0.28	1.00
Zn	-0.36	-0.70	-0.75	-0.38	0.89	-0.69	0.15	-0.46	0.16	0.13	0.35	-0.58	-0.89	0.98	-0.47	0.86	-0.05	-0.80	0.89	0.31	-0.89	-0.91	-0.47	0.69	0.90	0.01	-0.90	0.08	-0.83	0.06	-0.38	-0.81	-0.77	-0.54	-0.08	-0.92

x Shading indicates a correlation coefficient greater than 0.75, or less than -0.75.

Ore - Run of Mine

	NP	Total Sulphur	Acid Leachable SO4-S	Sulphide-S	Total Carbon	Ag	Al	As	Ba	Be	B	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	W	Y	Zn
NP	***1.00***																																			
Total Sulphur	-0.37	***1.00***																																		
Acid Leachable SO4-S	0.28	0.12	***1.00***																																	
Sulphide-S	-0.40	***1.00***	0.03	***1.00***																																
Total Carbon	0.71	-0.57	0.34	-0.60	***1.00***																															
Ag	0.03	-0.17	-0.37	-0.14	-0.05	***1.00***																														
Al	0.46	***-0.79***	-0.04	***-0.79***	0.54	-0.41	***1.00***																													
As	-0.31	***0.98***	0.24	***0.96***	-0.56	0.03	-0.60	***1.00***																												
Ba	0.64	***-0.80***	-0.01	***-0.81***	0.71	-0.32	***0.95***	-0.55	***1.00***																											
Be	-0.08	-0.37	0.41	-0.40	0.27	0.26	-0.21	-0.23	-0.22	***1.00***																										
B	0.05	0.23	0.24	0.21	0.44	-0.15	0.09	0.06	0.14	-0.13	***1.00***																									
Bi	0.43	-0.50	-0.25	-0.48	0.28	***0.82***	-0.15	-0.23	-0.03	0.31	-0.12	***1.00***																								
Ca	-0.04	0.42	0.31	0.39	-0.02	-0.06	-0.53	0.39	-0.65	0.00	0.09	-0.13	***1.00***																							
Cd	0.37	-0.46	-0.39	-0.43	0.12	0.35	0.34	-0.26	0.42	-0.25	-0.21	0.50	-0.22	***1.00***																						
Co	-0.60	***0.85***	0.21	***0.84***	-0.63	-0.11	-0.59	***0.81***	-0.63	-0.02	0.00	-0.40	0.53	-0.43	***1.00***																						
Cr	-0.09	-0.38	-0.22	-0.36	-0.01	-0.34	0.14	-0.32	-0.01	0.05	-0.29	-0.37	-0.13	-0.25	-0.16	***1.00***																				
Cu	0.43	0.30	0.55	0.25	0.30	0.22	-0.34	0.30	-0.35	0.37	0.11	0.34	0.59	0.00	0.27	-0.41	***1.00***																			
Fe	-0.47	0.71	0.45	0.68	-0.39	0.30	***-0.85***	0.59	***-0.87***	0.43	-0.03	0.09	0.65	-0.44	0.69	-0.24	0.59	***1.00***																		
K	0.60	***-0.79***	0.08	***-0.81***	0.68	-0.27	***0.92***	-0.61	***0.94***	-0.04	0.09	0.09	-0.53	0.45	-0.64	-0.05	-0.17	***-0.76***	***1.00***																	
Li	0.68	-0.55	0.35	-0.59	0.67	-0.14	0.49	-0.41	0.51	0.16	0.18	0.26	0.02	0.40	-0.37	-0.25	0.39	-0.26	0.69	***1.00***																
Mg	0.36	0.36	0.54	0.31	0.29	0.00	-0.42	0.38	-0.44	0.16	0.26	-0.01	0.71	-0.18	0.31	-0.26	0.70	0.60	-0.30	0.25	***1.00***															
Mn	0.41	0.00	0.53	-0.05	0.46	-0.07	-0.27	0.13	-0.32	0.27	0.07	0.05	***0.77***	0.02	0.19	-0.17	***0.77***	0.45	-0.11	0.50	***0.82***	***1.00***														
Mo	-0.13	-0.35	-0.37	-0.32	-0.18	0.12	0.37	-0.27	0.29	0.02	-0.03	0.18	-0.15	0.31	-0.17	0.00	-0.07	-0.25	0.40	0.33	-0.11	-0.06	***1.00***													
Na	0.13	-0.49	-0.38	-0.46	0.06	-0.36	***0.76***	-0.43	0.73	-0.33	0.00	-0.29	-0.68	0.13	-0.52	0.33	-0.60	***-0.79***	0.53	-0.02	-0.59	-0.59	0.07	***1.00***												
Ni	-0.36	-0.28	-0.20	-0.26	-0.19	-0.04	-0.20	-0.04	-0.24	0.19	-0.15	-0.09	0.21	-0.04	0.46	0.05	-0.03	0.25	-0.17	0.06	-0.01	0.09	0.13	-0.32	***1.00***											
Pb	0.46	-0.42	-0.11	-0.41	0.33	0.16	0.09	-0.24	0.14	0.02	-0.23	0.35	-0.02	0.59	-0.21	-0.17	0.15	-0.14	0.24	0.38	0.13	0.26	0.19	-0.16	0.26	***1.00***										
Sb	-0.02	0.37	-0.14	0.38	-0.28	***0.83***	-0.67	0.42	-0.55	0.22	-0.11	0.73	0.16	0.15	0.22	-0.45	0.45	0.58	-0.49	-0.19	0.22	0.09	-0.09	-0.58	-0.01	0.11	***1.00***									
Se	0.17	-0.26	-0.35	-0.23	0.01	***0.81***	-0.43	0.07	-0.30	0.14	-0.25	***0.82***	0.05	0.47	-0.04	-0.37	0.28	0.27	-0.21	-0.01	0.06	0.08	-0.01	-0.47	0.18	0.40	***0.81***	***1.00***								
Sn	0.17	-0.19	0.05	-0.19	0.14	0.14	-0.18	0.02	-0.28	0.05	0.17	0.21	0.70	0.09	0.12	-0.35	0.58	0.39	-0.10	0.34	0.52	0.59	0.19	-0.55	0.10	0.11	0.16	0.17	***1.00***							
Sr	0.58	***-0.81***	0.04	***-0.82***	0.72	-0.38	***0.94***	-0.56	***0.94***	-0.14	0.15	-0.12	-0.60	0.29	-0.59	0.07	-0.28	***-0.77***	***0.89***	0.50	-0.33	-0.26	0.24	***0.75***	-0.23	0.08	-0.60	-0.40	-0.25	***1.00***						
Ti	0.23	-0.35	-0.03	-0.35	0.22	-0.28	0.45	-0.21	0.27	-0.02	0.06	-0.10	0.22	0.20	-0.08	0.12	0.25	-0.21	0.43	0.42	0.17	0.35	0.47	0.02	0.07	0.15	-0.37	-0.22	0.38	0.31	***1.00***					
Tl	0.42	-0.69	0.06	-0.70	0.58	0.16	0.37	-0.50	0.41	0.47	0.12	0.44	-0.20	0.37	-0.44	-0.22	0.31	-0.16	0.62	***0.78***	0.17	0.33	0.44	-0.11	0.04	0.44	-0.01	0.15	0.24	0.41	0.38	***1.00***				
U	0.21	-0.01	0.30	-0.03	0.21	-0.24	0.21	0.02	0.20	0.12	0.41	-0.17	0.15	-0.02	0.09	-0.23	0.25	0.02	0.31	0.54	0.49	0.41	0.37	-0.17	0.12	0.29	-0.24	-0.27	0.28	0.22	0.32	0.54	***1.00***			
V	0.18	-0.36	0.18	-0.38	0.38	-0.44	0.53	-0.28	0.35	0.06	0.08	-0.28	0.12	0.04	-0.13	0.22	0.14	-0.26	0.47	0.36	0.10	0.26	0.29	0.12	0.02	0.03	-0.54	-0.44	0.32	0.46	***0.89***	0.34	0.30	***1.00***		
W	0.59	-0.10	0.34	-0.14	0.31	0.16	-0.02	0.03	0.00	0.24	0.15	0.34	0.11	0.03	-0.13	-0.29	0.57	0.19	0.11	0.44	0.38	0.34	0.15	-0.23	-0.22	0.06	0.24	0.07	0.35	0.05	0.16	0.40	0.38	0.12	***1.00***	
Y	0.63	-0.55	0.06	-0.56	0.52	-0.18	0.32	-0.29	0.24	0.00	0.19	0.12	0.35	0.41	-0.22	-0.16	0.40	-0.14	0.45	0.73	0.45	0.65	0.41	-0.17	0.09	0.44	-0.22	-0.02	0.59	0.22	0.70	0.61	0.57	0.54	0.30	***1.00***
Zn	0.46	-0.55	-0.20	-0.53	0.33	0.20	0.07	-0.30	0.09	0.01	-0.15	0.42	0.13	0.57	-0.26	-0.13	0.21	-0.09	0.22	0.40	0.11	0.29	0.27	-0.28	0.17	0.72	0.14	0.42	0.37	0.06	0.20	0.39	0.19	0.16	0.13	0.45

x Shading indicates a correlation coefficient greater than 0.75, or less than -0.75.

'N/A' indicates that the solid phase concentration was less than the analytical detection limit.

APPENDIX VI

Reference Criteria for Evaluation of Geochemical Test Leachates

Reference Criteria for Evaluation of Geochemical Test Leachates
NICO Project, Fortune Minerals Ltd.

		Site Specific Water Quality Objectives
pH		6.5 - 9
Alkalinity	**mg/L as CaCO3**	-
Al	**mg/L**	0.41
Sb	**mg/L**	0.03
As	**mg/L**	0.05
Boron	**mg/L**	-
Barium	**mg/L**	-
Beryllium	**mg/L**	-
Calcium	**mg/L**	-
Cd	**mg/L**	0.00015
Cl	**mg/L**	353
Co	**mg/L**	0.01
Chromium	**mg/L**	-
Cu	**mg/L**	0.022
Fe	**mg/L**	1.5
Mercury	**mg/L**	-
Nitrite (NO2)	**mg/L as N**	-
Nitrate (NO3)	**mg/L as N**	133
Ammonia (NH4+)	**mg/L as N**	4.16
Potassium	**mg/L**	-
Magnesium	**mg/L**	-
Manganese	**mg/L**	-
Mo	**mg/L**	0.073
Sodium	**mg/L**	-
Nickel	**mg/L**	-
Phosphorous	**mg/L**	-
Pb	**mg/L**	0.0076
Se	**mg/L**	0.005
Silver	**mg/L**	-
SO4	**mg/L**	500
Strontium	**mg/L**	-
Tin	**mg/L**	-
Vanadium	**mg/L**	-
Thallium	**mg/L**	-
U	**mg/L**	0.027
Zn	**mg/L**	0.11

Notes

--- = no value provided

n/a = pH has no units

APPENDIX VII

Results of Laboratory Kinetic Testing of Mine Rock and Tailings Samples

May 2011
Report No. 08 1118 0043 (5000)

Golder Associates

Humidity Cell Results for Rock Sample 100859 (Feldspar Prophyry)

S-Total:	0.05 %
S^{2-}:	0.02 %
NP:	12.2 t CaCO3/1000 t
CaNP:	10.8 t CaCO3/1000 t
AP:	0.62 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Date		19-Apr-05	26-Apr-05	3-May-05	10-May-05	17-May-05	24-May-05	31-May-05	7-Jun-05	14-Jun-05	21-Jun-05	28-Jun-05	5-Jul-05	12-Jul-05	19-Jul-05	26-Jul-05	2-Aug-05	9-Aug-05	16-Aug-05	23-Aug-05	30-Aug-05	6-Sep-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		850	952	995	919	949	907	951	966	943	954	964	957	991	945	969	965	965	956	948	940	946
pH	Effluent (units)	7.62	7.09	7.49	7.33	7.55	7.50	7.62	7.60	7.48	7.37	7.50	7.71	7.22	7.09	7.21	7.07	7.45	7.22	7.36	7.23	7.36
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	< 2	<2	<2	<2	<2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	15	16	14	11	13	14	13	12	10	10	10	10	8	8	8	12	13	9	9	9	8
Conductivity	µmhos/cm	53	57	36	27	50	24	38	26	22	24	23	22	23	19	18	18	20	19	18	19	18
Sulphate (SO_4)	mg/L	< 5	3.3	1.1	0.6	0.6	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	< 0.5
Calcium (Ca)	mg/L	3.78	4.7	0.69	3.4	4.22	3.7	3.82	3.91	3.5	3.88	3.56	3.6	3.76	3.36	3.61	3.59	3.77	0.93	3.27	3.45	3.43
Iron (Fe)	mg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<0.02	<0.02	<0.02	2.83	<0.02	<0.02	<0.02	<0.02	0.06
Chloride (Cl)	mg/L	2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	0.13	0.07	0.04	---	---	0.07	---	---	---	---	0.06	---	---	---	---	0.08	---	---	---	---	0.06
Arsenic (As)	mg/L	0.011	0.073	0.073	---	---	0.046	---	---	---	---	0.015	---	---	---	---	0.02	---	---	---	---	0.012
Barium (Ba)	mg/L	0.003	0.003	0.003			0.001					0.006		---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L	< 0.01	0.02	< 0.01	---	---	< 0.02	---	---	---	---	< 0.01	---				< 0.01					< 0.01
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	0.1680	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	< 0.0008	< 0.0008	< 0.0008	---	---	< 0.0008	---	---	---	---	0.2190	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	4	3.1	1.85	---	---	1.0200	---	---	---	---	0.7000	---	---	---	---	0.67	---	---	---	---	0.54
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	0.248	0.551	0.417	---	---	0.28	---	---	---	---	0.156	---	---	---	---	0.116	---	---	---	---	0.086
Manganese (Mn)	mg/L	0.0046	0.0111	0.0061	---	---	0.0053	---	---	---	---	0.0195	---	---	---	---	0.0042	---	---	---	---	0.0045
Molydenum (Mo)	mg/L	0.036	0.0597	0.0182	---	---	0.006	---	---	---	---	< 0.0003	---	---	---	---	0.0023	---	---	---	---	0.0018
Sodium (Na)	mg/L	3.56	4.04	1.71	---	---	0.470	---	---	---	---	0.180	---	---	---	---	0.12	---	---	---	---	0.08
Nickel (Ni)	mg/L	0.001	0.002	< 0.001	---	---	< 0.001	---	---	---	---	0.007	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	0.000	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	0.0029	0.0131	0.0081	---	---	0.0029	---	---	---	---	0.0006	---	---	---	---	0.0016	---	---	---	---	0.0011
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	0.005	0.008	0.005	---	---	0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	0.0142	0.0229	0.0185	---	---	0.0128	---	---	---	---	0.0038	---	---	---	---	0.0079	---	---	---	---	0.0062
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	0.0006	0.0331	0.0336	---	---	0.0248	---	---	---	---	0.0004	---	---	---	---	0.0085	---	---	---	---	0.0055
Vanadium (V)	mg/L	< 0.0009	0.001	< 0.0009	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	0.009	0.0188	0.005	---	---	0.0008	---	---	---	---	< 0.0002	---	---	---	---	0.0004	---	---	---	---	0.0003
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	0.0002	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	< 0.001	0.001	< 0.001	---	---	0.0010	---	---	---	---	0.0140	---	---	---	---	< 0.001	---	---	---	---	0.002

Weeks	#	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Date		13-Sep-05	20-Sep-05	27-Sep-05	4-Oct-05	11-Oct-05	18-Oct-05	25-Oct-05	1-Nov-05	8-Nov-05	15-Nov-05	22-Nov-05	29-Nov-05	6-Dec-05	13-Dec-05	20-Dec-05	27-Dec-05	3-Jan-06	10-Jan-06	17-Jan-06	24-Jan-06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		980	956	930	962	944	906	959	956	936	868	939	926	949	991	898	929	952	944	914	934
pH	Effluent (units)	7.44	6.79	7.36	7.38	7.54	7.24	7.25	7.34	7.31	7.24	7.29	7.34	7.19	7.38	7.47	7.32	7.64	7.47	7.46	7.4
Acidity	as $CaCO_3$ (mg/L)	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	10	8	8	9	10	7	9	9	7	5	9	7	8	10	7	7	9	7	7	7
Conductivity	µmhos/cm	24	19	16	20	20	14	18	17	16	14	18	16	17	20	19	21	29	17	21	16
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	3.86	2.95	2.96	3.47	3.49	2.46	3.17	3.16	2.66	1.82	2.99	2.82	3.05	3.84	3.41	2.77	3.02	2.93	2.45	2.47
Iron (Fe)	mg/L	<0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	<2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	<2
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	---	---	---	---	0.08	---	---	---	---	0.09	---	---	---	---	0.13	---	---	---	---	0.07
Arsenic (As)	mg/L	---	---	---	---	0.013	---	---	---	---	0.012	---	---	---	---	0.008	---	---	---	---	0.008
Barium (Ba)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L					< 0.01					< 0.01					< 0.01					< 0.01
Bismuth (Bi)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Chromium (Cr)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	---	---	---	---	0.5200	---	---	---	---	0.4600	---	---	---	---	0.8300	---	---	---	---	0.3900
Lithium (Li)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	---	---	---	---	0.0650	---	---	---	---	0.04	---	---	---	---	0.08	---	---	---	---	0.04
Manganese (Mn)	mg/L	---	---	---	---	0.00	---	---	---	---	0.0023	---	---	---	---	0.0058	---	---	---	---	0.0047
Molydenum (Mo)	mg/L	---	---	---	---	0.00	---	---	---	---	0.0013	---	---	---	---	0.0009	---	---	---	---	0.0011
Sodium (Na)	mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	0.1100	---	---	---	---	< 0.05
Nickel (Ni)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	---	---	---	---	0.001	---	---	---	---	0.0008	---	---	---	---	< 0.0004	---	---	---	---	0.0007
Selenium (Se)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	---	---	---	---	0.0049	---	---	---	---	0.0033	---	---	---	---	0.0045	---	---	---	---	0.0031
Titanium (Ti)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	---	---	---	---	0.0048	---	---	---	---	0.0022	---	---	---	---	0.0022	---	---	---	---	0.0023
Vanadium (V)	mg/L	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	0.0004	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001

S-Total:	0.07 %
S^{2-}:	0.04 %
NP:	16.1 t CaCO3/1000 t
CaNP:	10 t CaCO3/1000 t
AP:	1.2 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Date		19-Apr-05	26-Apr-05	3-May-05	10-May-05	17-May-05	24-May-05	31-May-05	7-Jun-05	14-Jun-05	21-Jun-05	28-Jun-05	5-Jul-05	12-Jul-05	19-Jul-05	26-Jul-05	2-Aug-05	9-Aug-05	16-Aug-05	23-Aug-05	30-Aug-05	6-Sep-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		814	986	988	902	948	929	965	956	948	960	964	971	993	976	990	973	969	956	946	943	969
pH	Effluent (units)	8.8	7.53	8.11	7.72	7.62	7.73	7.67	7.57	7.74	7.75	7.65	7.78	7.34	7.20	7.45	7.23	7.46	7.38	7.45	7.49	7.43
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	< 2	<2	<2	<2	<2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	30	28	21	16	16	16	15	13	12	13	12	12	11	10	12	10	10	9	10	12	10
Conductivity	µmhos/cm	160	69	46	35	54	31	40	28	26	28	27	26	26	25	22	20	20	20	21	20	19
Sulphate (SO_4)	mg/L	< 5	2.5	1.5	1	1	0.8	0.7	0.6	0.6	0.5	0.6	0.6	0.6	0.8	0.8	0.6	0.5	<0.5	<0.5	<0.5	< 0.5
Calcium (Ca)	mg/L	2.47	3.4	4.17	3.16	3.67	3.62	3.55	3.55	3.47	4.06	3.52	3.62	3.93	4.17	4.05	3.61	3.5	3.36	3.3	3.44	3.43
Iron (Fe)	mg/L	0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<0.02	<0.02	<0.02	0.53	<0.02	<0.02	<0.02	<0.02	< 0.02
Chloride (Cl)	mg/L	2.5	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	3	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	0.33	0.15	0.06	---	---	0.11	---	---	---	---	0.10	---	---	---	---	0.11	---	---	---	---	0.08
Arsenic (As)	mg/L	0.043	0.065	0.036	---	---	0.017	---	---	---	---	0.011	---	---	---	---	0.011	---	---	---	---	0.007
Barium (Ba)	mg/L	0.001	< 0.001	< 0.001			< 0.001					< 0.001		---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L	0.03	0.06	0.02	---	---	< 0.02	---	---	---	---	< 0.01	---				< 0.01					< 0.01
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	0.0013	0.0011	< 0.0008	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	5.53	4.28	3.31	---	---	2.1400	---	---	---	---	1.2500	---	---	---	---	1.11	---	---	---	---	0.88
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	0.124	0.209	0.247	---	---	0.29	---	---	---	---	0.203	---	---	---	---	0.156	---	---	---	---	0.126
Manganese (Mn)	mg/L	0.0009	0.0017	0.0013	---	---	0.0012	---	---	---	---	0.0012	---	---	---	---	0.0011	---	---	---	---	0.0009
Molydenum (Mo)	mg/L	0.0016	0.0158	0.0176	---	---	0.018	---	---	---	---	0.019	---	---	---	---	0.014	---	---	---	---	0.0101
Sodium (Na)	mg/L	7.93	8.5	4.73	---	---	1.400	---	---	---	---	0.450	---	---	---	---	0.31	---	---	---	---	0.2
Nickel (Ni)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	0.0022	0.0071	0.0044	---	---	0.0017	---	---	---	---	0.0012	---	---	---	---	0.0012	---	---	---	---	0.0007
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	0.008	0.007	0.003	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	0.0073	0.0094	0.0106	---	---	0.0104	---	---	---	---	0.0094	---	---	---	---	0.0073	---	---	---	---	0.0061
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	< 0.0002	0.0003	0.0003	---	---	0.0003	---	---	---	---	0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Vanadium (V)	mg/L	0.003	0.0034	0.0025	---	---	0.0017	---	---	---	---	0.001	---	---	---	---	0.001	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	0.0049	0.0077	0.0022	---	---	0.0003	---	---	---	---	0.0002	---	---	---	---	0.0003	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001

Weeks	#	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Date		13-Sep-05	20-Sep-05	27-Sep-05	4-Oct-05	11-Oct-05	18-Oct-05	25-Oct-05	1-Nov-05	8-Nov-05	15-Nov-05	22-Nov-05	29-Nov-05	6-Dec-05	13-Dec-05	20-Dec-05	27-Dec-05	3-Jan-06	10-Jan-06	17-Jan-06	24-Jan-06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		966	941	940	971	962	907	969	952	936	871	950	944	951	992	906	929	963	967	910	927
pH	Effluent (units)	7.42	6.93	7.49	7.25	7.49	7.31	7.26	7.34	7.54	7.48	7.35	7.51	7.22	7.40	7.71	7.39	7.70	7.47	8.45	7.53
Acidity	as $CaCO_3$ (mg/L)	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	11	9	10	9	10	8	10	9	8	8	9	10	9	11	10	8	10	9	9	11
Conductivity	µmhos/cm	24	21	19	21	21	17	19	18	19	17	20	21	18	23	24	24	32	21	28	19
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	3.61	3.07	3.18	3.37	3.33	2.6	3.33	3.05	2.86	2.25	3.28	3.44	3.09	3.95	3.11	2.76	3.28	3.34	2.64	2.66
Iron (Fe)	mg/L	<0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	<2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	<2
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	0.2	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	---	---	---	---	0.08	---	---	---	---	0.12	---	---	---	---	0.06	---	---	---	---	0.09
Arsenic (As)	mg/L	---	---	---	---	0.009	---	---	---	---	0.011	---	---	---	---	0.008	---	---	---	---	0.006
Barium (Ba)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L					< 0.01					< 0.01					< 0.01					< 0.01
Bismuth (Bi)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Chromium (Cr)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	---	---	---	---	0.8300	---	---	---	---	0.9300	---	---	---	---	0.2100	---	---	---	---	0.7200
Lithium (Li)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	---	---	---	---	0.0980	---	---	---	---	0.07	---	---	---	---	0.05	---	---	---	---	0.07
Manganese (Mn)	mg/L	---	---	---	---	0.00	---	---	---	---	< 0.0007	---	---	---	---	0.0011	---	---	---	---	< 0.0007
Molydenum (Mo)	mg/L	---	---	---	---	0.01	---	---	---	---	0.0022	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Sodium (Na)	mg/L	---	---	---	---	0.14	---	---	---	---	0.1200	---	---	---	---	< 0.05	---	---	---	---	0.1000
Nickel (Ni)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	---	---	---	---	0.0008	---	---	---	---	0.0006	---	---	---	---	< 0.0004	---	---	---	---	0.0006
Selenium (Se)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	---	---	---	---	0.005	---	---	---	---	0.0051	---	---	---	---	0.0036	---	---	---	---	0.0037
Titanium (Ti)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Vanadium (V)	mg/L	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	0.0003	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001

Humidity Cell Results for Rock Sample 100863 (Ryolite)

S-Total:	0.03 %
S^{2-}:	<0.01 %
NP:	11.2 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Date		April 19/05	April 26/05	May 03/05	May 10/05	May 17/05	May 24/05	May 31/05	June 7/05	June 14/05	June 21/05	June 28/05	July 5/05	July 12/05	July 19/05	July 26/05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		828	966	985	897	978	994	987	991	982	987	996	986	994	997	972
pH	Effluent (units)	7.65	7.15	7.53	7.27	7.59	7.71	7.54	7.60	7.53	7.37	7.53	7.67	7.19	7.31	7.14
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2
Alkalinity	as $CaCO_3$ (mg/L)	15	15	12	9	13	14	12	10	13	9	10	9	8	11	13
Conductivity	µmhos/cm	47	46	33	23	49	27	35	24	24	23	24	21	20	20	18
Sulphate (SO_4)	mg/L	< 5	3.2	1.2	0.7	0.9	0.7	0.7	0.6	0.7	< 0.5	0.5	0.5	<0.5	0.6	<0.5
Calcium (Ca)	mg/L	4.18	4.85	3.35	3.14	4.25	4.32	3.83	3.78	4.05	4.05	3.81	3.55	3.54	4.03	3.73
Iron (Fe)	mg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<0.02	<0.02	<0.02
Chloride (Cl)	mg/L	< 2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Aluminum (Al)	mg/L	0.17	0.05	0.11	---	---	0.05	---	---	---	---	0.05	---	---	---	---
Arsenic (As)	mg/L	0.1	0.46	0.543			0.394					0.25		---	---	---
Barium (Ba)	mg/L	0.005	0.005	0.004	---	---	0.002	---	---	---	---	0.002	---	---	---	---
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Boron (B)	mg/L	0.01	0.02	< 0.01	---	---	< 0.02	---	---	---	---	< 0.01	---			
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Cobalt (Co)	mg/L	0.0023	0.0045	0.0035	---	---	0.0041	---	---	---	---	0.0042	---	---	---	---
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Copper (Cu)	mg/L	0.0037	< 0.0008	< 0.0008	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---
Potassium (K)	mg/L	4.86	3.44	2.17	---	---	1.0700	---	---	---	---	0.5600	---	---	---	---
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Magnesium (Mg)	mg/L	0.299	0.55	0.41	---	---	0.26	---	---	---	---	0.128	---	---	---	---
Manganese (Mn)	mg/L	0.0051	0.013	0.0085	---	---	0.0114	---	---	---	---	0.0145	---	---	---	---
Molydenum (Mo)	mg/L	0.0156	0.0305	0.0128	---	---	0.003	---	---	---	---	0.0017	---	---	---	---
Sodium (Na)	mg/L	1.12	1.23	0.63	---	---	0.210	---	---	---	---	0.100	---	---	---	---
Nickel (Ni)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Lead (Pb)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	0.000	---	---	---	---
Antimony (Sb)	mg/L	0.0107	0.0384	0.0258	---	---	0.0088	---	---	---	---	0.0051	---	---	---	---
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Tin (Sn)	mg/L	0.003	0.011	0.005	---	---	0.002	---	---	---	---	< 0.001	---	---	---	---
Strontium (Sr)	mg/L	0.0187	0.0265	0.021	---	---	0.0153	---	---	---	---	0.0097	---	---	---	---
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Uranium (U)	mg/L	0.0006	0.0142	0.0168	---	---	0.0125	---	---	---	---	0.0058	---	---	---	---
Vanadium (V)	mg/L	< 0.0009	< 0.0009	< 0.0009	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---
Tungsten (W)	mg/L	0.0014	0.0046	0.0014	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Zinc (Zn)	mg/L	< 0.001	0.003	0.001	---	---	0.0030	---	---	---	---	0.0040	---	---	---	---

Humidity Cell Results for Rock Sample 100863 (Ryolite)

S-Total:	0.03 %
S^{2-}:	<0.01 %
NP:	11.2 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Date		Aug 2/05	Aug 9/05	Aug 16/05	Aug 23/05	Aug 30/05	Sep 6/05	Sep 13/05	Sep 20/ 05	Sep 27/05	Oct 04/05	Oct 11/05	Oct18/05	Oct25/05	Nov1 01/05	Nov 08/05	Nov 15/05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		930	993	988	998	991	984	994	985	992	984	990	988	991	966	994	990
pH	Effluent (units)	7.20	7.27	7.25	7.23	7.38	7.34	7.33	6.84	7.20	7.21	7.42	7.21	6.47	7.22	7.25	7.28
Acidity	as $CaCO_3$ (mg/L)	< 2	<2	<2	<2	<2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	9.7	9	10	8	8	8	9	8	8	8	8	7	7	8	7	7
Conductivity	µmhos/cm	19	18	18	18	18	16	20	19	18	18	17	16	15	15	18	18
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	3.87	3.49	3.29	3.36	3.44	3.19	3.43	3.22	3.17	3.11	3.07	2.84	2.93	2.93	2.92	2.9
Iron (Fe)	mg/L	0.39	<0.02	<0.02	<0.02	<0.02	< 0.02	<0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	<2	---	---	---	---	< 2
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	0.07	---	---	---	---	0.05	---	---	---	---	0.04	---	---	---	---	0.05
Arsenic (As)	mg/L	0.214	---	---	---	---	0.139	---	---	---	---	0.138	---	---	---	---	0.121
Barium (Ba)	mg/L	0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L	< 0.01					< 0.01					< 0.01					< 0.01
Bismuth (Bi)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	0.0038	---	---	---	---	0.0036	---	---	---	---	0.0035	---	---	---	---	0.0037
Chromium (Cr)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	0.45	---	---	---	---	0.32	---	---	---	---	0.2500	---	---	---	---	0.2200
Lithium (Li)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	0.107	---	---	---	---	0.081	---	---	---	---	0.0550	---	---	---	---	0.05
Manganese (Mn)	mg/L	0.0146	---	---	---	---	0.0126	---	---	---	---	0.01	---	---	---	---	0.015
Molydenum (Mo)	mg/L	0.0013	---	---	---	---	0.001	---	---	---	---	0.00	---	---	---	---	0.0006
Sodium (Na)	mg/L	0.07	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Nickel (Ni)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	0.0045	---	---	---	---	0.0033	---	---	---	---	0.0028	---	---	---	---	0.0024
Selenium (Se)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	0.0073	---	---	---	---	0.0051	---	---	---	---	0.0037	---	---	---	---	0.0042
Titanium (Ti)	mg/L	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	0.0035	---	---	---	---	0.0019	---	---	---	---	0.0019	---	---	---	---	0.0016
Vanadium (V)	mg/L	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	0.0040	---	---	---	---	0.002	---	---	---	---	0.004	---	---	---	---	0.0040

Humidity Cell Results for Rock Sample 100863 (Ryolite)

S-Total:	0.03 %
S^{2-}:	<0.01 %
NP:	11.2 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Date		Nov22/05	Nov29/05	Dec06/05	Dec13/05	Dec 20/05	Dec 27/05	Jan 03/06	Jan 10/06	Jan 17/06	Jan 24/06	Jan 31/06	Feb 07/06	Feb 14/06	Feb 21/06	Feb 28/06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		988	993	985	992	988	993	996	985	978	980	901	862	810	797	982
pH	Effluent (units)	7.22	5.01	7.15	7.13	7.38	7.21	7.55	7.43	7.54	7.34	7.05	6.99	7.09	7.23	6.99
Acidity	as $CaCO_3$ (mg/L)	< 2	5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	8	< 2	8	8	8	8	9	8	8	7	6	6	8	6	7
Conductivity	µmhos/cm	18	19	16	16	21	22	30	16	22	17	15	13	16	18	19
Sulphate (SO_4)	mg/L	< 0.5	6.3	< 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
Calcium (Ca)	mg/L	3.34	0.11	3.14	3.18	0.12	2.96	3	2.86	3.01	2.69	2.32	2.09	2.02	2.32	3.06
Iron (Fe)	mg/L	< 0.02	0.3	< 0.02	< 0.02	0.40	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	<2	---	---	---	---	< 2
Ammonia	mg/L	---	---	---	---	0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	---	---	---	---	0.20	---	---	---	---	0.05	---	---	---	---	0.05
Arsenic (As)	mg/L	---	---	---	---	0.107	---	---	---	---	0.1	---	---	---	---	0.098
Barium (Ba)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	0.001
Beryllium (Be)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L					< 0.01					< 0.01	---	---	---	---	< 0.07
Bismuth (Bi)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	---	---	---	---	0.0042	---	---	---	---	0.0036	---	---	---	---	0.0034
Chromium (Cr)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	---	---	---	---	0.3200	---	---	---	---	0.18	---	---	---	---	0.2
Lithium (Li)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	---	---	0.22	---	---	---	---	0.041	---	---	---	---	0.046
Manganese (Mn)	mg/L	---	---	---	---	0.0165	---	---	---	---	0.0144	---	---	---	---	0.0173
Molydenum (Mo)	mg/L	---	---	---	---	0.0005	---	---	---	---	0.0004	---	---	---	---	0.0006
Sodium (Na)	mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.03
Nickel (Ni)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	0.02
Lead (Pb)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	---	---	---	---	0.0022	---	---	---	---	0.0022	---	---	---	---	0.0022
Selenium (Se)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	---	---	---	---	0.0012	---	---	---	---	0.0029	---	---	---	---	0.0029
Titanium (Ti)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	---	---	---	---	0.0011	---	---	---	---	0.0009	---	---	---	---	0.0008
Vanadium (V)	mg/L	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	---	---	---	---	0.0004	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	---	---	---	---	0.0030	---	---	---	---	0.001	---	---	---	---	0.001

Humidity Cell Results for Rock Sample 100863 (Ryolite)

S-Total:	0.03 %
S^{2-}:	<0.01 %
NP:	11.2 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Date		Mar 07/06	Mar 14/06	Mar 21/06	Mar 28/06.	Apr 04/06	Apr 11/06	Apr 18/06	Apr 25/06	May 02/06	May 09/06	May 16/06	May 23/06	May 30/06	Jun 6/06	Jun 13/06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		860	993	866	904	892	909	866	916	863	928	917	962	912	959	928
pH	Effluent (units)	7.06	7.18	7.16	6.98	6.98	6.92	7.04	7.10	7.10	6.86	6.84	7.14	7.12	7.17	7.20
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5	8	6	6	5	5	5	11	2	6	6	8	6	7	6
Conductivity	µmhos/cm	10	18	12	17	11	11	11	16	13	50	134	61	16	17	13
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	1.38	3.21	1.61	2.21	1.67	1.92	1.69	2.07	1.48	2.11	1.99	3.1	2.11	3.09	2.07
Iron (Fe)	mg/L	< 0.02	< 0.01	< 0.01	< 0.01	0.03	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003
Aluminum (Al)	mg/L	---	---	---	---	0.04	---	---	---	---	0.04	---	---	---	---	0.04
Arsenic (As)	mg/L	---	---	---	---	0.0785	---	---	---	---	0.0649	---	---	---	---	0.0615
Barium (Ba)	mg/L	---	---	---	---	0.0004	---	---	---	---	0.00076	---	---	---	---	0.00047
Beryllium (Be)	mg/L	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004
Boron (B)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Cadmium (Cd)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006
Cobalt (Co)	mg/L	---	---	---	---	0.0015	---	---	---	---	0.0022	---	---	---	---	0.0022
Chromium (Cr)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Copper (Cu)	mg/L	---	---	---	---	0.0004	---	---	---	---	0.0002	---	---	---	---	0.0002
Potassium (K)	mg/L	---	---	---	---	0.15	---	---	---	---	0.14	---	---	---	---	0.11
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	---	---	0.038	---	---	---	---	0.042	---	---	---	---	0.035
Manganese (Mn)	mg/L	---	---	---	---	0.00772	---	---	---	---	0.0119	---	---	---	---	0.0116
Molydenum (Mo)	mg/L	---	---	---	---	0.00041	---	---	---	---	0.00054	---	---	---	---	0.00027
Sodium (Na)	mg/L	---	---	---	---	0.03	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Nickel (Ni)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Phosphorous (P)	mg/L	---	---	---	---	0.05	---	---	---	---	< 0.01	---	---	---	---	0.01
Lead (Pb)	mg/L	---	---	---	---	0.00004	---	---	---	---	0.00034	---	---	---	---	< 0.00002
Antimony (Sb)	mg/L	---	---	---	---	0.0019	---	---	---	---	0.0019	---	---	---	---	0.0014
Selenium (Se)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Tin (Sn)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Strontium (Sr)	mg/L	---	---	---	---	0.0017	---	---	---	---	0.0019	---	---	---	---	0.0009
Titanium (Ti)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Thallium (Tl)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Uranium (U)	mg/L	---	---	---	---	0.00088	---	---	---	---	0.00081	---	---	---	---	0.00074
Vanadium (V)	mg/L	---	---	---	---	0.00008	---	---	---	---	0.00009	---	---	---	---	0.00006
Tungsten (W)	mg/L	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007
Yttrium (Y)	mg/L	---	---	---	---	< 0.000005	---	---	---	---	0.00001	---	---	---	---	< 0.000005
Zinc (Zn)	mg/L	---	---	---	---	0.0011	---	---	---	---	0.0056	---	---	---	---	0.001

Humidity Cell Results for Rock Sample 100863 (Ryolite)

S-Total:	0.03 %
S^{2-}:	<0.01 %
NP:	11.2 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Date		Jun 20, 06	Jun 27, 06	Jul 04, 06	Jul 11, 06	Jul 18, 06	Jul 25, 06	Aug 1, 06	Aug 8, 06	Aug 15, 06	Aug 22, 06	Aug 29, 06	Sep 05, 06	Sep 12, 06	Sep 19, 06	Sep 26, 06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		847	933	901	869	868	885	868	872	878	882	875	872	N/A	886	860
pH	Effluent (units)	7.21	7.16	6.80	7.00	6.75	6.81	6.89	6.84	7.11	6.97	6.97	6.96	7.22	7.16	6.91
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5	7	5	3	4	4	3	6	4	4	3	3	5	4	3
Conductivity	µmhos/cm	12	15	11	7	7	7	6	8	11	10	6	7	11	11	14
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	1	2.59	1.56	1.22	1.24	1.43	1.2	1.23	1.39	1.68	1.09	1.01	2.01	1.58	1.11
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.07	< 0.01	0.03	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003
Aluminum (Al)	mg/L	---	---	---	---	0.06	---	---	---	---	0.04	---	---	---	---	0.05
Arsenic (As)	mg/L	---	---	---	---	0.0453	---	---	---	---	0.0492	---	---	---	---	0.0426
Barium (Ba)	mg/L	---	---	---	---	0.00043	---	---	---	---	0.00043	---	---	---	---	0.00034
Beryllium (Be)	mg/L	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004
Boron (B)	mg/L	---	---	---	---	0.005	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Cadmium (Cd)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006
Cobalt (Co)	mg/L	---	---	---	---	0.00127	---	---	---	---	0.00212	---	---	---	---	0.000977
Chromium (Cr)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	0.0015
Copper (Cu)	mg/L	---	---	---	---	0.0002	---	---	---	---	0.0001	---	---	---	---	0.0003
Potassium (K)	mg/L	---	---	---	---	0.12	---	---	---	---	0.12	---	---	---	---	0.07
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	---	---	0.03	---	---	---	---	0.043	---	---	---	---	0.031
Manganese (Mn)	mg/L	---	---	---	---	0.00675	---	---	---	---	0.0108	---	---	---	---	0.00581
Molydenum (Mo)	mg/L	---	---	---	---	0.00019	---	---	---	---	0.0001	---	---	---	---	0.00011
Sodium (Na)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.04
Nickel (Ni)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Phosphorous (P)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	0.04
Lead (Pb)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	0.00043	---	---	---	---	0.00004
Antimony (Sb)	mg/L	---	---	---	---	0.0007	---	---	---	---	0.0016	---	---	---	---	0.0012
Selenium (Se)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Tin (Sn)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Strontium (Sr)	mg/L	---	---	---	---	0.001	---	---	---	---	0.0015	---	---	---	---	0.0009
Titanium (Ti)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Thallium (Tl)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Uranium (U)	mg/L	---	---	---	---	0.00045	---	---	---	---	0.00043	---	---	---	---	0.0003
Vanadium (V)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	0.00011	---	---	---	---	< 0.00006
Tungsten (W)	mg/L	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007
Yttrium (Y)	mg/L	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---	0.000009
Zinc (Zn)	mg/L	---	---	---	---	0.0009	---	---	---	---	0.0028	---	---	---	---	0.0008

Humidity Cell Results for Rock Sample 100863 (Ryolite)

S-Total:	0.03 %
S^{2-}:	<0.01 %
NP:	11.2 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	76	77	78	79	80	81	82	83	84	85	86	87	88	89
Date		Oct 03, 06	Oct 10, 06	Oct 17, 06	Oct 24, 06	Oct 31, 06	Nov 7, 06	Nov 14, 06	Nov 21, 06	Nov 28, 06	Dec 05, 06	Dec 12, 06	Dec 19, 06	Dec 27, 06	Jan 02, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		961	859	878	876	909	905	922	869	874	944	902	872	906	832
pH	Effluent (units)	7.19	7.44	7.21	6.93	6.85	6.76	6.94	6.86	8.06	7.15	6.90	6.91	6.98	7.15
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	5	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	7	10	7	4	5	5	5	4	4	5	4	4	3	4
Conductivity	µmhos/cm	22	16	18	8	11	16	14	10	7	12	10	10	8	10
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	2.72	3.18	2.88	1.24	< 0.05	1.75	1.95	1.44	1.43	2.12	1.65	1.3	1.62	1.71
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	0.32	< 0.01	< 0.01	< 0.01	0.03	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Aluminum (Al)	mg/L	---	---	---	---	0.15	---	---	---	---	0.04	---	---	---	---
Arsenic (As)	mg/L	---	---	---	---	0.0411	---	---	---	---	0.048	---	---	---	---
Barium (Ba)	mg/L	---	---	---	---	0.00032	---	---	---	---	0.00035	---	---	---	---
Beryllium (Be)	mg/L	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---
Boron (B)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.007	---	---	---	---
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Cadmium (Cd)	mg/L	---	---	---	---	0.00011	---	---	---	---	< 0.00006	---	---	---	---
Cobalt (Co)	mg/L	---	---	---	---	0.002	---	---	---	---	0.00196	---	---	---	---
Chromium (Cr)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Copper (Cu)	mg/L	---	---	---	---	0.0004	---	---	---	---	0.0002	---	---	---	---
Potassium (K)	mg/L	---	---	---	---	0.12	---	---	---	---	0.1	---	---	---	---
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	---	---	---	---	0.156	---	---	---	---	0.035	---	---	---	---
Manganese (Mn)	mg/L	---	---	---	---	0.0102	---	---	---	---	0.0125	---	---	---	---
Molydenum (Mo)	mg/L	---	---	---	---	0.00021	---	---	---	---	0.00028	---	---	---	---
Sodium (Na)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.04	---	---	---	---
Nickel (Ni)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---
Phosphorous (P)	mg/L	---	---	---	---	0.02	---	---	---	---	0.01	---	---	---	---
Lead (Pb)	mg/L	---	---	---	---	0.00004	---	---	---	---	< 0.00002	---	---	---	---
Antimony (Sb)	mg/L	---	---	---	---	0.0011	---	---	---	---	0.0013	---	---	---	---
Selenium (Se)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---
Tin (Sn)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Strontium (Sr)	mg/L	---	---	---	---	0.0003	---	---	---	---	0.0012	---	---	---	---
Titanium (Ti)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Thallium (Tl)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Uranium (U)	mg/L	---	---	---	---	0.00036	---	---	---	---	0.00086	---	---	---	---
Vanadium (V)	mg/L	---	---	---	---	0.00009	---	---	---	---	< 0.00006	---	---	---	---
Tungsten (W)	mg/L	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---
Yttrium (Y)	mg/L	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---
Zinc (Zn)	mg/L	---	---	---	---	0.0012	---	---	---	---	0.0006	---	---	---	---

Humidity Cell Results for Rock Sample 100863 (Ryolite)

S-Total:	0.03 %
S^{2-}:	<0.01 %
NP:	11.2 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
Date		Jan 9, 07	Jan 16, 07	Jan 23, 07	Jan 30, 07	Feb 6, 07	Feb 13, 07	Feb 20, 07	Feb 27, 07	Mar 06, 07	Mar 13,07	Mar 20, 07	Mar 27, 07	Apr 03, 07	Apr 10, 07	Apr 17, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		926	940	941	921	926	946	946	955	976	986	988	957	992	975	970
pH	Effluent (units)	7.03	7.14	7.19	7.14	7.14	7.09	7.23	7.28	7.22	7.19	7.15	7.34	6.99	7.33	8.59
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5	8	6	5	5	6	6	6	6	7	7	8	6	7	6
Conductivity	µmhos/cm	18	19	17	15	15	21	16	15	16	18	17	23	18	21	58
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	2.03	2.26	2.55	1.99	2.32	2.19	2.39	2.54	2.56	2.79	3	3.51	2.94	2.74	2.64
Iron (Fe)	mg/L	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Aluminum (Al)	mg/L	0.05	---	---	---	---	0.02	---	---	---	---	0.05	---	---	---	---
Arsenic (As)	mg/L	0.0496	---	---	---	---	0.0558	---	---	---	---	0.0544	---	---	---	---
Barium (Ba)	mg/L	0.00034	---	---	---	---	0.00038	---	---	---	---	0.00047	---	---	---	---
Beryllium (Be)	mg/L	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---
Boron (B)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Bismuth (Bi)	mg/L	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Cadmium (Cd)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---
Cobalt (Co)	mg/L	0.00196	---	---	---	---	0.00237	---	---	---	---	0.00374	---	---	---	---
Chromium (Cr)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Copper (Cu)	mg/L	< 0.0001	---	---	---	---	0.0001	---	---	---	---	< 0.0001	---	---	---	---
Potassium (K)	mg/L	0.1	---	---	---	---	0.12	---	---	---	---	0.1	---	---	---	---
Lithium (Li)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	0.043	---	---	---	---	0.049	---	---	---	---	0.055	---	---	---	---
Manganese (Mn)	mg/L	0.0134	---	---	---	---	0.0159	---	---	---	---	0.0241	---	---	---	---
Molydenum (Mo)	mg/L	0.0001	---	---	---	---	0.00019	---	---	---	---	0.00006	---	---	---	---
Sodium (Na)	mg/L	< 0.01	---	---	---	---	0.03	---	---	---	---	< 0.01	---	---	---	---
Nickel (Ni)	mg/L	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---
Phosphorous (P)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	< 0.00002	---	---	---	---	0.00013	---	---	---	---	< 0.00002	---	---	---	---
Antimony (Sb)	mg/L	0.001	---	---	---	---	0.0011	---	---	---	---	0.0011	---	---	---	---
Selenium (Se)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	0.0004	---	---	---	---
Strontium (Sr)	mg/L	0.0015	---	---	---	---	0.0016	---	---	---	---	0.002	---	---	---	---
Titanium (Ti)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Thallium (Tl)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Uranium (U)	mg/L	0.0008	---	---	---	---	0.00032	---	---	---	---	0.00085	---	---	---	---
Vanadium (V)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	0.00006	---	---	---	---
Tungsten (W)	mg/L	< 0.00007	---	---	---	---	0.0005	---	---	---	---	< 0.00007	---	---	---	---
Yttrium (Y)	mg/L	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---
Zinc (Zn)	mg/L	0.0007	---	---	---	---	0.0006	---	---	---	---	0.0009	---	---	---	---

Humidity Cell Results for Rock Sample 100863 (Ryolite)

S-Total:	0.03 %
S^{2-}:	<0.01 %
NP:	11.2 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
Date		Apr 24, 07	May 01, 07	May 08, 07	May 15, 07	May 22, 07	May 29, 07	Jun 5, 07	Jun 12, 07	Jun 19, 07	Jun 26, 07	Jul 03, 07	Jul 10, 07	Jul 17, 07	Jul 24, 07	Jul 31, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		970	978	982	989	967	963	995	954	991	937	779	805	997	870	855
pH	Effluent (units)	7.06	7.24	6.95	7.05	7.27	7.29	7.24	7.15	6.92	7.33	7.29	7.35	7.14	7.21	7.35
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	6	7	7	7	11	7	6	6	5	8	7	10	8	7	10
Conductivity	µmhos/cm	16	18	18	19	19	16	27	21	19	22	19	24	21	22	27
Sulphate (SO_4)	mg/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	3.8	< 0.5
Calcium (Ca)	mg/L	2.76	2.77	2.82	3.16	2.62	2.96	3.28	2.77	2.89	3.37	3.29	4.13	0.23	2.9	3.08
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Aluminum (Al)	mg/L	0.04	---	---	---	---	0.04	---	---	---	---	0.05	---	---	---	---
Arsenic (As)	mg/L	0.0617	---	---	---	---	0.0443	---	---	---	---	0.0589	---	---	---	---
Barium (Ba)	mg/L	0.00042	---	---	---	---	0.00047	---	---	---	---	0.00054	---	---	---	---
Beryllium (Be)	mg/L	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---
Boron (B)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Bismuth (Bi)	mg/L	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Cadmium (Cd)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---
Cobalt (Co)	mg/L	0.00373	---	---	---	---	0.00449	---	---	---	---	0.00424	---	---	---	---
Chromium (Cr)	mg/L	< 0.0003	---	---	---	---	0.0005	---	---	---	---	< 0.0003	---	---	---	---
Copper (Cu)	mg/L	0.0001	---	---	---	---	0.0002	---	---	---	---	0.0012	---	---	---	---
Potassium (K)	mg/L	0.1	---	---	---	---	0.09	---	---	---	---	0.09	---	---	---	---
Lithium (Li)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	0.045	---	---	---	---	0.046	---	---	---	---	0.036	---	---	---	---
Manganese (Mn)	mg/L	0.0226	---	---	---	---	0.0259	---	---	---	---	0.0266	---	---	---	---
Molydenum (Mo)	mg/L	0.00019	---	---	---	---	0.00014	---	---	---	---	0.00023	---	---	---	---
Sodium (Na)	mg/L	0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Nickel (Ni)	mg/L	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---
Phosphorous (P)	mg/L	0.02	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	< 0.00002	---	---	---	---	0.00004	---	---	---	---	0.0001	---	---	---	---
Antimony (Sb)	mg/L	0.0011	---	---	---	---	0.0012	---	---	---	---	0.0016	---	---	---	---
Selenium (Se)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	0.0005	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Strontium (Sr)	mg/L	0.0016	---	---	---	---	0.0015	---	---	---	---	0.0019	---	---	---	---
Titanium (Ti)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Thallium (Tl)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Uranium (U)	mg/L	0.00088	---	---	---	---	0.00033	---	---	---	---	0.00078	---	---	---	---
Vanadium (V)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---
Tungsten (W)	mg/L	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---
Yttrium (Y)	mg/L	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---
Zinc (Zn)	mg/L	0.0013	---	---	---	---	0.0018	---	---	---	---	0.0016	---	---	---	---

Humidity Cell Results for Rock Sample 100863 (Ryolite)

S-Total:	0.03 %
S^{2-}:	<0.01 %
NP:	11.2 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134
Date		Aug 7, 07	Aug 14, 07	Aug 21, 07	Aug 28, 07	Sep 4, 07	Sep 11, 07	Sep 18, 07	Sep 25, 07	Oct 02, 07	Oct 09, 07	Oct 16, 07	Oct 23, 07	Oct 30, 07	Nov 06, 07	Nov 13, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		915	993	987	980	987	978	987	981	987	989	983	990	992	976	999
pH	Effluent (units)	6.71	6.81	6.57	7.23	6.69	7.16	7.10	6.97	6.80	7.28	6.66	7.19	7.10	7.04	7.14
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5	5	6	7	7	6	6	6	4	6	6	6	8	6	7
Conductivity	µmhos/cm	14	15	17	16	71	22	18	14	14	41	15	15	17	13	15
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	2.69	2.43	2.58	2.71	2.37	2.37	2.58	2.23	2.51	2.35	2.34	2.45	3.18	2.23	2.87
Iron (Fe)	mg/L	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	0.11	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.00003	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Aluminum (Al)	mg/L	0.03	---	---	---	---	0.04	---	---	---	---	0.03	---	---	---	---
Arsenic (As)	mg/L	0.0485	---	---	---	---	0.0462	---	---	---	---	0.0434	---	---	---	---
Barium (Ba)	mg/L	0.00049	---	---	---	---	0.00043	---	---	---	---	0.00046	---	---	---	---
Beryllium (Be)	mg/L	< 0.00004	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Boron (B)	mg/L	0.008	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Bismuth (Bi)	mg/L	< 0.00002	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Cadmium (Cd)	mg/L	< 0.00006	---	---	---	---	0.000004	---	---	---	---	< 0.000003	---	---	---	---
Cobalt (Co)	mg/L	0.0042	---	---	---	---	0.00467	---	---	---	---	0.00471	---	---	---	---
Chromium (Cr)	mg/L	< 0.0003	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---
Copper (Cu)	mg/L	0.0001	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---
Potassium (K)	mg/L	0.09	---	---	---	---	0.07	---	---	---	---	0.07	---	---	---	---
Lithium (Li)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	0.05	---	---	---	---	0.043	---	---	---	---	0.043	---	---	---	---
Manganese (Mn)	mg/L	0.0244	---	---	---	---	0.0244	---	---	---	---	0.0238	---	---	---	---
Molydenum (Mo)	mg/L	0.00022	---	---	---	---	0.00021	---	---	---	---	0.00018	---	---	---	---
Sodium (Na)	mg/L	0.04	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Nickel (Ni)	mg/L	< 0.0007	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Phosphorous (P)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	0.00004	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Antimony (Sb)	mg/L	0.0011	---	---	---	---	0.00081	---	---	---	---	0.00076	---	---	---	---
Selenium (Se)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	< 0.0003	---	---	---	---	0.00023	---	---	---	---	0.00015	---	---	---	---
Strontium (Sr)	mg/L	0.0014	---	---	---	---	0.0012	---	---	---	---	0.0012	---	---	---	---
Titanium (Ti)	mg/L	< 0.0002	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Thallium (Tl)	mg/L	< 0.0001	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Uranium (U)	mg/L	0.00041	---	---	---	---	0.000588	---	---	---	---	0.000585	---	---	---	---
Vanadium (V)	mg/L	< 0.00006	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Tungsten (W)	mg/L	< 0.00007	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Yttrium (Y)	mg/L	< 0.000005	---	---	---	---	< 0.000001	---	---	---	---	0.000002	---	---	---	---
Zinc (Zn)	mg/L	0.0012	---	---	---	---	0.001	---	---	---	---	0.001	---	---	---	---

Humidity Cell Results for Rock Sample 100863 (Ryolite)

S-Total:	0.03 %
S^{2-}:	<0.01 %
NP:	11.2 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149
Date		Nov 20, 07	Nov 27, 07	Dec 04, 07	Dec 11, 07	Dec 18, 07	Dec 24, 07	Jan 02, 08	Jan 08, 08	Jan 15, 08	Jan 22, 08	Jan 29, 08	Feb 05, 08	Feb 12, 08	Feb 19, 08	Feb 26, 08
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		982	*	984	980	987	987	988	985	984	990	988	978	998	976	983
pH	Effluent (units)	7.25	7.24	7.09	6.74	6.93	6.85	6.72	7.03	6.74	6.89	7.17	7.12	6.89	7.25	6.90
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	8	8	6	7	6	6	5	6	5	5	6	8	5	10	4
Conductivity	µmhos/cm	17	17	13	15	13	13	15	14	16	14	14	15	14	13	13
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	2.8	2.8	2.27	2.48	2.55	2.05	2.28	2.39	2.35	2.19	2.27	2.25	2.21	2.19	2.18
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	0.06	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	0.2	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Aluminum (Al)	mg/L	0.06	---	---	---	---	0.02	---	---	---	---	0.02	---	---	---	---
Arsenic (As)	mg/L	0.064	---	---	---	---	0.0399	---	---	---	---	0.0447	---	---	---	---
Barium (Ba)	mg/L	0.00058	---	---	---	---	0.00042	---	---	---	---	0.00043	---	---	---	---
Beryllium (Be)	mg/L	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Boron (B)	mg/L	0.039	---	---	---	---	0.038	---	---	---	---	0.002	---	---	---	---
Bismuth (Bi)	mg/L	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Cadmium (Cd)	mg/L	0.000004	---	---	---	---	0.000004	---	---	---	---	0.000006	---	---	---	---
Cobalt (Co)	mg/L	0.00674	---	---	---	---	0.00482	---	---	---	---	0.00494	---	---	---	---
Chromium (Cr)	mg/L	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---
Copper (Cu)	mg/L	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---
Potassium (K)	mg/L	0.11	---	---	---	---	0.06	---	---	---	---	0.07	---	---	---	---
Lithium (Li)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	0.057	---	---	---	---	0.045	---	---	---	---	0.046	---	---	---	---
Manganese (Mn)	mg/L	0.0296	---	---	---	---	0.0237	---	---	---	---	0.0245	---	---	---	---
Molydenum (Mo)	mg/L	0.00021	---	---	---	---	0.00015	---	---	---	---	0.00017	---	---	---	---
Sodium (Na)	mg/L	0.01	---	---	---	---	0.02	---	---	---	---	0.03	---	---	---	---
Nickel (Ni)	mg/L	< 0.0001	---	---	---	---	0.0001	---	---	---	---	< 0.0001	---	---	---	---
Phosphorous (P)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	< 0.00002	---	---	---	---	0.00004	---	---	---	---	0.00003	---	---	---	---
Antimony (Sb)	mg/L	0.00088	---	---	---	---	0.00053	---	---	---	---	0.00051	---	---	---	---
Selenium (Se)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Strontium (Sr)	mg/L	0.0016	---	---	---	---	0.0011	---	---	---	---	0.0012	---	---	---	---
Titanium (Ti)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Thallium (Tl)	mg/L	< 0.000002	---	---	---	---	< 0.000002	---	---	---	---	< 0.000002	---	---	---	---
Uranium (U)	mg/L	0.000696	---	---	---	---	0.000542	---	---	---	---	0.000497	---	---	---	---
Vanadium (V)	mg/L	0.00009	---	---	---	---	< 0.00003	---	---	---	---	0.00018	---	---	---	---
Tungsten (W)	mg/L	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Yttrium (Y)	mg/L	0.000001	---	---	---	---	0.000002	---	---	---	---	0.000002	---	---	---	---
Zinc (Zn)	mg/L	0.002	---	---	---	---	0.003	---	---	---	---	0.001	---	---	---	---

Humidity Cell Results for Rock Sample 100872 (Rhyolite)

S-Total:	0.05 %
S^{2-}:	0.01 %
NP:	12.4 t CaCO3/1000 t
CaNP:	7.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11
Date		19-Apr-05	26-Apr-05	3-May-05	10-May-05	17-May-05	24-May-05	31-May-05	7-Jun-05	14-Jun-05	21-Jun-05	28-Jun-05	5-Jul-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		790	997	976	886	915	871	916	943	904	994	992	996
pH	Effluent (units)	7.68	7.13	7.49	7.28	7.47	7.54	7.55	7.59	7.57	7.68	8.48	7.75
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	15	16	15	11	12	10	14	11	10	12	12	11
Conductivity	µmhos/cm	42	44	32	25	46	21	32	26	21	26	32	24
Sulphate (SO_4)	mg/L	< 5	2.1	0.8	0.6	0.6	0.5	0.5	0.5	0.5	< 0.5	0.5	0.5
Calcium (Ca)	mg/L	3.64	4.28	1.69	3.17	3.75	2.97	3.43	3.63	3.26	4.39	3.81	3.77
Iron (Fe)	mg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	< 2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	2.0	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Aluminum (Al)	mg/L	0.14	0.05	< 0.01	---	---	0.08	---	---	---	---	0.06	---
Arsenic (As)	mg/L	0.038	0.1	0.113	---	---	0.063	---	---	---	---	0.043	---
Barium (Ba)	mg/L	0.005	0.005	0.004	---	---	0.002	---	---	---	---	0.002	---
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---
Boron (B)	mg/L	< 0.01	0.02	< 0.01			< 0.02					< 0.01	
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Cobalt (Co)	mg/L	< 0.0003	0.0006	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---
Copper (Cu)	mg/L	0.0012	0.002	< 0.0008	---	---	< 0.0008	---	---	---	---	< 0.0008	---
Potassium (K)	mg/L	4.57	2.46	1.7	---	---	1.0200	---	---	---	---	0.6800	---
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---
Magnesium (Mg)	mg/L	0.29	0.528	0.48	---	---	0.32	---	---	---	---	0.24	---
Manganese (Mn)	mg/L	0.0035	0.0068	0.003	---	---	0.0019	---	---	---	---	0.0023	---
Molydenum (Mo)	mg/L	0.0025	0.0276	0.0114	---	---	0.001	---	---	---	---	< 0.0003	---
Sodium (Na)	mg/L	1.73	2.07	1.09	---	---	0.360	---	---	---	---	0.150	---
Nickel (Ni)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---
Lead (Pb)	mg/L	< 0.0002	0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Antimony (Sb)	mg/L	0.0091	0.0742	0.0447	---	---	0.0170	---	---	---	---	0.0143	---
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---
Tin (Sn)	mg/L	0.006	0.008	0.004	---	---	0.001	---	---	---	---	< 0.001	---
Strontium (Sr)	mg/L	0.0218	0.0339	0.0293	---	---	0.0183	---	---	---	---	0.0187	---
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Uranium (U)	mg/L	0.0006	0.0126	0.0148	---	---	0.0073	---	---	---	---	0.0047	---
Vanadium (V)	mg/L	< 0.0009	< 0.0009	< 0.0009	---	---	< 0.0009	---	---	---	---	< 0.0009	---
Tungsten (W)	mg/L	0.0027	0.0069	0.0025	---	---	0.0004	---	---	---	---	0.0003	---
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Zinc (Zn)	mg/L	< 0.001	0.004	< 0.001	---	---	< 0.001	---	---	---	---	0.0020	---

Humidity Cell Results for Rock Sample 100872 (Rhyolite)

S-Total:	0.05 %
S^{2-}:	0.01 %
NP:	12.4 t CaCO3/1000 t
CaNP:	7.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	12	13	14	15	16	17	18	19	20	21	22	23
Date		12-Jul-05	19-Jul-05	26-Jul-05	2-Aug-05	9-Aug-05	16-Aug-05	23-Aug-05	30-Aug-05	6-Sep-05	13-Sep-05	20-Sep-05	27-Sep-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		996	980	996	1000	990	995	998	965	979	992	991	991
pH	Effluent (units)	7.31	7.26	7.24	7.18	7.31	7.30	7.26	7.44	7.35	7.33	6.80	7.34
Acidity	as $CaCO_3$ (mg/L)	<2	<2	<2	< 2	<2	<2	<2	<2	< 2	<2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	8	10	9	8.1	10	13	9	9	8	9	9	9
Conductivity	µmhos/cm	22	25	18	18	19	19	20	20	16	24	22	21
Sulphate (SO_4)	mg/L	<0.5	1.9	<0.5	< 0.5	<0.5	<0.5	<0.5	0.5	0.5	0.6	0.6	0.6
Calcium (Ca)	mg/L	3.52	4.26	3.58	3.64	3.39	0.58	3.39	3.75	3.1	3.47	3.42	3.41
Iron (Fe)	mg/L	<0.02	<0.02	<0.02	0.62	<0.02	0.11	<0.02	<0.02	< 0.02	0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	< 2	---	---	---	---	< 2	---	---	---
Ammonia	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---
Mercury (Hg)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Silver (Ag)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Aluminum (Al)	mg/L	---	---	---	0.08	---	---	---	---	0.06	---	---	---
Arsenic (As)	mg/L	---	---	---	0.036	---	---	---	---	0.017	---	---	---
Barium (Ba)	mg/L	---	---	---	0.002	---	---	---	---	0.001	---	---	---
Beryllium (Be)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---
Boron (B)	mg/L				< 0.01					< 0.01			
Bismuth (Bi)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Cadmium (Cd)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Cobalt (Co)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Chromium (Cr)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---
Copper (Cu)	mg/L	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---
Potassium (K)	mg/L	---	---	---	0.58	---	---	---	---	0.47	---	---	---
Lithium (Li)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---
Magnesium (Mg)	mg/L	---	---	---	0.208	---	---	---	---	0.139	---	---	---
Manganese (Mn)	mg/L	---	---	---	0.0031	---	---	---	---	0.0026	---	---	---
Molydenum (Mo)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Sodium (Na)	mg/L	---	---	---	0.11	---	---	---	---	0.06	---	---	---
Nickel (Ni)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---
Phosphorous (P)	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---
Lead (Pb)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---
Antimony (Sb)	mg/L	---	---	---	0.0107	---	---	---	---	0.0076	---	---	---
Selenium (Se)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---
Tin (Sn)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---
Strontium (Sr)	mg/L	---	---	---	0.0136	---	---	---	---	0.0097	---	---	---
Titanium (Ti)	mg/L	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---
Thallium (Tl)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---
Uranium (U)	mg/L	---	---	---	0.0033	---	---	---	---	0.002	---	---	---
Vanadium (V)	mg/L	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---
Tungsten (W)	mg/L	---	---	---	0.0003	---	---	---	---	< 0.0002	---	---	---
Yttrium (Y)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Zinc (Zn)	mg/L	---	---	---	0.0040	---	---	---	---	0.001	---	---	---

Humidity Cell Results for Rock Sample 100872 (Rhyolite)

S-Total:	0.05 %
S^{2-}:	0.01 %
NP:	12.4 t CaCO3/1000 t
CaNP:	7.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	24	25	26	27	28	29	30	31	32	33	34	35
Date		4-Oct-05	11-Oct-05	18-Oct-05	25-Oct-05	1-Nov-05	8-Nov-05	15-Nov-05	22-Nov-05	29-Nov-05	6-Dec-05	13-Dec-05	20-Dec-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		996	986	980	983	983	995	978	992	974	979	992	995
pH	Effluent (units)	7.38	7.37	7.24	7.27	7.27	7.32	7.33	7.32	7.37	7.10	7.28	7.43
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	9	8	8	8	8	8	13	9	8	8	8	8
Conductivity	µmhos/cm	19	20	21	17	17	20	20	20	18	17	18	22
Sulphate (SO_4)	mg/L	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	< 0.5	0.5
Calcium (Ca)	mg/L	3.28	3.27	2.91	3.05	3.05	3	2.97	3.08	3.21	3.16	3.3	1
Iron (Fe)	mg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	<2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	---	0.05	---	---	---	---	0.06	---	---	---	---	0.04
Arsenic (As)	mg/L	---	0.022	---	---	---	---	0.019	---	---	---	---	0.014
Barium (Ba)	mg/L	---	0.00	---	---	---	---	0.001	---	---	---	---	0.001
Beryllium (Be)	mg/L	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L		< 0.01					< 0.01					< 0.01
Bismuth (Bi)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Chromium (Cr)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	---	0.4000	---	---	---	---	0.3300	---	---	---	---	0.7100
Lithium (Li)	mg/L	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	---	0.1160	---	---	---	---	0.10	---	---	---	---	0.07
Manganese (Mn)	mg/L	---	0.00	---	---	---	---	0.004	---	---	---	---	0.005
Molydenum (Mo)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Sodium (Na)	mg/L	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	0.0600
Nickel (Ni)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	0.000
Antimony (Sb)	mg/L	---	0.007	---	---	---	---	0.0060	---	---	---	---	0.0053
Selenium (Se)	mg/L	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	---	0.0087	---	---	---	---	0.0087	---	---	---	---	0.0018
Titanium (Ti)	mg/L	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	---	0.0022	---	---	---	---	0.0018	---	---	---	---	0.0014
Vanadium (V)	mg/L	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	---	0.0002	---	---	---	---	0.0002	---	---	---	---	0.0002
Yttrium (Y)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	0.0030

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12
Date		April 19/05	April 26/05	May 03/05	May 10/05	May 17/05	May 24/05	May 31/05	June 7/05	June 14/05	June 21/05	June 28/05	July 5/05	July 12/05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		837	976	990	983	985	984	992	993	988	988	993	992	993
pH	Effluent (units)	5.66	5.59	5.76	5.83	5.89	5.86	6.16	5.63	5.65	5.53	5.62	5.45	5.26
Acidity	as $CaCO_3$ (mg/L)	5	5	2	< 2	2	2	<2	2	< 2	3	< 2	2	3
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	8	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<0.3
Conductivity	µmhos/cm	75	81	38	27	29	21	6	21	21	19	20	20	18
Sulphate (SO_4)	mg/L	23	29	13	9.2	8.6	7.5	7.4	6.8	7.1	6.8	7.1	7.4	6.4
Calcium (Ca)	mg/L	2.52	3.9	4.3	1.13	1	0.93	0.9	0.84	0.9	0.84	0.77	0.82	0.69
Iron (Fe)	mg/L	0.33	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.03	< 0.02	0.02
Chloride (Cl)	mg/L	< 2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Aluminum (Al)	mg/L	0.04	< 0.01	0.04	---	---	< 0.01	---	---	---	---	0.01	---	---
Arsenic (As)	mg/L	0.008	0.02	0.017			0.016					0.014		---
Barium (Ba)	mg/L	0.015	0.01	0.006	---	---	0.005	---	---	---	---	0.006	---	---
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---
Boron (B)	mg/L	< 0.01	0.02	< 0.01	---	---	< 0.02	---	---	---	---	< 0.01	---	
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Cobalt (Co)	mg/L	0.348	0.249	0.114	---	---	0.1040	---	---	---	---	0.1690	---	---
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Copper (Cu)	mg/L	0.239	0.076	0.0336	---	---	0.0556	---	---	---	---	0.2150	---	---
Potassium (K)	mg/L	8.76	6.07	3.63	---	---	1.8500	---	---	---	---	1.1800	---	---
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---
Magnesium (Mg)	mg/L	1.64	2.47	1.1	---	---	0.63	---	---	---	---	0.506	---	---
Manganese (Mn)	mg/L	0.0173	0.0402	0.0193	---	---	0.0144	---	---	---	---	0.0193	---	---
Molydenum (Mo)	mg/L	< 0.0003	0.0004	0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Sodium (Na)	mg/L	1.93	1.76	0.7	---	---	0.150	---	---	---	---	0.050	---	---
Nickel (Ni)	mg/L	0.009	0.012	0.005	---	---	0.005	---	---	---	---	0.007	---	---
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---
Lead (Pb)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	0.000	---	---
Antimony (Sb)	mg/L	0.0009	0.0006	0.0007	---	---	0.0004	---	---	---	---	0.0005	---	---
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---
Tin (Sn)	mg/L	0.006	0.006	0.004	---	---	0.001	---	---	---	---	< 0.001	---	---
Strontium (Sr)	mg/L	0.01	0.0131	0.0059	---	---	0.0034	---	---	---	---	0.0038	---	---
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Uranium (U)	mg/L	0.0031	0.0007	0.0003	---	---	0.0002	---	---	---	---	0.0004	---	---
Vanadium (V)	mg/L	< 0.0009	< 0.0009	< 0.0009	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---
Tungsten (W)	mg/L	< 0.0002	0.0008	0.0003	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Yttrium (Y)	mg/L	0.0005	0.0003	< 0.0001	---	---	< 0.0001	---	---	---	---	0.0002	---	---
Zinc (Zn)	mg/L	0.008	0.01	0.01	---	---	0.0090	---	---	---	---	0.0150	---	---

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Date		July 19/05	July 26/05	Aug 2/05	Aug 9/05	Aug 16/05	Aug 23/05	Aug 30/05	Sep 6/05	Sep 13/05	Sep 20/ 05	Sep 27/05	Oct 04/05	Oct 11/05	Oct18/05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		976	994	987	986	992	992	985	962	984	985	988	984	989	985
pH	Effluent (units)	5.14	5.29	5.13	5.50	5.18	4.95	5.37	5.12	5.18	4.90	4.95	5.08	4.93	5.01
Acidity	as $CaCO_3$ (mg/L)	4	6	4	3	<2	5	15	3	4	4	4	4	4	4
Alkalinity	as $CaCO_3$ (mg/L)	<2	<0.3	0.6	<2	<2	<2	<2	< 2	<2	< 2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	23	18	17	16	18	20	14	16	21	19	18	16	18	15
Sulphate (SO_4)	mg/L	9.1	7.7	6.7	7.9	6.8	7.0	6.6	5.8	6.5	5.4	6.7	6.2	6.2	5.6
Calcium (Ca)	mg/L	1.02	0.77	0.69	0.63	3.4	0.58	0.41	0.38	0.41	0.32	0.34	0.28	0.23	0.17
Iron (Fe)	mg/L	0.06	0.06	0.22	0.08	<0.02	0.12	0.13	0.16	0.21	0.19	0.25	0.24	0.26	0.25
Chloride (Cl)	mg/L	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---
Nitrite (NO_2)	as N mg/L	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---
Nitrate (NO_3)	as N mg/L	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	< 2	---	---	---	---	< 2	---	---	---	---	<2	---
Ammonia	mg/L	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---
Mercury (Hg)	mg/L	---	---	0.0008	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Silver (Ag)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Aluminum (Al)	mg/L	---	---	0.04	---	---	---	---	0.08	---	---	---	---	0.14	---
Arsenic (As)	mg/L	---	---	0.01	---	---	---	---	0.008	---	---	---	---	0.009	---
Barium (Ba)	mg/L	---	---	0.007	---	---	---	---	0.007	---	---	---	---	0.01	---
Beryllium (Be)	mg/L	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Boron (B)	mg/L			< 0.01					< 0.01					< 0.01	
Bismuth (Bi)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Cadmium (Cd)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Cobalt (Co)	mg/L	---	---	0.198	---	---	---	---	0.144	---	---	---	---	0.122	---
Chromium (Cr)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Copper (Cu)	mg/L	---	---	0.474	---	---	---	---	0.627	---	---	---	---	0.67	---
Potassium (K)	mg/L	---	---	0.97	---	---	---	---	0.62	---	---	---	---	0.5000	---
Lithium (Li)	mg/L	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Magnesium (Mg)	mg/L	---	---	0.46	---	---	---	---	0.301	---	---	---	---	0.2530	---
Manganese (Mn)	mg/L	---	---	0.0197	---	---	---	---	0.0121	---	---	---	---	0.01	---
Molydenum (Mo)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Sodium (Na)	mg/L	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---
Nickel (Ni)	mg/L	---	---	0.008	---	---	---	---	0.006	---	---	---	---	0.005	---
Phosphorous (P)	mg/L	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---
Lead (Pb)	mg/L	---	---	0.000	---	---	---	---	0.0005	---	---	---	---	0.0015	---
Antimony (Sb)	mg/L	---	---	0.0006	---	---	---	---	< 0.0004	---	---	---	---	< 0.0004	---
Selenium (Se)	mg/L	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Tin (Sn)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Strontium (Sr)	mg/L	---	---	0.0039	---	---	---	---	0.0028	---	---	---	---	0.0014	---
Titanium (Ti)	mg/L	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---
Thallium (Tl)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Uranium (U)	mg/L	---	---	0.001	---	---	---	---	0.0013	---	---	---	---	0.0022	---
Vanadium (V)	mg/L	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---
Tungsten (W)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Yttrium (Y)	mg/L	---	---	0.0005	---	---	---	---	0.001	---	---	---	---	0.0019	---
Zinc (Zn)	mg/L	---	---	0.0160	---	---	---	---	0.01	---	---	---	---	0.008	---

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Date		Oct25/05	Nov1 01/05	Nov 08/05	Nov 15/05	Nov22/05	Nov29/05	Dec06/05	Dec13/05	Dec 20/05	Dec 27/05	Jan 03/06	Jan 10/06	Jan 17/06	Jan 24/06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		987	959	985	990	993	993	973	993	992	986	991	985	993	990
pH	Effluent (units)	4.85	4.91	4.87	4.81	5.01	6.68	5.61	4.80	4.87	4.83	4.91	4.74	4.89	4.83
Acidity	as $CaCO_3$ (mg/L)	6	5	5	8	5	3	< 2	5	4	5	5	6	4	5
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	17	19	21	21	19	7	11	18	24	30	30	20	24	20
Sulphate (SO_4)	mg/L	6.6	6.7	6.4	8.8	6.3	1.6	5.0	7.7	6.3	7.1	8.7	7.9	9.1	6.6
Calcium (Ca)	mg/L	0.21	0.18	0.18	0.15	0.11	0.05	0.13	0.1	3.14	0.11	0.07	0.07	0.09	0.08
Iron (Fe)	mg/L	0.3	0.33	0.36	0.34	0.3	< 0.02	0.27	0.33	< 0.02	0.46	0.42	0.47	0.41	0.43
Chloride (Cl)	mg/L	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	<2
Ammonia	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	---	---	---	0.18	---	---	---	---	0.06	---	---	---	---	0.21
Arsenic (As)	mg/L	---	---	---	0.011	---	---	---	---	0.009	---	---	---	---	0.01
Barium (Ba)	mg/L	---	---	---	0.009	---	---	---	---	0.007	---	---	---	---	0.008
Beryllium (Be)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L				< 0.01					< 0.01					< 0.01
Bismuth (Bi)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	---	---	---	0.103	---	---	---	---	0.081	---	---	---	---	0.071
Chromium (Cr)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	---	---	---	0.608	---	---	---	---	0.521	---	---	---	---	0.465
Potassium (K)	mg/L	---	---	---	0.3800	---	---	---	---	0.3500	---	---	---	---	0.29
Lithium (Li)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	---	---	---	0.25	---	---	---	---	0.10	---	---	---	---	0.221
Manganese (Mn)	mg/L	---	---	---	0.008	---	---	---	---	0.0059	---	---	---	---	0.0054
Molydenum (Mo)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Sodium (Na)	mg/L	---	---	---	< 0.05	---	---	---	---	0.0600	---	---	---	---	< 0.05
Nickel (Ni)	mg/L	---	---	---	0.003	---	---	---	---	0.003	---	---	---	---	0.003
Phosphorous (P)	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	---	---	---	0.000	---	---	---	---	0.001	---	---	---	---	0.0007
Antimony (Sb)	mg/L	---	---	---	< 0.0004	---	---	---	---	< 0.0004	---	---	---	---	< 0.0004
Selenium (Se)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	---	---	---	0.0022	---	---	---	---	0.0068	---	---	---	---	0.0009
Titanium (Ti)	mg/L	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	---	---	---	0.002	---	---	---	---	0.0019	---	---	---	---	0.0018
Vanadium (V)	mg/L	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	---	---	---	0.0024	---	---	---	---	0.0022	---	---	---	---	0.0023
Zinc (Zn)	mg/L	---	---	---	0.0060	---	---	---	---	0.0060	---	---	---	---	0.005

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	41	42	43	44	45	46	47	48	49	50	51	52	53
Date		Jan 31/06	Feb 07/06	Feb 14/06	Feb 21/06	Feb 28/06	Mar 07/06	Mar 14/06	Mar 21/06	Mar 28/06.	Apr 04/06	Apr 11/06	Apr 18/06	Apr 25/06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		933	951	956	947	960	870	973	886	945	918	928	881	947
pH	Effluent (units)	4.89	4.76	4.97	4.79	4.79	4.85	4.74	4.83	4.92	4.85	4.91	4.85	4.95
Acidity	as $CaCO_3$ (mg/L)	4	6	< 2	5	4	5	5	5	5	< 2	5	5	3
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	1
Conductivity	µmhos/cm	20	20	18	22	19	17	20	22	21	19	15	17	18
Sulphate (SO_4)	mg/L	8.4	6.0	6.2	6.8	5.7	6.1	6.5	6.4	5.3	5.1	4.4	5.9	9.0
Calcium (Ca)	mg/L	0.09	< 0.05	0.11	0.06	0.09	0.06	0.07	0.06	0.08	0.06	0.03	0.04	0.05
Iron (Fe)	mg/L	0.39	0.43	0.47	0.46	0.44	0.3	0.45	0.35	0.4	0.4	0.3	0.37	0.3
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Silver (Ag)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.00003	---	---	---
Aluminum (Al)	mg/L	---	---	---	---	0.21	---	---	---	---	0.15	---	---	---
Arsenic (As)	mg/L	---	---	---	---	0.008	---	---	---	---	0.0088	---	---	---
Barium (Ba)	mg/L	---	---	---	---	0.007	---	---	---	---	0.00574	---	---	---
Beryllium (Be)	mg/L	---	---	---	---	< 0.005	---	---	---	---	0.00029	---	---	---
Boron (B)	mg/L	---	---	---	---	< 0.07	---	---	---	---	< 0.003	---	---	---
Bismuth (Bi)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.00002	---	---	---
Cadmium (Cd)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.00006	---	---	---
Cobalt (Co)	mg/L	---	---	---	---	0.0625	---	---	---	---	0.0608	---	---	---
Chromium (Cr)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.0003	---	---	---
Copper (Cu)	mg/L	---	---	---	---	0.448	---	---	---	---	0.415	---	---	---
Potassium (K)	mg/L	---	---	---	---	0.31	---	---	---	---	0.23	---	---	---
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---
Magnesium (Mg)	mg/L	---	---	---	---	0.223	---	---	---	---	0.219	---	---	---
Manganese (Mn)	mg/L	---	---	---	---	0.0054	---	---	---	---	0.00563	---	---	---
Molydenum (Mo)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.00005	---	---	---
Sodium (Na)	mg/L	---	---	---	---	< 0.03	---	---	---	---	0.03	---	---	---
Nickel (Ni)	mg/L	---	---	---	---	0.002	---	---	---	---	0.0022	---	---	---
Phosphorous (P)	mg/L	---	---	---	---	< 0.01	---	---	---	---	0.04	---	---	---
Lead (Pb)	mg/L	---	---	---	---	0.0004	---	---	---	---	0.00011	---	---	---
Antimony (Sb)	mg/L	---	---	---	---	< 0.0004	---	---	---	---	0.0004	---	---	---
Selenium (Se)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.003	---	---	---
Tin (Sn)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.0003	---	---	---
Strontium (Sr)	mg/L	---	---	---	---	0.0008	---	---	---	---	0.0006	---	---	---
Titanium (Ti)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.0002	---	---	---
Thallium (Tl)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0001	---	---	---
Uranium (U)	mg/L	---	---	---	---	0.0018	---	---	---	---	0.0017	---	---	---
Vanadium (V)	mg/L	---	---	---	---	< 0.0009	---	---	---	---	< 0.00006	---	---	---
Tungsten (W)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.00007	---	---	---
Yttrium (Y)	mg/L	---	---	---	---	0.0021	---	---	---	---	0.00215	---	---	---
Zinc (Zn)	mg/L	---	---	---	---	0.006	---	---	---	---	0.0046	---	---	---

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	54	55	56	57	58	59	60	61	62	63	64	65	66	67
Date		May 02/06	May 09/06	May 16/06	May 23/06	May 30/06	Jun 6/06	Jun 13/06	Jun 20, 06	Jun 27, 06	Jul 04, 06	Jul 11, 06	Jul 18, 06	Jul 25, 06	Aug 1, 06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		886	950	938	958	938	964	947	887	944	905	912	912	912	917
pH	Effluent (units)	4.87	4.80	4.96	4.76	4.95	5.08	4.90	5.07	4.88	4.77	4.87	4.83	4.79	4.75
Acidity	as $CaCO_3$ (mg/L)	4	5	4	5	4	4	4	4	5	4	3	4	4	4
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	26	51	139	55	16	12	15	13	15	16	14	15	13	14
Sulphate (SO_4)	mg/L	5.0	7.2	4.9	4.5	5.0	5.8	8.0	7.0	5.1	6.9	5.3	4.6	7.5	7.8
Calcium (Ca)	mg/L	0.04	< 0.05	0.89	< 0.03	< 0.03	< 0.03	< 0.05	< 0.03	< 0.03	< 0.03	0.06	< 0.05	< 0.03	< 0.03
Iron (Fe)	mg/L	0.3	0.29	0.26	0.28	0.27	0.33	0.29	0.24	0.35	0.28	0.31	0.31	0.31	0.24
Chloride (Cl)	mg/L	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---
Nitrite (NO_2)	as N mg/L	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---
Nitrate (NO_3)	as N mg/L	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---
Ammonia	mg/L	---	< 0.1	---	---	---	---	0.1	---	---	---	---	< 0.1	---	---
Mercury (Hg)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Silver (Ag)	mg/L	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---
Aluminum (Al)	mg/L	---	0.14	---	---	---	---	0.14	---	---	---	---	0.16	---	---
Arsenic (As)	mg/L	---	0.0085	---	---	---	---	0.0074	---	---	---	---	0.0059	---	---
Barium (Ba)	mg/L	---	0.00513	---	---	---	---	0.00434	---	---	---	---	0.00383	---	---
Beryllium (Be)	mg/L	---	0.00035	---	---	---	---	0.00018	---	---	---	---	0.00018	---	---
Boron (B)	mg/L	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	0.005	---	---
Bismuth (Bi)	mg/L	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---
Cadmium (Cd)	mg/L	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---
Cobalt (Co)	mg/L	---	0.0579	---	---	---	---	0.0412	---	---	---	---	0.0428	---	---
Chromium (Cr)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Copper (Cu)	mg/L	---	0.344	---	---	---	---	0.284	---	---	---	---	0.298	---	---
Potassium (K)	mg/L	---	0.2	---	---	---	---	0.14	---	---	---	---	0.16	---	---
Lithium (Li)	mg/L	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---
Magnesium (Mg)	mg/L	---	0.175	---	---	---	---	0.166	---	---	---	---	0.173	---	---
Manganese (Mn)	mg/L	---	0.00444	---	---	---	---	0.00347	---	---	---	---	0.00412	---	---
Molydenum (Mo)	mg/L	---	0.00015	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---
Sodium (Na)	mg/L	---	0.06	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---
Nickel (Ni)	mg/L	---	0.0019	---	---	---	---	0.0015	---	---	---	---	0.0011	---	---
Phosphorous (P)	mg/L	---	< 0.01	---	---	---	---	0.02	---	---	---	---	0.02	---	---
Lead (Pb)	mg/L	---	0.00009	---	---	---	---	0.00007	---	---	---	---	< 0.00002	---	---
Antimony (Sb)	mg/L	---	0.0003	---	---	---	---	0.0003	---	---	---	---	0.0003	---	---
Selenium (Se)	mg/L	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---
Tin (Sn)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Strontium (Sr)	mg/L	---	0.0004	---	---	---	---	< 0.0006	---	---	---	---	0.0003	---	---
Titanium (Ti)	mg/L	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Thallium (Tl)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Uranium (U)	mg/L	---	0.00141	---	---	---	---	0.00128	---	---	---	---	0.0014	---	---
Vanadium (V)	mg/L	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---
Tungsten (W)	mg/L	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---
Yttrium (Y)	mg/L	---	0.0018	---	---	---	---	0.00152	---	---	---	---	0.00186	---	---
Zinc (Zn)	mg/L	---	0.0049	---	---	---	---	0.0031	---	---	---	---	0.003	---	---

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	68	69	70	71	72	73	74	75	76	77	78	79	80	81
Date		Aug 8, 06	Aug 15, 06	Aug 22, 06	Aug 29, 06	Sep 05, 06	Sep 12, 06	Sep 19, 06	Sep 26, 06	Oct 03, 06	Oct 10, 06	Oct 17, 06	Oct 24, 06	Oct 31, 06	Nov 7, 06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		892	911	896	887	881	N/A	916	887	964	876	895	890	927	921
pH	Effluent (units)	5.10	5.47	4.72	4.98	4.91	4.82	4.79	4.79	4.79	4.88	5.02	4.84	4.75	4.96
Acidity	as $CaCO_3$ (mg/L)	3	5	4	5	3	5	5	5	4	4	4	4	4	4
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	13	15	15	13	14	15	16	21	21	15	12	15	15	18
Sulphate (SO_4)	mg/L	4.6	6.0	4.2	3.9	3.9	7.3	6.3	4.6	4.7	4.0	5.3	3.4	3.2	4.0
Calcium (Ca)	mg/L	< 0.03	0.03	< 0.05	< 0.03	< 0.03	0.04	< 0.03	< 0.05	< 0.03	0.03	0.04	< 0.03	0.87	0.04
Iron (Fe)	mg/L	0.3	0.36	0.34	0.29	0.28	0.34	0.3	0.25	0.32	0.34	0.32	0.26	< 0.02	0.3
Chloride (Cl)	mg/L	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---
Nitrite (NO_2)	as N mg/L	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---
Nitrate (NO_3)	as N mg/L	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---
Ammonia	mg/L	---	---	< 0.1	---	---	---	---	0.2	---	---	---	---	< 0.1	---
Mercury (Hg)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Silver (Ag)	mg/L	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---
Aluminum (Al)	mg/L	---	---	0.15	---	---	---	---	0.14	---	---	---	---	0.01	---
Arsenic (As)	mg/L	---	---	0.0074	---	---	---	---	0.006	---	---	---	---	0.0053	---
Barium (Ba)	mg/L	---	---	0.00323	---	---	---	---	0.00287	---	---	---	---	0.00293	---
Beryllium (Be)	mg/L	---	---	0.0002	---	---	---	---	0.00016	---	---	---	---	0.00019	---
Boron (B)	mg/L	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---
Bismuth (Bi)	mg/L	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---
Cadmium (Cd)	mg/L	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	0.00007	---
Cobalt (Co)	mg/L	---	---	0.0408	---	---	---	---	0.0324	---	---	---	---	0.0278	---
Chromium (Cr)	mg/L	---	---	< 0.0003	---	---	---	---	0.0014	---	---	---	---	< 0.0003	---
Copper (Cu)	mg/L	---	---	0.307	---	---	---	---	0.251	---	---	---	---	0.234	---
Potassium (K)	mg/L	---	---	0.15	---	---	---	---	0.11	---	---	---	---	0.52	---
Lithium (Li)	mg/L	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---
Magnesium (Mg)	mg/L	---	---	0.177	---	---	---	---	0.138	---	---	---	---	0.052	---
Manganese (Mn)	mg/L	---	---	0.0043	---	---	---	---	0.00348	---	---	---	---	0.00277	---
Molydenum (Mo)	mg/L	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---
Sodium (Na)	mg/L	---	---	< 0.01	---	---	---	---	< 0.04	---	---	---	---	0.05	---
Nickel (Ni)	mg/L	---	---	0.001	---	---	---	---	0.0011	---	---	---	---	0.0012	---
Phosphorous (P)	mg/L	---	---	0.02	---	---	---	---	0.03	---	---	---	---	0.03	---
Lead (Pb)	mg/L	---	---	0.00008	---	---	---	---	0.00005	---	---	---	---	0.00008	---
Antimony (Sb)	mg/L	---	---	0.0003	---	---	---	---	0.0005	---	---	---	---	0.0002	---
Selenium (Se)	mg/L	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---
Tin (Sn)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Strontium (Sr)	mg/L	---	---	0.0004	---	---	---	---	0.0002	---	---	---	---	0.0012	---
Titanium (Ti)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	0.0002	---
Thallium (Tl)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Uranium (U)	mg/L	---	---	0.00118	---	---	---	---	0.00116	---	---	---	---	0.00106	---
Vanadium (V)	mg/L	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	0.00009	---
Tungsten (W)	mg/L	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---
Yttrium (Y)	mg/L	---	---	0.00148	---	---	---	---	0.00139	---	---	---	---	0.00113	---
Zinc (Zn)	mg/L	---	---	0.0029	---	---	---	---	0.0034	---	---	---	---	0.0057	---

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	82	83	84	85	86	87	88	89	90	91	92	93	94
Date		Nov 14, 06	Nov 21, 06	Nov 28, 06	Dec 05, 06	Dec 12, 06	Dec 19, 06	Dec 27, 06	Jan 02, 07	Jan 9, 07	Jan 16, 07	Jan 23, 07	Jan 30, 07	Feb 6, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		904	876	902	936	915	880	928	874	938	940	943	954	942
pH	Effluent (units)	4.81	4.81	4.80	4.92	4.60	4.64	4.68	4.85	4.65	4.79	5.02	4.70	4.68
Acidity	as $CaCO_3$ (mg/L)	5	6	5	5	4	8	5	4	6	6	3	5	43
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	17	17	16	15	18	20	19	13	21	21	17	22	20
Sulphate (SO_4)	mg/L	4.4	5.6	7.9	5.5	6.6	4.8	5.6	3.1	8.0	3.9	4.0	6.1	4.4
Calcium (Ca)	mg/L	< 0.03	< 0.03	0.04	< 0.05	< 0.05	0.04	< 0.03	< 0.03	< 0.05	< 0.03	< 0.03	< 0.03	< 0.03
Iron (Fe)	mg/L	0.32	0.44	0.43	0.38	0.36	0.42	0.39	0.26	0.39	0.39	0.42	0.45	0.46
Chloride (Cl)	mg/L	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	< 0.05	---	---	---	---	0.1	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Aluminum (Al)	mg/L	---	---	---	0.16	---	---	---	---	0.15	---	---	---	---
Arsenic (As)	mg/L	---	---	---	0.0054	---	---	---	---	0.0036	---	---	---	---
Barium (Ba)	mg/L	---	---	---	0.0037	---	---	---	---	0.00352	---	---	---	---
Beryllium (Be)	mg/L	---	---	---	0.00015	---	---	---	---	0.0001	---	---	---	---
Boron (B)	mg/L	---	---	---	< 0.007	---	---	---	---	< 0.002	---	---	---	---
Bismuth (Bi)	mg/L	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Cadmium (Cd)	mg/L	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---
Cobalt (Co)	mg/L	---	---	---	0.0336	---	---	---	---	0.026	---	---	---	---
Chromium (Cr)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Copper (Cu)	mg/L	---	---	---	0.286	---	---	---	---	0.233	---	---	---	---
Potassium (K)	mg/L	---	---	---	0.15	---	---	---	---	0.14	---	---	---	---
Lithium (Li)	mg/L	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	---	---	---	0.169	---	---	---	---	0.168	---	---	---	---
Manganese (Mn)	mg/L	---	---	---	0.00411	---	---	---	---	0.00421	---	---	---	---
Molydenum (Mo)	mg/L	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---	---	---
Sodium (Na)	mg/L	---	---	---	< 0.04	---	---	---	---	0.01	---	---	---	---
Nickel (Ni)	mg/L	---	---	---	0.0012	---	---	---	---	0.0009	---	---	---	---
Phosphorous (P)	mg/L	---	---	---	0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	---	---	---	0.00002	---	---	---	---	< 0.00002	---	---	---	---
Antimony (Sb)	mg/L	---	---	---	0.0003	---	---	---	---	0.0002	---	---	---	---
Selenium (Se)	mg/L	---	---	---	< 0.003	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Strontium (Sr)	mg/L	---	---	---	< 0.0001	---	---	---	---	0.0003	---	---	---	---
Titanium (Ti)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Thallium (Tl)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Uranium (U)	mg/L	---	---	---	0.00158	---	---	---	---	0.00157	---	---	---	---
Vanadium (V)	mg/L	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---
Tungsten (W)	mg/L	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---
Yttrium (Y)	mg/L	---	---	---	0.00139	---	---	---	---	0.00121	---	---	---	---
Zinc (Zn)	mg/L	---	---	---	0.0024	---	---	---	---	0.0049	---	---	---	---

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	95	96	97	98	99	100	101	102	103	104	105	106	107
Date		Feb 13, 07	Feb 20, 07	Feb 27, 07	Mar 06, 07	Mar 13,07	Mar 20, 07	Mar 27, 07	Apr 03, 07	Apr 10, 07	Apr 17, 07	Apr 24, 07	May 01, 07	May 08, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		945	958	947	956	952	984	954	983	966	948	949	950	973
pH	Effluent (units)	4.84	4.81	4.72	4.74	4.78	4.55	4.78	4.69	4.77	4.70	4.78	4.91	5.51
Acidity	as $CaCO_3$ (mg/L)	5	6	5	5	5	6	6	< 2	6	8	5	5	2
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	4	< 2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	23	17	18	18	18	22	16	17	18	46	21	18	14
Sulphate (SO_4)	mg/L	5.3	5.6	7.1	6.2	4.7	4.9	5.0	5.1	4.5	4.7	4.5	4.4	5.0
Calcium (Ca)	mg/L	< 0.05	< 0.03	< 0.03	< 0.03	0.03	< 0.03	< 0.03	< 0.03	0.03	< 0.03	< 0.03	0.03	< 0.03
Iron (Fe)	mg/L	0.32	0.42	0.43	0.43	0.41	0.46	0.44	0.41	0.45	0.44	0.49	0.44	0.41
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	0.2	---	---	---	---	< 0.05	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Silver (Ag)	mg/L	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---
Aluminum (Al)	mg/L	0.09	---	---	---	---	0.19	---	---	---	---	0.19	---	---
Arsenic (As)	mg/L	0.0053	---	---	---	---	0.0042	---	---	---	---	0.0047	---	---
Barium (Ba)	mg/L	0.00413	---	---	---	---	0.0042	---	---	---	---	0.00417	---	---
Beryllium (Be)	mg/L	0.00018	---	---	---	---	0.00012	---	---	---	---	0.00014	---	---
Boron (B)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---
Bismuth (Bi)	mg/L	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---
Cadmium (Cd)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---
Cobalt (Co)	mg/L	0.0311	---	---	---	---	0.0271	---	---	---	---	0.0268	---	---
Chromium (Cr)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Copper (Cu)	mg/L	0.295	---	---	---	---	0.284	---	---	---	---	0.284	---	---
Potassium (K)	mg/L	0.18	---	---	---	---	0.14	---	---	---	---	0.14	---	---
Lithium (Li)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---
Magnesium (Mg)	mg/L	0.234	---	---	---	---	0.19	---	---	---	---	0.185	---	---
Manganese (Mn)	mg/L	0.00465	---	---	---	---	0.00421	---	---	---	---	0.0046	---	---
Molydenum (Mo)	mg/L	< 0.00005	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---
Sodium (Na)	mg/L	0.03	---	---	---	---	0.01	---	---	---	---	0.01	---	---
Nickel (Ni)	mg/L	0.0013	---	---	---	---	0.0011	---	---	---	---	0.0011	---	---
Phosphorous (P)	mg/L	< 0.01	---	---	---	---	0.02	---	---	---	---	< 0.01	---	---
Lead (Pb)	mg/L	0.00014	---	---	---	---	0.00008	---	---	---	---	< 0.00002	---	---
Antimony (Sb)	mg/L	0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Selenium (Se)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Tin (Sn)	mg/L	< 0.0003	---	---	---	---	0.0003	---	---	---	---	0.0003	---	---
Strontium (Sr)	mg/L	0.0004	---	---	---	---	0.0003	---	---	---	---	0.0003	---	---
Titanium (Ti)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Thallium (Tl)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Uranium (U)	mg/L	0.00071	---	---	---	---	0.00151	---	---	---	---	0.00157	---	---
Vanadium (V)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---
Tungsten (W)	mg/L	0.00047	---	---	---	---	< 0.00007	---	---	---	---	0.00021	---	---
Yttrium (Y)	mg/L	0.001016	---	---	---	---	0.00138	---	---	---	---	0.00156	---	---
Zinc (Zn)	mg/L	0.0031	---	---	---	---	0.0027	---	---	---	---	0.0028	---	---

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	108	109	110	111	112	113	114	115	116	117	118	119	120	121
Date		May 15, 07	May 22, 07	May 29, 07	Jun 5, 07	Jun 12, 07	Jun 19, 07	Jun 26, 07	Jul 03, 07	Jul 10, 07	Jul 17, 07	Jul 24, 07	Jul 31, 07	Aug 7, 07	Aug 14, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		922	975	954	977	916	834	963	837	981	988	876	904	992	981
pH	Effluent (units)	4.52	4.88	4.83	4.90	4.72	4.70	4.68	4.70	4.70	4.43	4.56	4.87	4.64	4.63
Acidity	as $CaCO_3$ (mg/L)	6	5	5	5	5	5	4	5	6	5	7	4	5	6
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	22	14	14	26	22	20	22	20	18	21	19	15	16	19
Sulphate (SO_4)	mg/L	5.4	5.1	5.0	6.0	5.4	5.8	6.9	5.4	5.9	4.8	< 0.5	5.5	7.0	6.0
Calcium (Ca)	mg/L	< 0.03	< 0.03	< 0.03	0.2	< 0.03	< 0.03	< 0.03	< 0.03	0.03	0.05	2	0.04	0.04	0.03
Iron (Fe)	mg/L	0.59	0.36	0.38	0.41	0.39	0.47	0.46	0.53	0.43	0.43	0.4	0.43	0.39	0.39
Chloride (Cl)	mg/L	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---
Nitrite (NO_2)	as N mg/L	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---
Nitrate (NO_3)	as N mg/L	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	0.07	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---
Ammonia	mg/L	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---
Mercury (Hg)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Silver (Ag)	mg/L	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---
Aluminum (Al)	mg/L	---	---	0.15	---	---	---	---	0.2	---	---	---	---	0.14	---
Arsenic (As)	mg/L	---	---	0.0041	---	---	---	---	0.0042	---	---	---	---	0.0039	---
Barium (Ba)	mg/L	---	---	0.00363	---	---	---	---	0.00501	---	---	---	---	0.00373	---
Beryllium (Be)	mg/L	---	---	0.00008	---	---	---	---	0.00013	---	---	---	---	0.00009	---
Boron (B)	mg/L	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	0.003	---
Bismuth (Bi)	mg/L	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---
Cadmium (Cd)	mg/L	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---
Cobalt (Co)	mg/L	---	---	0.0196	---	---	---	---	0.02439	---	---	---	---	0.0184	---
Chromium (Cr)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Copper (Cu)	mg/L	---	---	0.224	---	---	---	---	0.283	---	---	---	---	0.224	---
Potassium (K)	mg/L	---	---	0.12	---	---	---	---	0.13	---	---	---	---	0.11	---
Lithium (Li)	mg/L	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---
Magnesium (Mg)	mg/L	---	---	0.136	---	---	---	---	0.177	---	---	---	---	0.142	---
Manganese (Mn)	mg/L	---	---	0.00322	---	---	---	---	0.00399	---	---	---	---	0.00347	---
Molydenum (Mo)	mg/L	---	---	< 0.00005	---	---	---	---	0.00006	---	---	---	---	< 0.00005	---
Sodium (Na)	mg/L	---	---	0.02	---	---	---	---	< 0.01	---	---	---	---	0.02	---
Nickel (Ni)	mg/L	---	---	0.0009	---	---	---	---	0.001	---	---	---	---	0.0008	---
Phosphorous (P)	mg/L	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	0.02	---
Lead (Pb)	mg/L	---	---	0.0001	---	---	---	---	0.00009	---	---	---	---	0.00014	---
Antimony (Sb)	mg/L	---	---	0.0004	---	---	---	---	0.0004	---	---	---	---	0.0004	---
Selenium (Se)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Tin (Sn)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Strontium (Sr)	mg/L	---	---	< 0.0001	---	---	---	---	0.0003	---	---	---	---	0.0001	---
Titanium (Ti)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Thallium (Tl)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Uranium (U)	mg/L	---	---	0.00068	---	---	---	---	0.00157	---	---	---	---	0.001	---
Vanadium (V)	mg/L	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---
Tungsten (W)	mg/L	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---
Yttrium (Y)	mg/L	---	---	0.000687	---	---	---	---	0.001407	---	---	---	---	0.00103	---
Zinc (Zn)	mg/L	---	---	0.0044	---	---	---	---	0.0032	---	---	---	---	0.003	---

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	122	123	124	125	126	127	128	129	130	131	132	133	134
Date		Aug 21, 07	Aug 28, 07	Sep 4, 07	Sep 11, 07	Sep 18, 07	Sep 25, 07	Oct 02, 07	Oct 09, 07	Oct 16, 07	Oct 23, 07	Oct 30, 07	Nov 06, 07	Nov 13, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		966	980	978	976	970	993	985	988	976	982	990	956	971
pH	Effluent (units)	4.44	4.75	4.57	4.83	4.73	4.88	4.85	4.94	4.73	6.41	4.56	4.88	4.78
Acidity	as $CaCO_3$ (mg/L)	5	5	3	5	5	6	7	5	4	9	4	5	5
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	< 2	< 2	< 2
Conductivity	µmhos/cm	26	17	108	22	21	18	13	21	15	33	15	16	14
Sulphate (SO_4)	mg/L	4.6	6.3	5.9	6.6	7.5	5.4	8.0	9.9	6.3	7.9	7.3	8.7	6.0
Calcium (Ca)	mg/L	0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.1	0.03	0.09	< 0.03
Iron (Fe)	mg/L	0.41	0.44	0.49	0.41	0.44	0.53	0.44	0.42	0.4	0.39	0.41	0.69	0.41
Chloride (Cl)	mg/L	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Aluminum (Al)	mg/L	---	---	---	0.15	---	---	---	---	0.14	---	---	---	---
Arsenic (As)	mg/L	---	---	---	0.0036	---	---	---	---	0.0033	---	---	---	---
Barium (Ba)	mg/L	---	---	---	0.00386	---	---	---	---	0.00378	---	---	---	---
Beryllium (Be)	mg/L	---	---	---	0.0001	---	---	---	---	0.00009	---	---	---	---
Boron (B)	mg/L	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Bismuth (Bi)	mg/L	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Cadmium (Cd)	mg/L	---	---	---	0.000003	---	---	---	---	< 0.000003	---	---	---	---
Cobalt (Co)	mg/L	---	---	---	0.0183	---	---	---	---	0.0164	---	---	---	---
Chromium (Cr)	mg/L	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---
Copper (Cu)	mg/L	---	---	---	0.228	---	---	---	---	0.229	---	---	---	---
Potassium (K)	mg/L	---	---	---	0.11	---	---	---	---	0.11	---	---	---	---
Lithium (Li)	mg/L	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	---	---	---	0.15	---	---	---	---	0.145	---	---	---	---
Manganese (Mn)	mg/L	---	---	---	0.00346	---	---	---	---	0.00326	---	---	---	---
Molydenum (Mo)	mg/L	---	---	---	0.00001	---	---	---	---	< 0.00001	---	---	---	---
Sodium (Na)	mg/L	---	---	---	< 0.01	---	---	---	---	0.01	---	---	---	---
Nickel (Ni)	mg/L	---	---	---	0.0008	---	---	---	---	0.0008	---	---	---	---
Phosphorous (P)	mg/L	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	---	---	---	0.00011	---	---	---	---	0.00165	---	---	---	---
Antimony (Sb)	mg/L	---	---	---	0.00022	---	---	---	---	0.00022	---	---	---	---
Selenium (Se)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	---	---	---	0.00018	---	---	---	---	0.00009	---	---	---	---
Strontium (Sr)	mg/L	---	---	---	0.0002	---	---	---	---	0.0002	---	---	---	---
Titanium (Ti)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Thallium (Tl)	mg/L	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Uranium (U)	mg/L	---	---	---	0.00126	---	---	---	---	0.00125	---	---	---	---
Vanadium (V)	mg/L	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Tungsten (W)	mg/L	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Yttrium (Y)	mg/L	---	---	---	0.00109	---	---	---	---	0.00104	---	---	---	---
Zinc (Zn)	mg/L	---	---	---	0.003	---	---	---	---	0.003	---	---	---	---

Humidity Cell Results for Rock Sample 100932 (Rhyolite)

S-Total:	0.59%
S^{2-}:	0.49%
NP:	0.00 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	15.4 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	135	136	137	138	139	140	141	142	143	144	145	146	147
Date		Nov 20, 07	Nov 27, 07	Dec 04, 07	Dec 11, 07	Dec 18, 07	Dec 24, 07	Jan 02, 08	Jan 08, 08	Jan 15, 08	Jan 22, 08	Jan 29, 08	Feb 05, 08	Feb 12, 08
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		4.93	*	975	485	991	962	976	962	982	987	955	965	978
pH	Effluent (units)	7.00	4.60	4.83	4.83	4.66	4.82	4.56	4.57	4.76	4.76	4.98	4.80	4.65
Acidity	as $CaCO_3$ (mg/L)	< 2	7	4	8	6	6	6	6	5	6	5	4	5
Alkalinity	as $CaCO_3$ (mg/L)	14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	6	25	14	21	16	14	20	19	17	19	14	17	19
Sulphate (SO_4)	mg/L	< 0.03	6.3	5.5	6.3	8.5	4.8	3.6	3.2	3.1	3.6	3.6	3.6	4.0
Calcium (Ca)	mg/L	0.41	0.06	< 0.03	0.05	< 0.03	< 0.03	0.03	< 0.03	< 0.03	0.04	< 0.03	0.05	0.03
Iron (Fe)	mg/L	< 0.2	0.58	0.33	0.62	0.38	0.28	0.4	0.38	0.32	0.38	0.4	0.38	0.32
Chloride (Cl)	mg/L	< 0.06	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---
Nitrite (NO_2)	as N mg/L	< 0.05	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---
Nitrate (NO_3)	as N mg/L	< 2	---	---	---	---	0.06	---	---	---	---	< 0.05	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 0.1	---	---	---	---	< 2	---	---	---	---	< 2	---	---
Ammonia	mg/L	< 0.0001	---	---	---	---	< 0.1	---	---	---	---	0.1	---	---
Mercury (Hg)	mg/L	< 0.00001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Silver (Ag)	mg/L	0.15	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---
Aluminum (Al)	mg/L	0.0032	---	---	---	---	0.13	---	---	---	---	0.15	---	---
Arsenic (As)	mg/L	0.00366	---	---	---	---	0.003	---	---	---	---	0.0029	---	---
Barium (Ba)	mg/L	0.0001	---	---	---	---	0.00319	---	---	---	---	0.00363	---	---
Beryllium (Be)	mg/L	0.034	---	---	---	---	0.00008	---	---	---	---	0.00008	---	---
Boron (B)	mg/L	< 0.00001	---	---	---	---	0.036	---	---	---	---	0.003	---	---
Bismuth (Bi)	mg/L	0.000005	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---
Cadmium (Cd)	mg/L	0.0186	---	---	---	---	0.000006	---	---	---	---	0.000005	---	---
Cobalt (Co)	mg/L	< 0.0005	---	---	---	---	0.0149	---	---	---	---	0.0157	---	---
Chromium (Cr)	mg/L	0.24	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---
Copper (Cu)	mg/L	0.1	---	---	---	---	0.198	---	---	---	---	0.228	---	---
Potassium (K)	mg/L	< 0.002	---	---	---	---	0.08	---	---	---	---	0.1	---	---
Lithium (Li)	mg/L	0.153	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---
Magnesium (Mg)	mg/L	0.0036	---	---	---	---	0.122	---	---	---	---	0.143	---	---
Manganese (Mn)	mg/L	< 0.00001	---	---	---	---	0.00313	---	---	---	---	0.00358	---	---
Molydenum (Mo)	mg/L	0.01	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---
Sodium (Na)	mg/L	0.0008	---	---	---	---	0.01	---	---	---	---	0.02	---	---
Nickel (Ni)	mg/L	0.01	---	---	---	---	0.0007	---	---	---	---	0.0007	---	---
Phosphorous (P)	mg/L	0.00006	---	---	---	---	0.01	---	---	---	---	< 0.01	---	---
Lead (Pb)	mg/L	0.00019	---	---	---	---	0.00006	---	---	---	---	0.0001	---	---
Antimony (Sb)	mg/L	< 0.001	---	---	---	---	0.00013	---	---	---	---	0.00006	---	---
Selenium (Se)	mg/L	< 0.00001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Tin (Sn)	mg/L	0.0002	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---
Strontium (Sr)	mg/L	< 0.0001	---	---	---	---	0.0002	---	---	---	---	0.0002	---	---
Titanium (Ti)	mg/L	< 0.000002	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Thallium (Tl)	mg/L	0.00131	---	---	---	---	< 0.000002	---	---	---	---	< 0.000002	---	---
Uranium (U)	mg/L	0.00004	---	---	---	---	0.00117	---	---	---	---	0.001221	---	---
Vanadium (V)	mg/L	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	0.00017	---	---
Tungsten (W)	mg/L	0.00099	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---
Yttrium (Y)	mg/L	0.004	---	---	---	---	0.000938	---	---	---	---	0.001048	---	---
Zinc (Zn)	mg/L		---	---	---	---	0.004	---	---	---	---	0.002	---	---

Humidity Cell Results for Rock Sample 100925 (Breccia)

S-Total:	0.02 %
S^{2-}:	0.01 %
NP:	8.7 t CaCO3/1000 t
CaNP:	2.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Date		April 19/05	April 26/05	May 03/05	May 10/05	May 17/05	May 24/05	May 31/05	June 7/05	June 14/05	June 21/05	June 28/05	July 5/05	July 12/05	July 19/05	July 26/05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		811	981	985	987	965	917	960	965	936	970	991	994	993	991	967
pH	Effluent (units)	6.95	6.85	7.19	7.12	7.07	7.15	8.39	7.07	7.19	7.16	7.25	7.34	7.00	6.94	5.63
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	<2	<2	7
Alkalinity	as $CaCO_3$ (mg/L)	6	7	7	8	7	6	11	5	5	7	6	5	4	4	3
Conductivity	µmhos/cm	39	28	25	18	34	13	32	13	14	12	15	12	11	11	17
Sulphate (SO_4)	mg/L	< 5	1.4	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	<0.5	0.6	<0.5
Calcium (Ca)	mg/L	0.92	1.51	16.1	1.27	1.07	0.94	1.04	0.92	0.9	0.99	1.14	0.95	0.89	0.96	0.86
Iron (Fe)	mg/L	0.06	< 0.02	0.18	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<0.02	<0.02	<0.02
Chloride (Cl)	mg/L	< 2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	0.9	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Aluminum (Al)	mg/L	0.08	0.03	2.17	---	---	0.05	---	---	---	---	0.06	---	---	---	---
Arsenic (As)	mg/L	0.032	0.068	0.093	---	---	0.091	---	---	---	---	0.113	---	---	---	---
Barium (Ba)	mg/L	< 0.001	0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Boron (B)	mg/L	< 0.01	0.02	< 0.01	---	---	< 0.02	---	---	---	---	< 0.01	---			
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Cobalt (Co)	mg/L	0.0009	0.0013	0.0006	---	---	0.0004	---	---	---	---	0.0006	---	---	---	---
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Copper (Cu)	mg/L	0.0032	0.0034	0.0013	---	---	< 0.0008	---	---	---	---	0.0009	---	---	---	---
Potassium (K)	mg/L	2.29	1.92	1.75	---	---	1.2200	---	---	---	---	1.2200	---	---	---	---
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Magnesium (Mg)	mg/L	0.355	0.628	0.583	---	---	0.43	---	---	---	---	0.444	---	---	---	---
Manganese (Mn)	mg/L	0.0024	0.0026	0.0014	---	---	0.0009	---	---	---	---	0.0016	---	---	---	---
Molydenum (Mo)	mg/L	0.0005	0.0025	0.002	---	---	0.000	---	---	---	---	< 0.0003	---	---	---	---
Sodium (Na)	mg/L	1.51	1.83	1.33	---		0.380					0.150		---	---	---
Nickel (Ni)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Lead (Pb)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Antimony (Sb)	mg/L	0.0021	0.0025	0.0028	---	---	0.0018	---	---	---	---	0.0023	---	---	---	---
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Tin (Sn)	mg/L	0.004	0.008	0.003	---	---	0.001	---	---	---	---	< 0.001	---	---	---	---
Strontium (Sr)	mg/L	0.0014	0.002	0.0017	---	---	0.001	---	---	---	---	0.0013	---	---	---	---
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Uranium (U)	mg/L	< 0.0002	0.0006	0.0007	---	---	0.0006	---	---	---	---	0.0004	---	---	---	---
Vanadium (V)	mg/L	< 0.0009	< 0.0009	< 0.0009	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---
Tungsten (W)	mg/L	0.0007	0.0012	0.0011	---	---	0.0003	---	---	---	---	0.0002	---	---	---	---
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Zinc (Zn)	mg/L	< 0.001	0.001	< 0.001	---	---	< 0.001	---	---	---	---	0.0020	---	---	---	---

Humidity Cell Results for Rock Sample 100925 (Breccia)

S-Total:	0.02 %
S^{2-}:	0.01 %
NP:	8.7 t CaCO3/1000 t
CaNP:	2.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Date		Aug 2/05	Aug 9/05	Aug 16/05	Aug 23/05	Aug 30/05	Sep 6/05	Sep 13/05	Sep 20/ 05	Sep 27/05	Oct 04/05	Oct 11/05	Oct18/05	Oct25/05	Nov1 01/05	Nov 08/05	Nov 15/05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		966	986	992	988	995	982	989	996	991	978	974	985	988	989	999	988
pH	Effluent (units)	7.00	6.96	6.80	7.85	7.00	7.03	8.29	6.34	6.97	6.82	6.91	6.74	6.72	6.89	6.90	6.90
Acidity	as $CaCO_3$ (mg/L)	< 2	<2	<2	<2	<2	< 2	<2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5.2	5	3	5	3	4	6	3	3	4	3	3	3	4	2	3
Conductivity	µmhos/cm	12	9	9	12	10	7	18	11	9	9	10	7	6	8	10	10
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.94	0.86	0.41	0.8	0.79	0.79	0.81	0.73	0.77	0.82	0.66	0.63	0.67	0.69	0.71	0.67
Iron (Fe)	mg/L	0.07	<0.02	<0.02	<0.02	<0.02	< 0.02	<0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	<2	---	---	---	---	< 2
Ammonia	mg/L	< 0.1	---	---	---	---	0.2	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	0.04	---	---	---	---	0.01	---	---	---	---	< 0.01	---	---	---	---	0.02
Arsenic (As)	mg/L	0.083	---	---	---	---	0.052	---	---	---	---	0.047	---	---	---	---	0.049
Barium (Ba)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L	0.01					< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Bismuth (Bi)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	0.0005	---	---	---	---	0.0005	---	---	---	---	0.0004	---	---	---	---	0.0004
Chromium (Cr)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	0.90	---	---	---	---	0.67	---	---	---	---	0.5600	---	---	---	---	0.5400
Lithium (Li)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	0.344	---	---	---	---	0.285	---	---	---	---	0.2330	---	---	---	---	0.24
Manganese (Mn)	mg/L	0.0013	---	---	---	---	0.0013	---	---	---	---	0.00	---	---	---	---	< 0.0007
Molydenum (Mo)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Sodium (Na)	mg/L	0.08	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Nickel (Ni)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	0.0023	---	---	---	---	0.0015	---	---	---	---	0.0011	---	---	---	---	0.0011
Selenium (Se)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	0.0009	---	---	---	---	0.0008	---	---	---	---	< 0.0001	---	---	---	---	0.0013
Titanium (Ti)	mg/L	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Vanadium (V)	mg/L	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	0.0006	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	0.0020

Humidity Cell Results for Rock Sample 100925 (Breccia)

S-Total:	0.02 %
S^{2-}:	0.01 %
NP:	8.7 t CaCO3/1000 t
CaNP:	2.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Date		Nov22/05	Nov29/05	Dec06/05	Dec13/05	Dec 20/05	Dec 27/05	Jan 03/06	Jan 10/06	Jan 17/06	Jan 24/06	Jan 31/06	Feb 07/06	Feb 14/06	Feb 21/06	Feb 28/06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		995	994	988	991	991	988	960	994	983	997	910	958	905	886	901
pH	Effluent (units)	6.86	6.78	6.77	6.71	6.87	6.91	6.92	7.07	6.94	6.90	6.67	6.71	6.52	6.85	6.61
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	4	3	3	3	3	3	2	4	3	3	2	2	2	2	4
Conductivity	µmhos/cm	11	6	6	6	11	13	17	14	14	7	12	6	4	5	16
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.63	0.67	0.6	0.66	0.63	0.63	0.36	0.57	0.6	0.56	0.38	0.44	0.39	0.48	0.86
Iron (Fe)	mg/L	< 0.02	<0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	<2	---	---	---	---	< 2
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	---	---	---	---	0.02	---	---	---	---	0.02	---	---	---	---	0.01
Arsenic (As)	mg/L	---	---	---	---	0.035	---	---	---	---	0.034	---	---	---	---	0.06
Barium (Ba)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.07
Bismuth (Bi)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	---	---	---	---	0.0004	---	---	---	---	0.0004	---	---	---	---	0.0007
Chromium (Cr)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	---	---	---	---	0.4800	---	---	---	---	0.44	---	---	---	---	0.76
Lithium (Li)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	---	---	0.23	---	---	---	---	0.203	---	---	---	---	0.306
Manganese (Mn)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	0.0011
Molydenum (Mo)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	0.0004
Sodium (Na)	mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.03
Nickel (Ni)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.01
Lead (Pb)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	---	---	---	---	0.0006	---	---	---	---	0.0008	---	---	---	---	0.0011
Selenium (Se)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	---	---	---	---	0.0006	---	---	---	---	0.0006	---	---	---	---	0.0008
Titanium (Ti)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Vanadium (V)	mg/L	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	---	---	---	---	0.0010	---	---	---	---	< 0.001	---	---	---	---	0.002

Humidity Cell Results for Rock Sample 100925 (Breccia)

S-Total:	0.02 %
S^{2-}:	0.01 %
NP:	8.7 t CaCO3/1000 t
CaNP:	2.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Date		Mar 07/06	Mar 14/06	Mar 21/06	Mar 28/06.	Apr 04/06	Apr 11/06	Apr 18/06	Apr 25/06	May 02/06	May 09/06	May 16/06	May 23/06	May 30/06	Jun 6/06	Jun 13/06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		883	982	875	925	888	903	870	926	867	683	994	957	908	962	913
pH	Effluent (units)	6.97	6.77	6.93	6.55	6.63	6.68	6.82	7.08	6.89	6.60	6.44	6.60	6.80	6.84	6.78
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	42	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5	3	4	3	2	4	4	4	4	3	4	3	6	3	2
Conductivity	µmhos/cm	7	6	7	10	6	6	9	11	12	45	133	52	459	6	6
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.41	0.57	0.45	0.44	0.34	0.37	0.49	0.41	0.46	0.5	0.78	0.51	0.42	0.6	0.34
Iron (Fe)	mg/L	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.02	0.01	< 0.01	0.02	< 0.01	< 0.02
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003
Aluminum (Al)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Arsenic (As)	mg/L	---	---	---	---	0.0417	---	---	---	---	0.0382	---	---	---	---	0.0269
Barium (Ba)	mg/L	---	---	---	---	0.0003	---	---	---	---	0.00046	---	---	---	---	0.00025
Beryllium (Be)	mg/L	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004
Boron (B)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Cadmium (Cd)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006
Cobalt (Co)	mg/L	---	---	---	---	0.0004	---	---	---	---	0.0005	---	---	---	---	0.00029
Chromium (Cr)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Copper (Cu)	mg/L	---	---	---	---	0.0009	---	---	---	---	0.0028	---	---	---	---	0.001
Potassium (K)	mg/L	---	---	---	---	0.38	---	---	---	---	0.44	---	---	---	---	0.28
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	---	---	0.142	---	---	---	---	0.218	---	---	---	---	0.142
Manganese (Mn)	mg/L	---	---	---	---	0.00046	---	---	---	---	0.00065	---	---	---	---	0.00044
Molydenum (Mo)	mg/L	---	---	---	---	0.00005	---	---	---	---	0.00089	---	---	---	---	0.00008
Sodium (Na)	mg/L	---	---	---	---	0.03	---	---	---	---	0.02	---	---	---	---	< 0.01
Nickel (Ni)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Phosphorous (P)	mg/L	---	---	---	---	0.04	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Lead (Pb)	mg/L	---	---	---	---	0.00003	---	---	---	---	0.00005	---	---	---	---	0.00005
Antimony (Sb)	mg/L	---	---	---	---	0.0007	---	---	---	---	0.0007	---	---	---	---	0.0006
Selenium (Se)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Tin (Sn)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Strontium (Sr)	mg/L	---	---	---	---	0.0003	---	---	---	---	0.0004	---	---	---	---	< 0.0006
Titanium (Ti)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Thallium (Tl)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Uranium (U)	mg/L	---	---	---	---	0.00007	---	---	---	---	0.00009	---	---	---	---	0.00004
Vanadium (V)	mg/L	---	---	---	---	0.00009	---	---	---	---	0.00009	---	---	---	---	0.0001
Tungsten (W)	mg/L	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007
Yttrium (Y)	mg/L	---	---	---	---	0.00002	---	---	---	---	0.00001	---	---	---	---	< 0.000005
Zinc (Zn)	mg/L	---	---	---	---	0.0005	---	---	---	---	0.0016	---	---	---	---	0.0008

Humidity Cell Results for Rock Sample 100925 (Breccia)

S-Total:	0.02 %
S^{2-}:	0.01 %
NP:	8.7 t CaCO3/1000 t
CaNP:	2.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Date		Jun 20, 06	Jun 27, 06	Jul 04, 06	Jul 11, 06	Jul 18, 06	Jul 25, 06	Aug 1, 06	Aug 8, 06	Aug 15, 06	Aug 22, 06	Aug 29, 06	Sep 05, 06	Sep 12, 06	Sep 19, 06	Sep 26, 06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		872	918	879	880	880	884	879	877	883	891	872	879	N/A	879	880
pH	Effluent (units)	6.99	6.52	6.41	6.68	7.09	6.46	6.63	6.45	6.61	6.45	6.60	6.65	6.72	6.54	7.29
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	3	2	2	2	2	2	2	4	2	2	2	2	3	2	2
Conductivity	µmhos/cm	10	5	6	5	1	4	5	5	6	5	4	5	5	5	13
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.35	0.34	0.59	0.32	0.31	0.31	0.26	0.36	0.27	0.36	0.26	0.36	0.48	0.27	0.24
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	0.05	< 0.02	< 0.01	< 0.07	< 0.01	0.17	< 0.02	< 0.01	< 0.01	< 0.01	0.01	< 0.02
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003
Aluminum (Al)	mg/L	---	---	---	---	0.01	---	---	---	---	0.02	---	---	---	---	0.01
Arsenic (As)	mg/L	---	---	---	---	0.0261	---	---	---	---	0.0246	---	---	---	---	0.0242
Barium (Ba)	mg/L	---	---	---	---	0.00021	---	---	---	---	0.00028	---	---	---	---	0.00038
Beryllium (Be)	mg/L	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004
Boron (B)	mg/L	---	---	---	---	0.008	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Cadmium (Cd)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006
Cobalt (Co)	mg/L	---	---	---	---	0.00025	---	---	---	---	0.000353	---	---	---	---	0.000219
Chromium (Cr)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	0.001
Copper (Cu)	mg/L	---	---	---	---	0.0007	---	---	---	---	0.0005	---	---	---	---	0.0004
Potassium (K)	mg/L	---	---	---	---	0.29	---	---	---	---	0.29	---	---	---	---	0.22
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	---	---	0.134	---	---	---	---	0.141	---	---	---	---	0.13
Manganese (Mn)	mg/L	---	---	---	---	0.00034	---	---	---	---	0.0005	---	---	---	---	0.00046
Molydenum (Mo)	mg/L	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---	---	---	0.0002
Sodium (Na)	mg/L	---	---	---	---	0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.04
Nickel (Ni)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Phosphorous (P)	mg/L	---	---	---	---	0.02	---	---	---	---	< 0.01	---	---	---	---	0.07
Lead (Pb)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	0.00004	---	---	---	---	< 0.00002
Antimony (Sb)	mg/L	---	---	---	---	0.0005	---	---	---	---	0.0007	---	---	---	---	0.0007
Selenium (Se)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Tin (Sn)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Strontium (Sr)	mg/L	---	---	---	---	0.0002	---	---	---	---	0.0003	---	---	---	---	0.0002
Titanium (Ti)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Thallium (Tl)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Uranium (U)	mg/L	---	---	---	---	0.00006	---	---	---	---	0.00002	---	---	---	---	0.00013
Vanadium (V)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	0.00012	---	---	---	---	< 0.00006
Tungsten (W)	mg/L	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	0.00015
Yttrium (Y)	mg/L	---	---	---	---	0.000018	---	---	---	---	0.000021	---	---	---	---	0.000017
Zinc (Zn)	mg/L	---	---	---	---	0.0006	---	---	---	---	0.0009	---	---	---	---	0.0006

Humidity Cell Results for Rock Sample 100925 (Breccia)

S-Total:	0.02 %
S^{2-}:	0.01 %
NP:	8.7 t CaCO3/1000 t
CaNP:	2.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Date		Oct 03, 06	Oct 10, 06	Oct 17, 06	Oct 24, 06	Oct 31, 06	Nov 7, 06	Nov 14, 06	Nov 21, 06	Nov 28, 06	Dec 05, 06	Dec 12, 06	Dec 19, 06	Dec 27, 06	Jan 02, 07	Jan 9, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		946	849	874	676	891	884	900	880	879	910	885	878	871	828	890
pH	Effluent (units)	6.56	6.82	6.78	6.23	6.42	6.27	6.52	6.47	6.65	6.56	6.40	6.53	6.47	< 0.05	6.39
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	2	3	3	< 2	2	< 2	3	2	2	< 2	3	2	2	< 2	2
Conductivity	µmhos/cm	12	12	8	5	5	8	7	5	4	4	4	6	5	4	11
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.33	0.59	0.55	0.15	0.23	0.29	0.28	0.35	0.3	0.26	0.26	0.37	0.36	0.2	0.32
Iron (Fe)	mg/L	< 0.01	0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	0.11	< 0.02	< 0.02	0.01	< 0.01	< 0.01	< 0.02
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	0.15
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	---	---	---	0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003
Aluminum (Al)	mg/L	---	---	---	---	< 0.01	---	---	---	---	0.01	---	---	---	---	0.01
Arsenic (As)	mg/L	---	---	---	---	0.0187	---	---	---	---	0.0212	---	---	---	---	0.0247
Barium (Ba)	mg/L	---	---	---	---	0.00023	---	---	---	---	0.00021	---	---	---	---	0.00023
Beryllium (Be)	mg/L	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004
Boron (B)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.007	---	---	---	---	0.004
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Cadmium (Cd)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006
Cobalt (Co)	mg/L	---	---	---	---	0.0004	---	---	---	---	0.000234	---	---	---	---	0.000327
Chromium (Cr)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Copper (Cu)	mg/L	---	---	---	---	0.0004	---	---	---	---	0.0002	---	---	---	---	0.0003
Potassium (K)	mg/L	---	---	---	---	0.61	---	---	---	---	0.29	---	---	---	---	0.33
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	---	---	0.09	---	---	---	---	0.105	---	---	---	---	0.13
Manganese (Mn)	mg/L	---	---	---	---	0.00046	---	---	---	---	0.00117	---	---	---	---	0.00055
Molydenum (Mo)	mg/L	---	---	---	---	0.00007	---	---	---	---	0.00015	---	---	---	---	< 0.00005
Sodium (Na)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.04	---	---	---	---	0.02
Nickel (Ni)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Phosphorous (P)	mg/L	---	---	---	---	0.02	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Lead (Pb)	mg/L	---	---	---	---	0.00007	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Antimony (Sb)	mg/L	---	---	---	---	0.0006	---	---	---	---	0.0006	---	---	---	---	0.0007
Selenium (Se)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.001
Tin (Sn)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Strontium (Sr)	mg/L	---	---	---	---	0.0009	---	---	---	---	< 0.0001	---	---	---	---	0.0003
Titanium (Ti)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Thallium (Tl)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Uranium (U)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	0.00004	---	---	---	---	< 0.00002
Vanadium (V)	mg/L	---	---	---	---	0.00014	---	---	---	---	< 0.00006	---	---	---	---	0.00009
Tungsten (W)	mg/L	---	---	---	---	0.00016	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007
Yttrium (Y)	mg/L	---	---	---	---	0.00001	---	---	---	---	0.000008	---	---	---	---	0.000009
Zinc (Zn)	mg/L	---	---	---	---	0.0023	---	---	---	---	0.0005	---	---	---	---	0.0012

Humidity Cell Results for Rock Sample 100925 (Breccia)

S-Total:	0.02 %
S^{2-}:	0.01 %
NP:	8.7 t CaCO3/1000 t
CaNP:	2.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Date		Jan 16, 07	Jan 23, 07	Jan 30, 07	Feb 6, 07	Feb 13, 07	Feb 20, 07	Feb 27, 07	Mar 06, 07	Mar 13,07	Mar 20, 07	Mar 27, 07	Apr 03, 07	Apr 10, 07	Apr 17, 07	Apr 24, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		899	911	908	907	924	912	908	930	921	1026	968	985	952	926	920
pH	Effluent (units)	6.31	6.39	6.50	8.89	6.40	6.65	6.50	6.62	6.46	6.80	6.70	6.52	6.49	6.37	6.36
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	4	< 2	< 2	< 2	< 2	< 2	< 2	5	3
Alkalinity	as $CaCO_3$ (mg/L)	2	< 2	< 2	4	2	2	< 2	< 2	2	3	2	2	< 2	< 2	< 2
Conductivity	µmhos/cm	11	7	10	21	4	6	5	5	6	8	5	9	5	8	6
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.25	0.28	0.25	0.26	0.27	0.26	0.26	0.27	0.26	0.44	0.44	0.44	0.34	0.26	0.31
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003
Aluminum (Al)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Arsenic (As)	mg/L	---	---	---	---	0.0215	---	---	---	---	0.0154	---	---	---	---	0.0176
Barium (Ba)	mg/L	---	---	---	---	0.00022	---	---	---	---	0.00027	---	---	---	---	0.00021
Beryllium (Be)	mg/L	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004
Boron (B)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Cadmium (Cd)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006
Cobalt (Co)	mg/L	---	---	---	---	0.000177	---	---	---	---	0.000368	---	---	---	---	0.000328
Chromium (Cr)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Copper (Cu)	mg/L	---	---	---	---	0.0003	---	---	---	---	0.0003	---	---	---	---	0.0003
Potassium (K)	mg/L	---	---	---	---	0.35	---	---	---	---	0.32	---	---	---	---	0.27
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	---	---	0.121	---	---	---	---	0.167	---	---	---	---	0.11
Manganese (Mn)	mg/L	---	---	---	---	0.00044	---	---	---	---	0.00076	---	---	---	---	0.0002
Molydenum (Mo)	mg/L	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---	---	---	0.00009
Sodium (Na)	mg/L	---	---	---	---	0.04	---	---	---	---	0.04	---	---	---	---	0.02
Nickel (Ni)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Phosphorous (P)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Lead (Pb)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	0.00007	---	---	---	---	< 0.00002
Antimony (Sb)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	0.0004	---	---	---	---	0.0004
Selenium (Se)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Tin (Sn)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	0.0005	---	---	---	---	0.0004
Strontium (Sr)	mg/L	---	---	---	---	0.0003	---	---	---	---	0.0004	---	---	---	---	0.0003
Titanium (Ti)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	0.0003	---	---	---	---	< 0.0002
Thallium (Tl)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Uranium (U)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Vanadium (V)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	0.00013	---	---	---	---	0.00006
Tungsten (W)	mg/L	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	0.0003
Yttrium (Y)	mg/L	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005
Zinc (Zn)	mg/L	---	---	---	---	0.0005	---	---	---	---	0.0021	---	---	---	---	0.0012

Humidity Cell Results for Rock Sample 100925 (Breccia)

S-Total:	0.02 %
S^{2-}:	0.01 %
NP:	8.7 t CaCO3/1000 t
CaNP:	2.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Date		May 01, 07	May 08, 07	May 15, 07	May 22, 07	May 29, 07	Jun 5, 07	Jun 12, 07	Jun 19, 07	Jun 26, 07	Jul 03, 07	Jul 10, 07	Jul 17, 07	Jul 24, 07	Jul 31, 07	Aug 7, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		958	948	990	949	934	966	899	985	984	948	956	968	986	972	946
pH	Effluent (units)	6.53	6.61	6.66	6.52	6.84	7.07	6.93	6.61	6.53	6.48	7.57	6.41	6.45	6.30	6.27
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	3	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	2	2	3	2	2	3	3	2	2	< 2	3	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	7	7	7	5	7	26	20	7	7	5	10	5	4	5	4
Sulphate (SO_4)	mg/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	0.6	< 0.5	< 0.5
Calcium (Ca)	mg/L	0.34	0.3	0.49	0.3	0.33	1.09	0.29	0.47	0.33	0.29	0.28	0.37	1.23	0.42	0.25
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	0.06
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	0.1
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003
Aluminum (Al)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Arsenic (As)	mg/L	---	---	---	---	0.0135	---	---	---	---	0.016	---	---	---	---	0.0146
Barium (Ba)	mg/L	---	---	---	---	0.00021	---	---	---	---	0.00021	---	---	---	---	0.00019
Beryllium (Be)	mg/L	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004
Boron (B)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Cadmium (Cd)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006
Cobalt (Co)	mg/L	---	---	---	---	0.000349	---	---	---	---	0.000254	---	---	---	---	0.000307
Chromium (Cr)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Copper (Cu)	mg/L	---	---	---	---	0.0008	---	---	---	---	0.0004	---	---	---	---	0.0003
Potassium (K)	mg/L	---	---	---	---	0.28	---	---	---	---	0.24	---	---	---	---	0.23
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	---	---	0.123	---	---	---	---	0.088	---	---	---	---	0.095
Manganese (Mn)	mg/L	---	---	---	---	0.00043	---	---	---	---	0.00007	---	---	---	---	0.00042
Molydenum (Mo)	mg/L	---	---	---	---	0.00008	---	---	---	---	0.00047	---	---	---	---	0.00044
Sodium (Na)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	0.01
Nickel (Ni)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Phosphorous (P)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	0.01
Lead (Pb)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	0.00003	---	---	---	---	< 0.00002
Antimony (Sb)	mg/L	---	---	---	---	0.0006	---	---	---	---	0.0009	---	---	---	---	0.0005
Selenium (Se)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Tin (Sn)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Strontium (Sr)	mg/L	---	---	---	---	0.0001	---	---	---	---	0.0003	---	---	---	---	0.0001
Titanium (Ti)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Thallium (Tl)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Uranium (U)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	0.00005	---	---	---	---	< 0.00002
Vanadium (V)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006
Tungsten (W)	mg/L	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007
Yttrium (Y)	mg/L	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005
Zinc (Zn)	mg/L	---	---	---	---	0.0013	---	---	---	---	0.001	---	---	---	---	0.0008

Humidity Cell Results for Rock Sample 100925 (Breccia)

S-Total:	0.02 %
S^{2-}:	0.01 %
NP:	8.7 t CaCO3/1000 t
CaNP:	2.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	121	122	123	124	125	126	127	128	129	130	131	132	133	134
Date		Aug 14, 07	Aug 21, 07	Aug 28, 07	Sep 4, 07	Sep 11, 07	Sep 18, 07	Sep 25, 07	Oct 02, 07	Oct 09, 07	Oct 16, 07	Oct 23, 07	Oct 30, 07	Nov 06, 07	Nov 13, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		882	909	886	938	963	964	939	937	950	956	879	887	949	883
pH	Effluent (units)	6.17	5.95	6.39	6.12	9.56	6.26	6.35	6.59	6.56	6.15	3.64	6.29	6.34	6.53
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	2	3	< 2	3	2	< 2	< 2	< 2	12	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	10	< 2	< 2	2	< 2	2	< 2	< 2	< 2	2
Conductivity	µmhos/cm	4	6	4	14	59	6	4	12	7	5	81	6	5	4
Sulphate (SO_4)	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.3	< 0.5	< 0.5	< 0.5
Calcium (Ca)	mg/L	0.22	0.24	0.2	0.22	0.27	0.22	0.2	0.23	0.24	0.22	0.24	0.28	0.24	0.27
Iron (Fe)	mg/L	< 0.01	0.01	< 0.01	0.19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	8	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Aluminum (Al)	mg/L	---	---	---	---	0.01	---	---	---	---	< 0.01	---	---	---	---
Arsenic (As)	mg/L	---	---	---	---	0.0158	---	---	---	---	0.0136	---	---	---	---
Barium (Ba)	mg/L	---	---	---	---	0.0002	---	---	---	---	0.00015	---	---	---	---
Beryllium (Be)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Boron (B)	mg/L	---	---	---	---	< 0.002	---	---	---	---	0.004	---	---	---	---
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Cadmium (Cd)	mg/L	---	---	---	---	< 0.000003	---	---	---	---	< 0.000003	---	---	---	---
Cobalt (Co)	mg/L	---	---	---	---	0.000377	---	---	---	---	0.000307	---	---	---	---
Chromium (Cr)	mg/L	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---
Copper (Cu)	mg/L	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---
Potassium (K)	mg/L	---	---	---	---	0.26	---	---	---	---	0.22	---	---	---	---
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	---	---	---	---	0.105	---	---	---	---	0.087	---	---	---	---
Manganese (Mn)	mg/L	---	---	---	---	0.00049	---	---	---	---	0.00034	---	---	---	---
Molydenum (Mo)	mg/L	---	---	---	---	0.00008	---	---	---	---	0.00002	---	---	---	---
Sodium (Na)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Nickel (Ni)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Phosphorous (P)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	---	---	---	---	0.00003	---	---	---	---	0.00004	---	---	---	---
Antimony (Sb)	mg/L	---	---	---	---	0.00042	---	---	---	---	0.00043	---	---	---	---
Selenium (Se)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	---	---	---	---	0.00026	---	---	---	---	0.00019	---	---	---	---
Strontium (Sr)	mg/L	---	---	---	---	0.0002	---	---	---	---	0.0002	---	---	---	---
Titanium (Ti)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Thallium (Tl)	mg/L	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Uranium (U)	mg/L	---	---	---	---	< 0.000001	---	---	---	---	0.000011	---	---	---	---
Vanadium (V)	mg/L	---	---	---	---	0.00005	---	---	---	---	< 0.00003	---	---	---	---
Tungsten (W)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Yttrium (Y)	mg/L	---	---	---	---	< 0.000001	---	---	---	---	0.000003	---	---	---	---
Zinc (Zn)	mg/L	---	---	---	---	0.001	---	---	---	---	0.001	---	---	---	---

Humidity Cell Results for Rock Sample 100925 (Breccia)

S-Total:	0.02 %
S^{2-}:	0.01 %
NP:	8.7 t CaCO3/1000 t
CaNP:	2.5 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149
Date		Nov 20, 07	Nov 27, 07	Dec 04, 07	Dec 11, 07	Dec 18, 07	Dec 24, 07	Jan 02, 08	Jan 08, 08	Jan 15, 08	Jan 22, 08	Jan 29, 08	Feb 05, 08	Feb 12, 08	Feb 19, 08	Feb 26, 08
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		882	*	875	892	874	889	902	896	888	877	953	885	995	994	990
pH	Effluent (units)	6.54	6.53	6.56	6.26	6.23	6.37	6.19	6.21	6.26	6.15	6.24	6.22	6.32	6.61	6.03
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	2	3	2	2	3	< 2	< 2	3	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	2	2	2	2	< 2	2	2	< 2	< 2	< 2	< 2	2	< 2	3	< 2
Conductivity	µmhos/cm	5	6	4	4	3	4	4	4	3	22	5	6	5	6	5
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.23	0.22	0.2	0.21	0.16	0.19	0.22	0.22	0.19	0.2	0.24	0.18	0.28	0.25	0.24
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	0.08	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	0.1	---	---	---	---	0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Aluminum (Al)	mg/L	0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Arsenic (As)	mg/L	0.0157	---	---	---	---	0.0145	---	---	---	---	0.0142	---	---	---	---
Barium (Ba)	mg/L	0.00023	---	---	---	---	0.00022	---	---	---	---	0.0002	---	---	---	---
Beryllium (Be)	mg/L	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Boron (B)	mg/L	0.055	---	---	---	---	0.036	---	---	---	---	0.003	---	---	---	---
Bismuth (Bi)	mg/L	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Cadmium (Cd)	mg/L	< 0.000003	---	---	---	---	< 0.000003	---	---	---	---	< 0.000003	---	---	---	---
Cobalt (Co)	mg/L	0.00037	---	---	---	---	0.000419	---	---	---	---	0.000344	---	---	---	---
Chromium (Cr)	mg/L	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---
Copper (Cu)	mg/L	< 0.0005	---	---	---	---	0.0006	---	---	---	---	< 0.0005	---	---	---	---
Potassium (K)	mg/L	0.25	---	---	---	---	0.23	---	---	---	---	0.24	---	---	---	---
Lithium (Li)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	0.09	---	---	---	---	0.084	---	---	---	---	0.087	---	---	---	---
Manganese (Mn)	mg/L	0.00049	---	---	---	---	0.00057	---	---	---	---	0.00056	---	---	---	---
Molydenum (Mo)	mg/L	< 0.00001	---	---	---	---	0.00003	---	---	---	---	0.00011	---	---	---	---
Sodium (Na)	mg/L	< 0.01	---	---	---	---	0.01	---	---	---	---	0.02	---	---	---	---
Nickel (Ni)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Phosphorous (P)	mg/L	0.01	---	---	---	---	0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Antimony (Sb)	mg/L	0.00036	---	---	---	---	0.00024	---	---	---	---	0.00029	---	---	---	---
Selenium (Se)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	0.00048	---	---	---	---
Strontium (Sr)	mg/L	0.0002	---	---	---	---	0.0002	---	---	---	---	0.0003	---	---	---	---
Titanium (Ti)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Thallium (Tl)	mg/L	< 0.000002	---	---	---	---	< 0.000002	---	---	---	---	0.000002	---	---	---	---
Uranium (U)	mg/L	0.000023	---	---	---	---	0.000029	---	---	---	---	0.000017	---	---	---	---
Vanadium (V)	mg/L	0.00016	---	---	---	---	0.00004	---	---	---	---	0.00022	---	---	---	---
Tungsten (W)	mg/L	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Yttrium (Y)	mg/L	0.000005	---	---	---	---	0.00001	---	---	---	---	0.000004	---	---	---	---
Zinc (Zn)	mg/L	0.001	---	---	---	---	0.002	---	---	---	---	< 0.001	---	---	---	---

Humidity Cell Results for Rock Sample 100890 (Black Rock Schist + Magnetite)

S-Total:	0.05%
S^{2-}:	0.03%
NP:	10.2 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	0.94 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Date		19-Apr-05	26-Apr-05	3-May-05	10-May-05	17-May-05	24-May-05	31-May-05	7-Jun-05	14-Jun-05	21-Jun-05	28-Jun-05	5-Jul-05	12-Jul-05	19-Jul-05	26-Jul-05	2-Aug-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		806	996	991	997	996	974	1000	987	988	993	992	984	991	981	985	982
pH	Effluent (units)	7.9	7.44	7.82	7.57	7.51	7.48	7.54	7.48	7.42	6.82	7.46	7.42	7.21	7.12	7.01	6.92
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	20	26	20	16	12	11	10	8	11	6	7	5	5	5	5	4.5
Conductivity	µmhos/cm	61	68	53	39	48	25	36	22	20	23	21	17	16	15	12	11
Sulphate (SO_4)	mg/L	< 5	3.7	2.3	1.3	< 0.5	0.8	0.9	0.8	0.8	0.8	1.0	0.8	0.7	0.9	0.7	0.6
Calcium (Ca)	mg/L	0.24	0.6	1.34	0.44	0.81	0.43	0.38	0.37	0.4	0.4	0.43	0.38	0.31	0.37	0.34	0.31
Iron (Fe)	mg/L	0.18	< 0.02	< 0.02	< 0.02	< 0.02	0.03	< 0.02	< 0.02	< 0.02	0.02	0.02	0.02	0.03	0.04	0.05	3.67
Chloride (Cl)	mg/L	< 2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	0.17	0.06	0.04	---	---	0.05	---	---	---	---	0.07	---	---	---	---	0.05
Arsenic (As)	mg/L	0.105	0.611	0.595	---	---	0.355	---	---	---	---	0.336	---	---	---	---	0.261
Barium (Ba)	mg/L	0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L	0.02	0.05	0.02	---	---	< 0.02	---	---	---	---	< 0.01	---	---	---	---	0.02
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	0.0005	0.0012	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	0.0003
Chromium (Cr)	mg/L	0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	< 0.0008	< 0.0008	< 0.0008	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	6.56	6.9	5.42			4.2100					3.8400		---	---	---	3.05
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	0.17	0.243	0.186	---	---	0.18	---	---	---	---	0.192	---	---	---	---	0.168
Manganese (Mn)	mg/L	0.0016	0.0009	< 0.0007	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	0.0007
Molydenum (Mo)	mg/L	0.0044	0.0085	0.0039	---	---	0.001	---	---	---	---	0.0004	---	---	---	---	< 0.0003
Sodium (Na)	mg/L	7.27	9.5	7.12	---	---	2.780	---	---	---	---	0.970	---	---	---	---	0.43
Nickel (Ni)	mg/L	< 0.001	0.002	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	< 0.0002	0.0003	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	0.0484	0.0474	0.0304	---	---	0.0092	---	---	---	---	0.0053	---	---	---	---	0.0038
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	0.006	0.008	0.004	---	---	0.002	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	0.0025	0.0068	0.0058	---	---	0.0048	---	---	---	---	0.0054	---	---	---	---	0.0035
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	< 0.0002	0.0013	0.0012	---	---	0.001	---	---	---	---	0.001	---	---	---	---	0.0002
Vanadium (V)	mg/L	0.0013	0.0018	0.0015	---	---	0.0013	---	---	---	---	0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	0.0003	0.0013	0.0006	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	0.0003
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	< 0.001	0.004	0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001

Humidity Cell Results for Rock Sample 100890 (Black Rock Schist + Magnetite)

S-Total:	0.05%
S^{2-}:	0.03%
NP:	10.2 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	0.94 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Date		9-Aug-05	16-Aug-05	23-Aug-05	30-Aug-05	6-Sep-05	13-Sep-05	20-Sep-05	27-Sep-05	4-Oct-05	11-Oct-05	18-Oct-05	25-Oct-05	1-Nov-05	8-Nov-05	15-Nov-05	22-Nov-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		989	988	997	991	989	975	981	969	984	985	987	981	987	983	986	980
pH	Effluent (units)	7.06	7.02	7.27	7.08	7.03	7.18	6.39	6.99	6.92	7.06	6.89	6.72	6.89	6.98	7.00	6.52
Acidity	as $CaCO_3$ (mg/L)	<2	<2	<2	<2	< 2	<2	4	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5	5	4	4	4	5	3	4	4	3	3	3	3	3	4	< 2
Conductivity	µmhos/cm	12	12	11	11	10	14	13	11	10	10	9	8	9	11	13	5
Sulphate (SO_4)	mg/L	0.6	0.6	<0.5	0.7	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Calcium (Ca)	mg/L	0.34	0.9	0.27	0.23	0.24	0.24	0.21	0.23	0.25	0.19	0.18	0.2	0.19	0.19	0.23	< 0.05
Iron (Fe)	mg/L	0.04	<0.02	0.05	0.04	0.03	0.03	0.03	0.02	< 0.02	0.02	< 0.02	< 0.02	< 0.02	0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---
Nitrate (NO_3)	as N mg/L	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	<2	---	---	---	---	< 2	---
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Silver (Ag)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Aluminum (Al)	mg/L	---	---	---	---	0.02	---	---	---	---	< 0.01	---	---	---	---	0.03	---
Arsenic (As)	mg/L	---	---	---	---	0.187	---	---	---	---	0.164	---	---	---	---	0.144	---
Barium (Ba)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Beryllium (Be)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Boron (B)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01					< 0.01	
Bismuth (Bi)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Cadmium (Cd)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Cobalt (Co)	mg/L	---	---	---	---	0.0003	---	---	---	---	0.0004	---	---	---	---	< 0.0003	---
Chromium (Cr)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Copper (Cu)	mg/L	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---
Potassium (K)	mg/L	---	---	---	---	2.45	---	---	---	---	2.2900	---	---	---	---	2.1800	---
Lithium (Li)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Magnesium (Mg)	mg/L	---	---	---	---	0.135	---	---	---	---	0.1090	---	---	---	---	0.13	---
Manganese (Mn)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---
Molydenum (Mo)	mg/L	---	---	---	---	0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Sodium (Na)	mg/L	---	---	---	---	0.24	---	---	---	---	0.15	---	---	---	---	0.1300	---
Nickel (Ni)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Phosphorous (P)	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---
Lead (Pb)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Antimony (Sb)	mg/L	---	---	---	---	0.0027	---	---	---	---	0.0022	---	---	---	---	0.0019	---
Selenium (Se)	mg/L	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Tin (Sn)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Strontium (Sr)	mg/L	---	---	---	---	0.0029	---	---	---	---	0.0019	---	---	---	---	0.0049	---
Titanium (Ti)	mg/L	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---
Thallium (Tl)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Uranium (U)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Vanadium (V)	mg/L	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---
Tungsten (W)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Yttrium (Y)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Zinc (Zn)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---

Humidity Cell Results for Rock Sample 100890 (Black Rock Schist + Magnetite)

S-Total:	0.05%
S^{2-}:	0.03%
NP:	10.2 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	0.94 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	32	33	34	35	36	37	38	39	40
Date		29-Nov-05	6-Dec-05	13-Dec-05	20-Dec-05	27-Dec-05	3-Jan-06	10-Jan-06	17-Jan-06	24-Jan-06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		983	982	992	975	964	974	982	984	987
pH	Effluent (units)	6.87	6.84	6.57	6.98	6.95	7.06	6.97	6.89	6.95
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	3	3	3	3	3	3	3	3	7
Conductivity	µmhos/cm	7	8	7	12	16	19	16	14	8
Sulphate (SO_4)	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Calcium (Ca)	mg/L	0.15	0.22	0.19	0.17	0.21	0.14	0.13	0.15	0.14
Iron (Fe)	mg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	< 2	---	---	---	---	<2
Ammonia	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	---	---	---	0.03	---	---	---	---	0.02
Arsenic (As)	mg/L	---	---	---	0.117	---	---	---	---	0.121
Barium (Ba)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L				< 0.01					< 0.01
Bismuth (Bi)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	---	---	---	< 0.0003	---	---	---	---	0.0003
Chromium (Cr)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	---	---	---	2.0100	---	---	---	---	1.8400
Lithium (Li)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	---	---	---	0.10	---	---	---	---	0.09
Manganese (Mn)	mg/L	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Molydenum (Mo)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Sodium (Na)	mg/L	---	---	---	0.1000	---	---	---	---	0.0800
Nickel (Ni)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	---	---	---	0.0012	---	---	---	---	0.0018
Selenium (Se)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	---	---	---	0.0022	---	---	---	---	0.002
Titanium (Ti)	mg/L	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Vanadium (V)	mg/L	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001

Humidity Cell Results for Rock Sample 100977 (Black Rock Schist + Magnetite)

S-Total:	0.07%
S^{2-}:	0.04%
NP:	13.8 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	1.2 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Date		19-Apr-05	26-Apr-05	3-May-05	10-May-05	17-May-05	24-May-05	31-May-05	7-Jun-05	14-Jun-05	21-Jun-05	28-Jun-05	5-Jul-05	12-Jul-05	19-Jul-05	26-Jul-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		836	966	991	931	943	917	953	971	939	989	960	989	992	987	989
pH	Effluent (units)	7.83	7.22	7.41	7.17	7.31	7.35	5.73	7.25	7.29	7.34	7.34	7.55	7.24	7.11	7.06
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2
Alkalinity	as $CaCO_3$ (mg/L)	17	22	15	11	11	9	32	8	6	8	7	8	6	7	6
Conductivity	µmhos/cm	57	57	37	26	44	20	< 1	19	15	18	16	20	16	15	13
Sulphate (SO_4)	mg/L	< 5	1.6	0.8	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5
Calcium (Ca)	mg/L	0.59	0.61	0.47	0.54	0.25	0.85	1.1	1.07	0.96	1.43	1.13	1.52	1.29	1.34	1.32
Iron (Fe)	mg/L	0.16	0.04	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<0.02	<0.02	<0.02
Chloride (Cl)	mg/L	2.9	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Aluminum (Al)	mg/L	0.13	0.05	0.04			0.03					0.03		---	---	---
Arsenic (As)	mg/L	0.088	0.204	0.126	---	---	0.044	---	---	---	---	0.018	---	---	---	---
Barium (Ba)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Boron (B)	mg/L	0.01	0.03	< 0.01	---	---	< 0.02	---	---	---	---	< 0.01	---			
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Cobalt (Co)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Copper (Cu)	mg/L	0.0009	< 0.0008	< 0.0008	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---
Potassium (K)	mg/L	8.31	6.79	5.4	---	---	3.9300	---	---	---	---	2.0900	---	---	---	---
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Magnesium (Mg)	mg/L	0.176	0.184	0.213	---	---	0.26	---	---	---	---	0.269	---	---	---	---
Manganese (Mn)	mg/L	0.0011	< 0.0007	< 0.0007	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---
Molydenum (Mo)	mg/L	0.0007	0.0014	0.0008	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Sodium (Na)	mg/L	6.65	7.04	4.28	---	---	1.000	---	---	---	---	0.160	---	---	---	---
Nickel (Ni)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Lead (Pb)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Antimony (Sb)	mg/L	0.006	0.0183	0.0123	---	---	0.0050	---	---	---	---	0.0033	---	---	---	---
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Tin (Sn)	mg/L	0.004	0.006	0.003	---	---	0.001	---	---	---	---	< 0.001	---	---	---	---
Strontium (Sr)	mg/L	0.0026	0.005	0.0059	---	---	0.0062	---	---	---	---	0.0077	---	---	---	---
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Uranium (U)	mg/L	< 0.0002	0.0018	0.0012	---	---	0.0007	---	---	---	---	0.0004	---	---	---	---
Vanadium (V)	mg/L	0.0017	0.0015	0.0012	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---
Tungsten (W)	mg/L	0.006	0.0103	0.0047	---	---	0.0005	---	---	---	---	0.0003	---	---	---	---
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Zinc (Zn)	mg/L	< 0.001	0.001	0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---

Humidity Cell Results for Rock Sample 100977 (Black Rock Schist + Magnetite)

S-Total:	0.07%
S^{2-}:	0.04%
NP:	13.8 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	1.2 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Date		2-Aug-05	9-Aug-05	16-Aug-05	23-Aug-05	30-Aug-05	6-Sep-05	13-Sep-05	20-Sep-05	27-Sep-05	4-Oct-05	11-Oct-05	18-Oct-05	25-Oct-05	1-Nov-05	8-Nov-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		986	994	990	988	979	988	991	990	977	988	983	977	985	991	989
pH	Effluent (units)	6.96	7.02	7.03	6.96	7.17	7.11	7.14	6.60	7.08	7.02	7.19	6.13	6.85	7.01	7.09
Acidity	as $CaCO_3$ (mg/L)	< 2	<2	<2	<2	<2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	7.8	6	5	6	6	5	6	5	5	5	5	4	5	5	5
Conductivity	µmhos/cm	5	13	13	13	12	11	15	14	12	13	12	12	9	12	12
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	1.31	1.29	0.31	1.27	1.26	1.14	1.31	1.16	1.2	1.13	1.07	1.04	1.06	1.04	1.07
Iron (Fe)	mg/L	8.95	<0.02	0.04	<0.02	<0.02	< 0.02	<0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	<2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Aluminum (Al)	mg/L	0.04	---	---	---	---	0.01	---	---	---	---	0.02	---	---	---	---
Arsenic (As)	mg/L	0.014	---	---	---	---	0.008	---	---	---	---	0.011	---	---	---	---
Barium (Ba)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Beryllium (Be)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Boron (B)	mg/L	0.02					< 0.01	---				< 0.01				
Bismuth (Bi)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Cadmium (Cd)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Cobalt (Co)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Chromium (Cr)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Copper (Cu)	mg/L	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---
Potassium (K)	mg/L	1.97	---	---	---	---	1.42	---	---	---	---	1.3500	---	---	---	---
Lithium (Li)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Magnesium (Mg)	mg/L	0.28	---	---	---	---	0.224	---	---	---	---	0.1960	---	---	---	---
Manganese (Mn)	mg/L	0.0009	---	---	---	---	< 0.0007	---	---	---	---	0.00	---	---	---	---
Molydenum (Mo)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Sodium (Na)	mg/L	0.07	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Nickel (Ni)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Phosphorous (P)	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Lead (Pb)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Antimony (Sb)	mg/L	0.0030	---	---	---	---	0.0019	---	---	---	---	0.0019	---	---	---	---
Selenium (Se)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Tin (Sn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Strontium (Sr)	mg/L	0.0071	---	---	---	---	0.0057	---	---	---	---	0.0046	---	---	---	---
Titanium (Ti)	mg/L	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---
Thallium (Tl)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Uranium (U)	mg/L	0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Vanadium (V)	mg/L	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---
Tungsten (W)	mg/L	0.0005	---	---	---	---	< 0.0002	---	---	---	---	0.0002	---	---	---	---
Yttrium (Y)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Zinc (Zn)	mg/L	0.0020	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---

Humidity Cell Results for Rock Sample 100977 (Black Rock Schist + Magnetite)

S-Total:	0.07%
S^{2-}:	0.04%
NP:	13.8 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	1.2 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	30	31	32	33	34	35	36	37	38	39	40
Date		15-Nov-05	22-Nov-05	29-Nov-05	6-Dec-05	13-Dec-05	20-Dec-05	27-Dec-05	3-Jan-06	10-Jan-06	17-Jan-06	24-Jan-06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		990	985	989	987	989	991	981	990	991	990	988
pH	Effluent (units)	6.51	7.06	6.94	6.87	7.00	7.13	7.08	7.24	7.30	7.14	7.06
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5	5	5	5	5	4	5	4	5	4	4
Conductivity	µmhos/cm	17	11	10	10	10	15	18	22	15	15	10
Sulphate (SO_4)	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Calcium (Ca)	mg/L	1	0.99	1	1.01	1.04	0.11	1.24	0.82	1.07	0.87	0.85
Iron (Fe)	mg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	<2
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	0.02	---	---	---	---	0.03	---	---	---	---	0.03
Arsenic (As)	mg/L	0.01	---	---	---	---	0.01	---	---	---	---	0.01
Barium (Ba)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L	< 0.01					< 0.01					< 0.01
Bismuth (Bi)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Chromium (Cr)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	1.1300	---	---	---	---	2.6500	---	---	---	---	1.0000
Lithium (Li)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	0.18	---	---	---	---	0.09	---	---	---	---	0.15
Manganese (Mn)	mg/L	< 0.0007	---	---	---	---	0.0008	---	---	---	---	0.0008
Molydenum (Mo)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Sodium (Na)	mg/L	< 0.05	---	---	---	---	0.1700	---	---	---	---	< 0.05
Nickel (Ni)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	0.0017	---	---	---	---	0.0010	---	---	---	---	0.0014
Selenium (Se)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	0.0073	---	---	---	---	0.0016	---	---	---	---	0.0036
Titanium (Ti)	mg/L	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Vanadium (V)	mg/L	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	0.0002	---	---	---	---	< 0.0002	---	---	---	---	0.0002
Yttrium (Y)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001

Humidity Cell Results for Rock Sample 100802 (Black Rock Schist + Magnetite)

S-Total:	0.02%
S^{2-}:	<0.01%
NP:	28.2 t CaCO3/1000 t
CaNP:	4.2 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Date		19-Apr-05	26-Apr-05	3-May-05	10-May-05	17-May-05	24-May-05	31-May-05	7-Jun-05	14-Jun-05	21-Jun-05	28-Jun-05	5-Jul-05	12-Jul-05	19-Jul-05	26-Jul-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		821	970	984	942	945	944	958	958	959	980	961	952	979	965	989
pH	Effluent (units)	7.4	7.08	7.37	7.65	7.37	7.37	7.54	7.27	7.08	7.31	7.54	7.37	7.20	5.74	7.09
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2
Alkalinity	as $CaCO_3$ (mg/L)	14	15	14	11	11	9	12	8	7	7	11	7	6	<2	7
Conductivity	µmhos/cm	41	41	39	43	44	21	41	20	26	17	26	18	16	1	14
Sulphate (SO_4)	mg/L	< 5	1.1	1	0.6	1.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5
Calcium (Ca)	mg/L	0.37	0.46	0.82	0.24	0.34	0.2	0.32	0.24	0.2	0.3	0.43	0.3	0.34	0.26	0.38
Iron (Fe)	mg/L	0.08	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<0.02	0.02	<0.02
Chloride (Cl)	mg/L	< 2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Aluminum (Al)	mg/L	0.07	0.03	0.03	---	---	0.02	---	---	---	---	0.02	---	---	---	---
Arsenic (As)	mg/L	< 0.005	< 0.005	0.006			< 0.005					< 0.005		---	---	---
Barium (Ba)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Boron (B)	mg/L	0.01	0.03	0.01	---	---	< 0.02	---	---	---	---	< 0.01	---			
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Cobalt (Co)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Copper (Cu)	mg/L	0.001	0.0012	< 0.0008	---	---	< 0.0008	---	---	---	---	0.0011	---	---	---	---
Potassium (K)	mg/L	5.82	5.82	5.79	---	---	3.7500	---	---	---	---	4.5900	---	---	---	---
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Magnesium (Mg)	mg/L	0.192	0.163	0.173	---	---	0.09	---	---	---	---	0.139	---	---	---	---
Manganese (Mn)	mg/L	0.0009	0.001	< 0.0007	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---
Molydenum (Mo)	mg/L	< 0.0003	0.0006	0.0005	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Sodium (Na)	mg/L	4.99	4.64	4.68	---	---	2.340	---	---	---	---	2.010	---	---	---	---
Nickel (Ni)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Lead (Pb)	mg/L	0.0003	0.0003	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Antimony (Sb)	mg/L	0.0022	0.0082	0.0092	---	---	0.0044	---	---	---	---	0.0064	---	---	---	---
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Tin (Sn)	mg/L	0.003	0.004	0.003	---	---	0.001	---	---	---	---	< 0.001	---	---	---	---
Strontium (Sr)	mg/L	0.0042	0.0057	0.0068	---	---	0.0028	---	---	---	---	0.0057	---	---	---	---
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Uranium (U)	mg/L	< 0.0002	0.0002	0.0002	---	---	0.0003	---	---	---	---	0.0006	---	---	---	---
Vanadium (V)	mg/L	0.0012	0.0015	0.0019	---	---	0.0015	---	---	---	---	0.0014	---	---	---	---
Tungsten (W)	mg/L	0.0007	0.0021	0.0017	---	---	0.0003	---	---	---	---	0.0005	---	---	---	---
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Zinc (Zn)	mg/L	< 0.001	0.002	< 0.001	---	---	< 0.001	---	---	---	---	0.0010	---	---	---	---

Humidity Cell Results for Rock Sample 100802 (Black Rock Schist + Magnetite)

S-Total:	0.02%
S^{2-}:	<0.01%
NP:	28.2 t CaCO3/1000 t
CaNP:	4.2 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Date		2-Aug-05	9-Aug-05	16-Aug-05	23-Aug-05	30-Aug-05	6-Sep-05	13-Sep-05	20-Sep-05	27-Sep-05	4-Oct-05	11-Oct-05	18-Oct-05	25-Oct-05	1-Nov-05	8-Nov-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		899	993	970	955	945	967	962	956	964	969	947	964	964	944	964
pH	Effluent (units)	6.97	6.97	7.03	6.87	7.13	7.11	7.15	6.46	6.97	6.90	7.12	6.75	6.75	6.90	6.91
Acidity	as $CaCO_3$ (mg/L)	< 2	<2	<2	<2	<2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	7.6	11	6	4	5	5	6	4	4	3	5	5	5	4	4
Conductivity	µmhos/cm	13	13	6	10	11	11	17	12	11	12	11	10	10	10	10
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.31	0.33	1.29	0.19	0.21	0.3	0.32	0.21	0.17	0.21	0.2	0.31	0.31	0.27	0.15
Iron (Fe)	mg/L	1.54	<0.02	<0.02	<0.02	<0.02	< 0.02	<0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	<2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Aluminum (Al)	mg/L	0.02	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Arsenic (As)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Barium (Ba)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Beryllium (Be)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Boron (B)	mg/L	< 0.01					< 0.01	---				< 0.01				
Bismuth (Bi)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Cadmium (Cd)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Cobalt (Co)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Chromium (Cr)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Copper (Cu)	mg/L	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---
Potassium (K)	mg/L	3.53	---	---	---	---	2.79	---	---	---	---	2.7200	---	---	---	---
Lithium (Li)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Magnesium (Mg)	mg/L	0.114	---	---	---	---	0.105	---	---	---	---	0.0790	---	---	---	---
Manganese (Mn)	mg/L	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---
Molydenum (Mo)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Sodium (Na)	mg/L	0.93	---	---	---	---	0.48	---	---	---	---	0.31	---	---	---	---
Nickel (Ni)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Phosphorous (P)	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Lead (Pb)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Antimony (Sb)	mg/L	0.0040	---	---	---	---	0.003	---	---	---	---	0.0025	---	---	---	---
Selenium (Se)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Tin (Sn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Strontium (Sr)	mg/L	0.004	---	---	---	---	0.004	---	---	---	---	0.0023	---	---	---	---
Titanium (Ti)	mg/L	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---
Thallium (Tl)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Uranium (U)	mg/L	0.0004	---	---	---	---	0.0004	---	---	---	---	0.0003	---	---	---	---
Vanadium (V)	mg/L	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---
Tungsten (W)	mg/L	0.0004	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Yttrium (Y)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Zinc (Zn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---

Humidity Cell Results for Rock Sample 100802 (Black Rock Schist + Magnetite)

S-Total:	0.02%
S^{2-}:	<0.01%
NP:	28.2 t CaCO3/1000 t
CaNP:	4.2 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	30	31	32	33	34	35	36	37	38	39	40
Date		15-Nov-05	22-Nov-05	29-Nov-05	6-Dec-05	13-Dec-05	20-Dec-05	27-Dec-05	3-Jan-06	10-Jan-06	17-Jan-06	24-Jan-06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		870	967	923	954	990	924	936	949	961	920	942
pH	Effluent (units)	7.00	6.95	6.88	6.80	6.89	7.01	7.14	7.19	6.99	6.94	6.97
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	4	3	3	4	4	4	4	4	4	3	4
Conductivity	µmhos/cm	12	10	7	9	11	14	20	21	10	15	10
Sulphate (SO_4)	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Calcium (Ca)	mg/L	0.18	0.14	0.12	0.23	0.39	0.45	0.13	0.15	0.16	0.13	0.16
Iron (Fe)	mg/L	0.05	< 0.02	0.04	0.02	0.06	< 0.02	0.03	0.03	0.02	0.03	0.03
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	<2
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	0.03	---	---	---	---	0.02	---	---	---	---	0.02
Arsenic (As)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Barium (Ba)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L	< 0.01					< 0.01					< 0.01
Bismuth (Bi)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Chromium (Cr)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	2.3400	---	---	---	---	1.1000	---	---	---	---	1.9900
Lithium (Li)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	0.12	---	---	---	---	0.16	---	---	---	---	0.07
Manganese (Mn)	mg/L	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Molydenum (Mo)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Sodium (Na)	mg/L	0.2500	---	---	---	---	< 0.05	---	---	---	---	0.1300
Nickel (Ni)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	0.0021	---	---	---	---	0.0013	---	---	---	---	0.0017
Selenium (Se)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	0.0042	---	---	---	---	0.0024	---	---	---	---	0.002
Titanium (Ti)	mg/L	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	0.0004	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Vanadium (V)	mg/L	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Date		April 19/05	April 26/05	May 03/05	May 10/05	May 17/05	May 24/05	May 31/05	June 7/05	June 14/05	June 21/05	June 28/05	July 5/05	July 12/05	July 19/05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		834	985	977	947	973	934	922	969	938	979	940	970	994	962
pH	Effluent (units)	7.58	7.18	7.36	7.25	7.17	7.14	8.55	7.11	7.14	7.18	7.10	7.28	7.00	6.91
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	<2	<2
Alkalinity	as $CaCO_3$ (mg/L)	22	15	10	6	7	6	15	6	5	5	5	5	4	4
Conductivity	µmhos/cm	78	46	34	23	36	17	44	20	16	16	15	16	15	14
Sulphate (SO_4)	mg/L	< 5	1.6	2.2	1.7	2	1.5	1.4	1.4	1.4	1.2	1.2	1.3	1.0	1.5
Calcium (Ca)	mg/L	0.69	0.57	0.54	0.53	0.98	0.62	0.77	0.94	0.88	0.99	0.88	0.99	0.98	0.99
Iron (Fe)	mg/L	0.15	< 0.02	< 0.02	< 0.02	< 0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<0.02	<0.02
Chloride (Cl)	mg/L	2.5	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Aluminum (Al)	mg/L	0.13	0.04	0.02	---	---	0.04	---	---	---	---	0.02	---	---	---
Arsenic (As)	mg/L	0.191	0.111	0.096	---	---	0.048	---	---	---	---	0.025	---	---	---
Barium (Ba)	mg/L	< 0.001	< 0.001	< 0.001			< 0.001					< 0.001		---	---
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---
Boron (B)	mg/L	0.05	0.04	0.02	---	---	< 0.02	---	---	---	---	< 0.01	---		
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Cobalt (Co)	mg/L	0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---
Copper (Cu)	mg/L	0.0011	< 0.0008	< 0.0008	---	---	0.1120	---	---	---	---	< 0.0008	---	---	---
Potassium (K)	mg/L	10.2	6.2	5.46	---	---	3.1600	---	---	---	---	1.8500	---	---	---
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---
Magnesium (Mg)	mg/L	0.208	0.221	0.268	---	---	0.28	---	---	---	---	0.324	---	---	---
Manganese (Mn)	mg/L	0.0013	0.001	0.0009	---	---	0.0009	---	---	---	---	0.0012	---	---	---
Molydenum (Mo)	mg/L	0.0009	0.0008	0.0006	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Sodium (Na)	mg/L	9.4	4.97	3.22	---	---	0.650	---	---	---	---	0.140	---	---	---
Nickel (Ni)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---
Lead (Pb)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	0.025	---	---	---	---	0.000	---	---	---
Antimony (Sb)	mg/L	0.0257	0.0249	0.0219	---	---	0.0079	---	---	---	---	0.0067	---	---	---
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---
Tin (Sn)	mg/L	0.011	0.005	0.003	---	---	0.001	---	---	---	---	< 0.001	---	---	---
Strontium (Sr)	mg/L	0.0042	0.0046	0.0057	---	---	0.0047	---	---	---	---	0.0056	---	---	---
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---
Uranium (U)	mg/L	0.0003	0.0012	0.0013	---	---	0.0008	---	---	---	---	0.0007	---	---	---
Vanadium (V)	mg/L	< 0.0009	< 0.0009	< 0.0009	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---
Tungsten (W)	mg/L	0.0077	0.0032	0.0015	---	---	0.0002	---	---	---	---	0.0002	---	---	---
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Zinc (Zn)	mg/L	< 0.001	< 0.001	< 0.001	---	---	0.1090	---	---	---	---	< 0.001	---	---	---

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Date		July 26/05	Aug 2/05	Aug 9/05	Aug 16/05	Aug 23/05	Aug 30/05	Sep 6/05	Sep 13/05	Sep 20/ 05	Sep 27/05	Oct 04/05	Oct 11/05	Oct18/05	Oct25/05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		991	970	982	950	967	951	983	965	960	938	980	963	927	968
pH	Effluent (units)	6.96	6.84	6.91	6.88	6.90	6.96	6.96	6.95	6.39	6.87	6.81	6.25	6.69	6.65
Acidity	as $CaCO_3$ (mg/L)	<2	< 2	<2	<2	<2	<2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	6	3.5	4	5	4	3	3	3	3	3	3	3	3	3
Conductivity	µmhos/cm	12	11	11	12	11	11	10	13	12	10	11	11	9	8
Sulphate (SO_4)	mg/L	1.2	1.0	1.0	1.1	0.8	0.9	0.8	0.7	0.9	0.9	0.7	0.8	0.8	0.8
Calcium (Ca)	mg/L	1.04	0.91	0.84	0.29	0.87	0.86	0.84	0.8	0.74	0.74	0.78	0.74	0.65	0.7
Iron (Fe)	mg/L	<0.02	6.08	<0.02	<0.02	<0.02	<0.02	< 0.02	<0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---
Nitrite (NO_2)	as N mg/L	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---
Nitrate (NO_3)	as N mg/L	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	< 2	---	---	---	---	< 2	---	---	---	---	<2	---	---
Ammonia	mg/L	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---
Mercury (Hg)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Silver (Ag)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Aluminum (Al)	mg/L	---	0.02	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---
Arsenic (As)	mg/L	---	0.025	---	---	---	---	0.02	---	---	---	---	0.022	---	---
Barium (Ba)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Beryllium (Be)	mg/L	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---
Boron (B)	mg/L		0.01					< 0.01					< 0.01		
Bismuth (Bi)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Cadmium (Cd)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Cobalt (Co)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Chromium (Cr)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Copper (Cu)	mg/L	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---
Potassium (K)	mg/L	---	1.79	---	---	---	---	1.33	---	---	---	---	1.1800	---	---
Lithium (Li)	mg/L	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---
Magnesium (Mg)	mg/L	---	0.322	---	---	---	---	0.285	---	---	---	---	0.2370	---	---
Manganese (Mn)	mg/L	---	0.0015	---	---	---	---	0.0014	---	---	---	---	0.00	---	---
Molydenum (Mo)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Sodium (Na)	mg/L	---	0.06	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---
Nickel (Ni)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Phosphorous (P)	mg/L	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---
Lead (Pb)	mg/L	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Antimony (Sb)	mg/L	---	0.0055	---	---	---	---	0.0041	---	---	---	---	0.0037	---	---
Selenium (Se)	mg/L	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---
Tin (Sn)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Strontium (Sr)	mg/L	---	0.005	---	---	---	---	0.0043	---	---	---	---	0.0031	---	---
Titanium (Ti)	mg/L	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---
Thallium (Tl)	mg/L	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Uranium (U)	mg/L	---	0.0004	---	---	---	---	0.0003	---	---	---	---	0.0002	---	---
Vanadium (V)	mg/L	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---
Tungsten (W)	mg/L	---	0.0004	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Yttrium (Y)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Zinc (Zn)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Date		Nov1 01/05	Nov 08/05	Nov 15/05	Nov22/05	Nov29/05	Dec06/05	Dec13/05	Dec 20/05	Dec 27/05	Jan 03/06	Jan 10/06	Jan 17/06	Jan 24/06	Jan 31/06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		968	942	879	948	942	951	993	922	940	956	942	929	913	914
pH	Effluent (units)	6.41	6.76	6.72	6.78	6.71	6.64	6.73	6.70	6.61	6.91	6.71	6.69	6.67	6.69
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	3	2	2	3	2	2	2	2	3	2	2	< 2	< 2	3
Conductivity	µmhos/cm	9	10	10	9	6	7	7	12	15	21	9	14	9	12
Sulphate (SO_4)	mg/L	0.8	0.7	0.7	0.6	0.6	1.0	0.6	0.7	0.7	0.8	0.6	0.6	0.7	0.8
Calcium (Ca)	mg/L	0.7	0.63	0.46	0.5	0.48	0.58	0.64	2.7	0.51	0.47	0.47	0.44	0.42	0.57
Iron (Fe)	mg/L	< 0.02	< 0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---
Nitrite (NO_2)	as N mg/L	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---
Nitrate (NO_3)	as N mg/L	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	< 2	---	---	---	---	< 2	---	---	---	---	<2	---
Ammonia	mg/L	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---
Mercury (Hg)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Silver (Ag)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Aluminum (Al)	mg/L	---	---	0.03	---	---	---	---	0.10	---	---	---	---	0.02	---
Arsenic (As)	mg/L	---	---	0.027	---	---	---	---	0.019	---	---	---	---	0.017	---
Barium (Ba)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Beryllium (Be)	mg/L	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Boron (B)	mg/L			< 0.01					< 0.01					< 0.01	---
Bismuth (Bi)	mg/L	---	---	0.0005	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Cadmium (Cd)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Cobalt (Co)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Chromium (Cr)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Copper (Cu)	mg/L	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---
Potassium (K)	mg/L	---	---	1.0200	---	---	---	---	0.4300	---	---	---	---	0.81	---
Lithium (Li)	mg/L	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Magnesium (Mg)	mg/L	---	---	0.18	---	---	---	---	0.05	---	---	---	---	0.138	---
Manganese (Mn)	mg/L	---	---	0.0014	---	---	---	---	0.0016	---	---	---	---	0.0008	---
Molydenum (Mo)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Sodium (Na)	mg/L	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---
Nickel (Ni)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Phosphorous (P)	mg/L	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---
Lead (Pb)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Antimony (Sb)	mg/L	---	---	0.0028	---	---	---	---	0.0018	---	---	---	---	0.0022	---
Selenium (Se)	mg/L	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Tin (Sn)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Strontium (Sr)	mg/L	---	---	0.0035	---	---	---	---	0.0034	---	---	---	---	0.002	---
Titanium (Ti)	mg/L	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---
Thallium (Tl)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Uranium (U)	mg/L	---	---	0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Vanadium (V)	mg/L	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---
Tungsten (W)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Yttrium (Y)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Zinc (Zn)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	42	43	44	45	46	47	48	49	50	51	52	53	54
Date		Feb 07/06	Feb 14/06	Feb 21/06	Feb 28/06	Mar 07/06	Mar 14/06	Mar 21/06	Mar 28/06.	Apr 04/06	Apr 11/06	Apr 18/06	Apr 25/06	May 02/06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		942	954	912	919	896	979	907	913	905	896	892	934	897
pH	Effluent (units)	6.60	6.60	6.72	6.29	6.83	6.67	6.94	6.52	6.58	6.55	6.77	6.78	6.88
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	< 2	2	2	2	3	2	4	2	2	< 2	3	3	4
Conductivity	µmhos/cm	7	6	6	7	9	8	9	10	8	5	9	12	12
Sulphate (SO_4)	mg/L	0.6	0.6	0.8	0.6	0.9	0.5	0.6	0.6	< 0.5	0.6	< 0.5	0.5	< 0.5
Calcium (Ca)	mg/L	0.4	0.42	0.46	0.35	0.46	0.45	0.42	0.36	0.28	0.31	0.39	0.36	0.38
Iron (Fe)	mg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.00003	---	---	---	---
Aluminum (Al)	mg/L	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Arsenic (As)	mg/L	---	---	---	0.012	---	---	---	---	0.0185	---	---	---	---
Barium (Ba)	mg/L	---	---	---	< 0.001	---	---	---	---	0.00015	---	---	---	---
Beryllium (Be)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.00004	---	---	---	---
Boron (B)	mg/L	---	---	---	< 0.07	---	---	---	---	< 0.003	---	---	---	---
Bismuth (Bi)	mg/L	---	---	---	< 0.0003	---	---	---	---	0.00008	---	---	---	---
Cadmium (Cd)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.00006	---	---	---	---
Cobalt (Co)	mg/L	---	---	---	< 0.0003	---	---	---	---	0.0001	---	---	---	---
Chromium (Cr)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.0003	---	---	---	---
Copper (Cu)	mg/L	---	---	---	< 0.0008	---	---	---	---	0.0006	---	---	---	---
Potassium (K)	mg/L	---	---	---	0.92	---	---	---	---	0.77	---	---	---	---
Lithium (Li)	mg/L	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	---	---	---	0.127	---	---	---	---	0.108	---	---	---	---
Manganese (Mn)	mg/L	---	---	---	0.0017	---	---	---	---	0.00062	---	---	---	---
Molydenum (Mo)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.00005	---	---	---	---
Sodium (Na)	mg/L	---	---	---	< 0.03	---	---	---	---	0.02	---	---	---	---
Nickel (Ni)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.0007	---	---	---	---
Phosphorous (P)	mg/L	---	---	---	< 0.01	---	---	---	---	0.04	---	---	---	---
Lead (Pb)	mg/L	---	---	---	0.0003	---	---	---	---	0.00003	---	---	---	---
Antimony (Sb)	mg/L	---	---	---	0.0021	---	---	---	---	0.0025	---	---	---	---
Selenium (Se)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.003	---	---	---	---
Tin (Sn)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.0003	---	---	---	---
Strontium (Sr)	mg/L	---	---	---	0.0017	---	---	---	---	0.0013	---	---	---	---
Titanium (Ti)	mg/L	---	---	---	< 0.003	---	---	---	---	< 0.0002	---	---	---	---
Thallium (Tl)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0001	---	---	---	---
Uranium (U)	mg/L	---	---	---	< 0.0002	---	---	---	---	0.0001	---	---	---	---
Vanadium (V)	mg/L	---	---	---	< 0.0009	---	---	---	---	0.00007	---	---	---	---
Tungsten (W)	mg/L	---	---	---	< 0.0002	---	---	---	---	0.00007	---	---	---	---
Yttrium (Y)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.000005	---	---	---	---
Zinc (Zn)	mg/L	---	---	---	0.003	---	---	---	---	0.0009	---	---	---	---

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	55	56	57	58	59	60	61	62	63	64	65	66	67	68
Date		May 09/06	May 16/06	May 23/06	May 30/06	Jun 6/06	Jun 13/06	Jun 20, 06	Jun 27, 06	Jul 04, 06	Jul 11, 06	Jul 18, 06	Jul 25, 06	Aug 1, 06	Aug 8, 06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		928	912	968	909	885	950	925	929	883	1012	988	904	896	902
pH	Effluent (units)	6.48	6.63	6.51	6.62	6.79	6.72	6.95	6.90	6.11	6.46	6.29	6.23	6.39	6.52
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	3	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	2	3	2	2	3	2	4	26	2	2	< 2	< 2	< 2	2
Conductivity	µmhos/cm	46	131	47	11	7	6	7	10	9	5	3	4	5	5
Sulphate (SO_4)	mg/L	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Calcium (Ca)	mg/L	0.32	0.51	0.37	0.32	0.46	0.3	0.35	0.59	0.26	0.31	0.18	0.18	0.21	0.2
Iron (Fe)	mg/L	< 0.02	< 0.01	< 0.01	0.02	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	0.02	< 0.02	< 0.01	< 0.07	< 0.01
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	0.1	---	---	---	---	< 0.1	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Silver (Ag)	mg/L	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---
Aluminum (Al)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---
Arsenic (As)	mg/L	0.0123	---	---	---	---	0.0128	---	---	---	---	0.0084	---	---	---
Barium (Ba)	mg/L	0.00027	---	---	---	---	0.00013	---	---	---	---	0.00011	---	---	---
Beryllium (Be)	mg/L	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---
Boron (B)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	0.006	---	---	---
Bismuth (Bi)	mg/L	0.00002	---	---	---	---	0.00005	---	---	---	---	0.00011	---	---	---
Cadmium (Cd)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---
Cobalt (Co)	mg/L	0.0002	---	---	---	---	0.00009	---	---	---	---	0.000048	---	---	---
Chromium (Cr)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Copper (Cu)	mg/L	0.003	---	---	---	---	0.0006	---	---	---	---	0.0002	---	---	---
Potassium (K)	mg/L	0.83	---	---	---	---	0.61	---	---	---	---	0.45	---	---	---
Lithium (Li)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---
Magnesium (Mg)	mg/L	0.135	---	---	---	---	0.12	---	---	---	---	0.062	---	---	---
Manganese (Mn)	mg/L	0.001	---	---	---	---	0.00082	---	---	---	---	0.00062	---	---	---
Molydenum (Mo)	mg/L	0.00037	---	---	---	---	0.00014	---	---	---	---	< 0.00005	---	---	---
Sodium (Na)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---
Nickel (Ni)	mg/L	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---
Phosphorous (P)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	0.02	---	---	---
Lead (Pb)	mg/L	0.00005	---	---	---	---	0.00003	---	---	---	---	< 0.00002	---	---	---
Antimony (Sb)	mg/L	0.0021	---	---	---	---	0.0017	---	---	---	---	0.0008	---	---	---
Selenium (Se)	mg/L	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---
Tin (Sn)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Strontium (Sr)	mg/L	0.0015	---	---	---	---	0.0006	---	---	---	---	0.0007	---	---	---
Titanium (Ti)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---
Thallium (Tl)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Uranium (U)	mg/L	0.00009	---	---	---	---	0.00005	---	---	---	---	< 0.00002	---	---	---
Vanadium (V)	mg/L	< 0.00006	---	---	---	---	0.00008	---	---	---	---	< 0.00006	---	---	---
Tungsten (W)	mg/L	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	0.00009	---	---	---
Yttrium (Y)	mg/L	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---
Zinc (Zn)	mg/L	0.003	---	---	---	---	0.0014	---	---	---	---	0.0006	---	---	---

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	69	70	71	72	73	74	75	76	77	78	79	80	81	82
Date		Aug 15, 06	Aug 22, 06	Aug 29, 06	Sep 05, 06	Sep 12, 06	Sep 19, 06	Sep 26, 06	Oct 03, 06	Oct 10, 06	Oct 17, 06	Oct 24, 06	Oct 31, 06	Nov 7, 06	Nov 14, 06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		904	908	887	903	N/A	899	903	941	874	892	902	905	881	914
pH	Effluent (units)	6.65	6.35	6.40	6.53	6.78	8.80	6.60	6.43	6.72	6.67	6.40	6.34	6.30	6.06
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2
Alkalinity	as $CaCO_3$ (mg/L)	2	< 2	< 2	2	3	4	2	< 2	4	2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	6	5	4	5	6	17	12	12	10	7	6	5	11	8
Sulphate (SO_4)	mg/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	0.6
Calcium (Ca)	mg/L	0.2	0.26	0.21	0.22	0.39	0.21	0.18	0.19	0.37	0.35	0.19	1.84	0.23	0.22
Iron (Fe)	mg/L	0.03	< 0.02	< 0.01	< 0.01	0.01	< 0.01	< 0.02	< 0.01	0.01	0.03	< 0.01	< 0.02	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---
Nitrite (NO_2)	as N mg/L	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---
Nitrate (NO_3)	as N mg/L	---	0.09	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---
Ammonia	mg/L	---	< 0.1	---	---	---	---	0.1	---	---	---	---	< 0.1	---	---
Mercury (Hg)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Silver (Ag)	mg/L	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---
Aluminum (Al)	mg/L	---	< 0.01	---	---	---	---	0.02	---	---	---	---	0.03	---	---
Arsenic (As)	mg/L	---	0.0081	---	---	---	---	0.0097	---	---	---	---	0.0076	---	---
Barium (Ba)	mg/L	---	0.00014	---	---	---	---	0.00017	---	---	---	---	0.00015	---	---
Beryllium (Be)	mg/L	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---
Boron (B)	mg/L	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---
Bismuth (Bi)	mg/L	---	0.00003	---	---	---	---	0.00005	---	---	---	---	< 0.00002	---	---
Cadmium (Cd)	mg/L	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---
Cobalt (Co)	mg/L	---	0.00007	---	---	---	---	0.000065	---	---	---	---	0.0001	---	---
Chromium (Cr)	mg/L	---	< 0.0003	---	---	---	---	0.0011	---	---	---	---	< 0.0003	---	---
Copper (Cu)	mg/L	---	0.0002	---	---	---	---	0.0002	---	---	---	---	0.001	---	---
Potassium (K)	mg/L	---	0.62	---	---	---	---	0.55	---	---	---	---	0.09	---	---
Lithium (Li)	mg/L	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---
Magnesium (Mg)	mg/L	---	0.108	---	---	---	---	0.089	---	---	---	---	0.04	---	---
Manganese (Mn)	mg/L	---	0.00059	---	---	---	---	0.00051	---	---	---	---	0.00036	---	---
Molydenum (Mo)	mg/L	---	< 0.00005	---	---	---	---	0.00012	---	---	---	---	< 0.00005	---	---
Sodium (Na)	mg/L	---	< 0.01	---	---	---	---	< 0.04	---	---	---	---	< 0.01	---	---
Nickel (Ni)	mg/L	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---
Phosphorous (P)	mg/L	---	< 0.01	---	---	---	---	0.05	---	---	---	---	< 0.01	---	---
Lead (Pb)	mg/L	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	0.00004	---	---
Antimony (Sb)	mg/L	---	0.0015	---	---	---	---	0.0016	---	---	---	---	0.0015	---	---
Selenium (Se)	mg/L	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---
Tin (Sn)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Strontium (Sr)	mg/L	---	0.0011	---	---	---	---	0.0009	---	---	---	---	0.0014	---	---
Titanium (Ti)	mg/L	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Thallium (Tl)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Uranium (U)	mg/L	---	< 0.00002	---	---	---	---	0.00003	---	---	---	---	< 0.00002	---	---
Vanadium (V)	mg/L	---	0.00007	---	---	---	---	0.00007	---	---	---	---	< 0.00006	---	---
Tungsten (W)	mg/L	---	0.00008	---	---	---	---	0.00011	---	---	---	---	0.00018	---	---
Yttrium (Y)	mg/L	---	< 0.000005	---	---	---	---	0.000008	---	---	---	---	0.000011	---	---
Zinc (Zn)	mg/L	---	0.0009	---	---	---	---	0.0007	---	---	---	---	0.0019	---	---

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	83	84	85	86	87	88	89	90	91	92	93	94	95
Date		Nov 21, 06	Nov 28, 06	Dec 05, 06	Dec 12, 06	Dec 19, 06	Dec 27, 06	Jan 02, 07	Jan 9, 07	Jan 16, 07	Jan 23, 07	Jan 30, 07	Feb 6, 07	Feb 13, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		894	932	908	907	903	911	834	909	904	919	910	908	917
pH	Effluent (units)	6.68	6.79	6.41	6.06	6.42	6.57	6.29	6.85	6.45	6.36	6.42	6.30	6.37
Acidity	as $CaCO_3$ (mg/L)	< 2	3	< 2	< 2	< 2	< 2	2	4	< 2	< 2	2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	4	3	< 2	2	2	2	< 2	2	2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	12	8	4	5	6	5	4	15	11	8	7	7	13
Sulphate (SO_4)	mg/L	0.7	0.6	< 0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5	0.6	0.8	0.7	0.6	0.6
Calcium (Ca)	mg/L	0.64	0.54	0.19	0.2	0.25	0.31	0.15	0.22	0.22	0.24	0.21	0.22	0.27
Iron (Fe)	mg/L	< 0.01	0.05	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02
Chloride (Cl)	mg/L	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003
Aluminum (Al)	mg/L	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Arsenic (As)	mg/L	---	---	0.0095	---	---	---	---	0.0102	---	---	---	---	0.011
Barium (Ba)	mg/L	---	---	0.00008	---	---	---	---	0.00008	---	---	---	---	0.0001
Beryllium (Be)	mg/L	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004
Boron (B)	mg/L	---	---	< 0.007	---	---	---	---	0.002	---	---	---	---	< 0.002
Bismuth (Bi)	mg/L	---	---	0.00003	---	---	---	---	< 0.00002	---	---	---	---	0.00008
Cadmium (Cd)	mg/L	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006
Cobalt (Co)	mg/L	---	---	0.000051	---	---	---	---	0.000097	---	---	---	---	0.000028
Chromium (Cr)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Copper (Cu)	mg/L	---	---	0.0003	---	---	---	---	0.0002	---	---	---	---	0.0002
Potassium (K)	mg/L	---	---	0.63	---	---	---	---	0.76	---	---	---	---	0.76
Lithium (Li)	mg/L	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	0.067	---	---	---	---	0.09	---	---	---	---	0.113
Manganese (Mn)	mg/L	---	---	0.00058	---	---	---	---	0.0006	---	---	---	---	0.00058
Molydenum (Mo)	mg/L	---	---	0.00007	---	---	---	---	< 0.00005	---	---	---	---	0.00008
Sodium (Na)	mg/L	---	---	< 0.04	---	---	---	---	0.01	---	---	---	---	0.03
Nickel (Ni)	mg/L	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Phosphorous (P)	mg/L	---	---	0.02	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Lead (Pb)	mg/L	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	0.00011
Antimony (Sb)	mg/L	---	---	0.001	---	---	---	---	0.0012	---	---	---	---	0.0011
Selenium (Se)	mg/L	---	---	< 0.003	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Tin (Sn)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Strontium (Sr)	mg/L	---	---	0.0005	---	---	---	---	0.0009	---	---	---	---	0.0011
Titanium (Ti)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Thallium (Tl)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Uranium (U)	mg/L	---	---	0.00002	---	---	---	---	0.00002	---	---	---	---	< 0.00002
Vanadium (V)	mg/L	---	---	< 0.00006	---	---	---	---	0.00007	---	---	---	---	< 0.00006
Tungsten (W)	mg/L	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	0.00053
Yttrium (Y)	mg/L	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005
Zinc (Zn)	mg/L	---	---	0.0004	---	---	---	---	0.0006	---	---	---	---	0.0004

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	96	97	98	99	100	101	102	103	104	105	106	107	108	109
Date		Feb 20, 07	Feb 27, 07	Mar 06, 07	Mar 13,07	Mar 20, 07	Mar 27, 07	Apr 03, 07	Apr 10, 07	Apr 17, 07	Apr 24, 07	May 01, 07	May 08, 07	May 15, 07	May 22, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		910	905	926	914	978	974	986	952	936	899	959	934	946	951
pH	Effluent (units)	6.41	6.38	6.37	6.43	9.25	6.53	6.48	6.29	6.15	6.32	6.43	6.29	6.29	4.44
Acidity	as $CaCO_3$ (mg/L)	3	3	< 2	4	< 2	< 2	< 2	2	4	2	< 2	2	< 2	52
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	7	< 2	2	< 2	< 2	< 2	2	< 2	< 2	35
Conductivity	µmhos/cm	6	5	5	6	36	5	8	6	10	6	7	5	6	5
Sulphate (SO_4)	mg/L	0.6	0.5	0.5	0.6	< 0.5	0.5	0.7	< 0.5	0.6	0.6	< 0.5	< 0.5	0.5	< 0.5
Calcium (Ca)	mg/L	0.23	0.24	0.22	0.21	0.28	0.31	0.46	0.23	0.23	0.24	0.25	0.2	0.25	0.19
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	---	0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	6	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Aluminum (Al)	mg/L	---	---	---	---	0.02	---	---	---	---	< 0.01	---	---	---	---
Arsenic (As)	mg/L	---	---	---	---	0.0092	---	---	---	---	0.0118	---	---	---	---
Barium (Ba)	mg/L	---	---	---	---	0.00014	---	---	---	---	0.00012	---	---	---	---
Beryllium (Be)	mg/L	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---
Boron (B)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	0.00004	---	---	---	---
Cadmium (Cd)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---
Cobalt (Co)	mg/L	---	---	---	---	0.000116	---	---	---	---	0.000092	---	---	---	---
Chromium (Cr)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Copper (Cu)	mg/L	---	---	---	---	0.0002	---	---	---	---	0.0001	---	---	---	---
Potassium (K)	mg/L	---	---	---	---	0.68	---	---	---	---	0.62	---	---	---	---
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	---	---	---	---	0.118	---	---	---	---	0.097	---	---	---	---
Manganese (Mn)	mg/L	---	---	---	---	0.001	---	---	---	---	0.00047	---	---	---	---
Molydenum (Mo)	mg/L	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---	---	---
Sodium (Na)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Nickel (Ni)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---
Phosphorous (P)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Antimony (Sb)	mg/L	---	---	---	---	0.0011	---	---	---	---	0.0009	---	---	---	---
Selenium (Se)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	---	---	---	---	0.0003	---	---	---	---	0.0004	---	---	---	---
Strontium (Sr)	mg/L	---	---	---	---	0.0011	---	---	---	---	0.0009	---	---	---	---
Titanium (Ti)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Thallium (Tl)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Uranium (U)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Vanadium (V)	mg/L	---	---	---	---	0.00007	---	---	---	---	< 0.00006	---	---	---	---
Tungsten (W)	mg/L	---	---	---	---	< 0.00007	---	---	---	---	0.00016	---	---	---	---
Yttrium (Y)	mg/L	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---
Zinc (Zn)	mg/L	---	---	---	---	0.0105	---	---	---	---	0.0005	---	---	---	---

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	110	111	112	113	114	115	116	117	118	119	120	121	122	123
Date		May 29, 07	Jun 5, 07	Jun 12, 07	Jun 19, 07	Jun 26, 07	Jul 03, 07	Jul 10, 07	Jul 17, 07	Jul 24, 07	Jul 31, 07	Aug 7, 07	Aug 14, 07	Aug 21, 07	Aug 28, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		930	833	986	976	978	942	940	939	978	948	991	826	947	967
pH	Effluent (units)	6.41	6.47	6.51	5.67	6.42	6.69	6.34	6.21	6.32	6.23	6.18	6.08	5.83	6.41
Acidity	as $CaCO_3$ (mg/L)	< 2	2	< 2	6	< 2	6	< 2	< 2	2	< 2	< 2	4	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	2	< 2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2
Conductivity	µmhos/cm	5	16	13	11	8	11	5	4	5	4	5	7	7	6
Sulphate (SO_4)	mg/L	0.6	0.7	0.6	< 0.5	0.6	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	0.6	0.5
Calcium (Ca)	mg/L	0.26	0.43	0.4	0.28	0.29	0.22	0.21	3	0.9	0.23	0.35	0.38	0.29	0.29
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	0.13	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Silver (Ag)	mg/L	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---
Aluminum (Al)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---
Arsenic (As)	mg/L	0.01	---	---	---	---	0.0134	---	---	---	---	0.0137	---	---	---
Barium (Ba)	mg/L	0.00015	---	---	---	---	0.00014	---	---	---	---	0.00014	---	---	---
Beryllium (Be)	mg/L	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---
Boron (B)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---
Bismuth (Bi)	mg/L	< 0.00002	---	---	---	---	0.00002	---	---	---	---	< 0.00002	---	---	---
Cadmium (Cd)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---
Cobalt (Co)	mg/L	0.000143	---	---	---	---	0.00001	---	---	---	---	0.000164	---	---	---
Chromium (Cr)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Copper (Cu)	mg/L	0.0006	---	---	---	---	0.0004	---	---	---	---	0.0002	---	---	---
Potassium (K)	mg/L	0.6	---	---	---	---	0.5	---	---	---	---	0.54	---	---	---
Lithium (Li)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---
Magnesium (Mg)	mg/L	0.105	---	---	---	---	0.069	---	---	---	---	0.108	---	---	---
Manganese (Mn)	mg/L	0.00084	---	---	---	---	0.00055	---	---	---	---	0.0012	---	---	---
Molydenum (Mo)	mg/L	< 0.00005	---	---	---	---	0.00012	---	---	---	---	0.00026	---	---	---
Sodium (Na)	mg/L	0.02	---	---	---	---	< 0.01	---	---	---	---	0.03	---	---	---
Nickel (Ni)	mg/L	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---
Phosphorous (P)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---
Lead (Pb)	mg/L	0.0005	---	---	---	---	0.00059	---	---	---	---	0.00002	---	---	---
Antimony (Sb)	mg/L	0.0011	---	---	---	---	0.0014	---	---	---	---	0.0015	---	---	---
Selenium (Se)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---
Tin (Sn)	mg/L	< 0.0003	---	---	---	---	0.006	---	---	---	---	< 0.0003	---	---	---
Strontium (Sr)	mg/L	0.0007	---	---	---	---	0.0008	---	---	---	---	0.0008	---	---	---
Titanium (Ti)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---
Thallium (Tl)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Uranium (U)	mg/L	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---
Vanadium (V)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---
Tungsten (W)	mg/L	< 0.00007	---	---	---	---	< 0.00007	---	---	---	---	< 0.00007	---	---	---
Yttrium (Y)	mg/L	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---
Zinc (Zn)	mg/L	0.0201	---	---	---	---	0.0011	---	---	---	---	0.0014	---	---	---

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	124	125	126	127	128	129	130	131	132	133	134	135	136
Date		Sep 4, 07	Sep 11, 07	Sep 18, 07	Sep 25, 07	Oct 02, 07	Oct 09, 07	Oct 16, 07	Oct 23, 07	Oct 30, 07	Nov 06, 07	Nov 13, 07	Nov 20, 07	Nov 27, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		978	987	977	989	992	990	992	964	971	907	946	981	*
pH	Effluent (units)	6.10	6.58	6.20	6.35	6.32	6.24	5.94	6.08	6.15	6.23	6.38	6.43	5.88
Acidity	as $CaCO_3$ (mg/L)	2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	3	< 2	7
Alkalinity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Conductivity	µmhos/cm	15	13	7	5	4	9070	5	6	4	5	4	5	6
Sulphate (SO_4)	mg/L	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.5	0.6	0.5	0.7	0.7
Calcium (Ca)	mg/L	0.26	0.25	0.23	0.2	0.26	0.24	0.23	0.28	0.21	0.19	0.19	0.23	0.23
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---
Nitrite (NO_2)	as N mg/L	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---
Nitrate (NO_3)	as N mg/L	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---
Ammonia	mg/L	---	< 0.1	---	---	---	---	0.1	---	---	---	---	< 0.1	---
Mercury (Hg)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Silver (Ag)	mg/L	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---
Aluminum (Al)	mg/L	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---
Arsenic (As)	mg/L	---	0.0164	---	---	---	---	0.0163	---	---	---	---	0.0179	---
Barium (Ba)	mg/L	---	0.00012	---	---	---	---	0.00016	---	---	---	---	0.00014	---
Beryllium (Be)	mg/L	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---
Boron (B)	mg/L	---	< 0.002	---	---	---	---	0.002	---	---	---	---	0.053	---
Bismuth (Bi)	mg/L	---	0.00003	---	---	---	---	0.00003	---	---	---	---	0.00002	---
Cadmium (Cd)	mg/L	---	< 0.000003	---	---	---	---	0.000004	---	---	---	---	< 0.000003	---
Cobalt (Co)	mg/L	---	0.00018	---	---	---	---	0.00018	---	---	---	---	0.000215	---
Chromium (Cr)	mg/L	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---
Copper (Cu)	mg/L	---	< 0.0005	---	---	---	---	0.0021	---	---	---	---	< 0.0005	---
Potassium (K)	mg/L	---	0.52	---	---	---	---	0.5	---	---	---	---	0.5	---
Lithium (Li)	mg/L	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---
Magnesium (Mg)	mg/L	---	0.111	---	---	---	---	0.11	---	---	---	---	0.109	---
Manganese (Mn)	mg/L	---	0.00111	---	---	---	---	0.00123	---	---	---	---	0.00107	---
Molydenum (Mo)	mg/L	---	0.00003	---	---	---	---	0.00007	---	---	---	---	< 0.00001	---
Sodium (Na)	mg/L	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---
Nickel (Ni)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Phosphorous (P)	mg/L	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---
Lead (Pb)	mg/L	---	< 0.00002	---	---	---	---	0.00002	---	---	---	---	< 0.00002	---
Antimony (Sb)	mg/L	---	0.00104	---	---	---	---	0.00098	---	---	---	---	0.00101	---
Selenium (Se)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Tin (Sn)	mg/L	---	0.00015	---	---	---	---	0.00018	---	---	---	---	< 0.00001	---
Strontium (Sr)	mg/L	---	0.0008	---	---	---	---	0.0008	---	---	---	---	0.0009	---
Titanium (Ti)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Thallium (Tl)	mg/L	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.000002	---
Uranium (U)	mg/L	---	< 0.000001	---	---	---	---	0.000006	---	---	---	---	0.000007	---
Vanadium (V)	mg/L	---	0.00003	---	---	---	---	< 0.00003	---	---	---	---	0.00008	---
Tungsten (W)	mg/L	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---
Yttrium (Y)	mg/L	---	< 0.000001	---	---	---	---	< 0.000001	---	---	---	---	< 0.000001	---
Zinc (Zn)	mg/L	---	0.001	---	---	---	---	0.001	---	---	---	---	0.001	---

Humidity Cell Results for Rock Sample 100907 (Black Rock Schist + Magnetite)

S-Total:	0.31%
S^{2-}:	0.27%
NP:	10.1 t CaCO3/1000 t
CaNP:	1.7 t CaCO3/1000 t
AP:	8.3 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	137	138	139	140	141	142	143	144	145	146	147	148	149	150
Date		Dec 04, 07	Dec 11, 07	Dec 18, 07	Dec 24, 07	Jan 02, 08	Jan 08, 08	Jan 15, 08	Jan 22, 08	Jan 29, 08	Feb 05, 08	Feb 12, 08	Feb 19, 08	Feb 26, 08	Mar 04, 08
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		949	990	980	977	952	927	962	987	987	961	962	991	958	988
pH	Effluent (units)	6.27	6.39	6.36	6.29	6.10	6.12	4.19	6.40	6.54	6.48	6.22	5.47	5.21	6.43
Acidity	as $CaCO_3$ (mg/L)	3	2	< 2	3	3	2	6	< 2	< 2	< 2	< 2	< 2	2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	< 2	2	< 2	2	2	2	< 2	< 2	< 2	3	< 2	3	< 2	< 2
Conductivity	µmhos/cm	4	5	4	4	5	5	25	6	6	8	6	8	8	6
Sulphate (SO_4)	mg/L	0.5	0.6	0.6	0.5	0.5	0.5	< 0.5	0.6	0.6	0.6	0.7	0.6	0.9	0.7
Calcium (Ca)	mg/L	0.19	0.24	0.2	0.2	0.24	0.24	0.24	0.24	0.24	0.26	0.25	0.23	0.25	0.24
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	---	0.06	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	---	---	< 0.1	---	---	---	---	0.2	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001
Aluminum (Al)	mg/L	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Arsenic (As)	mg/L	---	---	---	0.0175	---	---	---	---	0.0208	---	---	---	---	0.0306
Barium (Ba)	mg/L	---	---	---	0.00011	---	---	---	---	0.00012	---	---	---	---	0.0001
Beryllium (Be)	mg/L	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Boron (B)	mg/L	---	---	---	0.038	---	---	---	---	0.004	---	---	---	---	< 0.002
Bismuth (Bi)	mg/L	---	---	---	0.00002	---	---	---	---	0.00002	---	---	---	---	0.00004
Cadmium (Cd)	mg/L	---	---	---	0.000004	---	---	---	---	< 0.000003	---	---	---	---	< 0.000003
Cobalt (Co)	mg/L	---	---	---	0.000154	---	---	---	---	0.000196	---	---	---	---	0.000268
Chromium (Cr)	mg/L	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005
Copper (Cu)	mg/L	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005
Potassium (K)	mg/L	---	---	---	0.43	---	---	---	---	0.66	---	---	---	---	0.48
Lithium (Li)	mg/L	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	---	0.096	---	---	---	---	0.107	---	---	---	---	0.111
Manganese (Mn)	mg/L	---	---	---	0.00125	---	---	---	---	0.00138	---	---	---	---	0.00153
Molydenum (Mo)	mg/L	---	---	---	< 0.00001	---	---	---	---	0.00002	---	---	---	---	0.00155
Sodium (Na)	mg/L	---	---	---	0.01	---	---	---	---	0.02	---	---	---	---	0.01
Nickel (Ni)	mg/L	---	---	---	< 0.0001	---	---	---	---	0.0001	---	---	---	---	< 0.0001
Phosphorous (P)	mg/L	---	---	---	0.02	---	---	---	---	0.02	---	---	---	---	< 0.01
Lead (Pb)	mg/L	---	---	---	0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Antimony (Sb)	mg/L	---	---	---	0.00082	---	---	---	---	0.00068	---	---	---	---	0.00102
Selenium (Se)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Tin (Sn)	mg/L	---	---	---	< 0.00001	---	---	---	---	0.00003	---	---	---	---	< 0.00001
Strontium (Sr)	mg/L	---	---	---	0.0007	---	---	---	---	0.0008	---	---	---	---	0.0008
Titanium (Ti)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Thallium (Tl)	mg/L	---	---	---	< 0.000002	---	---	---	---	< 0.000002	---	---	---	---	< 0.000002
Uranium (U)	mg/L	---	---	---	0.000013	---	---	---	---	0.000008	---	---	---	---	0.000225
Vanadium (V)	mg/L	---	---	---	< 0.00003	---	---	---	---	0.00021	---	---	---	---	0.00005
Tungsten (W)	mg/L	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	0.00004
Yttrium (Y)	mg/L	---	---	---	< 0.000001	---	---	---	---	0.000001	---	---	---	---	< 0.000001
Zinc (Zn)	mg/L	---	---	---	0.002	---	---	---	---	0.001	---	---	---	---	< 0.001

Humidity Cell Results for Rock Sample 100881 (Sub-Arkosic Wacke)

S-Total:	0.03%
S^{2-}:	0.03%
NP:	16.8 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.62 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Date		19-Apr-05	26-Apr-05	3-May-05	10-May-05	17-May-05	24-May-05	31-May-05	7-Jun-05	14-Jun-05	21-Jun-05	28-Jun-05	5-Jul-05	12-Jul-05	19-Jul-05	26-Jul-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		827	967	942	902	914	865	926	937	911	934	924	938	991	972	888
pH	Effluent (units)	7.7	7.23	7.62	7.52	7.52	7.86	7.55	7.59	7.37	7.45	7.35	7.52	7.08	7.09	7.08
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2
Alkalinity	as $CaCO_3$ (mg/L)	17	21	16	13	11	13	9	8	6	7	6	6	7	6	9
Conductivity	µmhos/cm	51	54	42	34	42	29	29	18	16	17	16	15	18	19	11
Sulphate (SO_4)	mg/L	< 5	2.1	1.5	1.2	0.7	0.8	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	<0.5	1.7	<0.5
Calcium (Ca)	mg/L	1.01	0.59	1.59	0.37	0.3	0.43	0.41	0.4	0.39	0.52	0.45	0.52	0.81	1.31	0.5
Iron (Fe)	mg/L	0.02	< 0.02	< 0.02	0.02	< 0.02	0.04	< 0.02	< 0.02	0.02	0.07	0.04	< 0.02	<0.02	0.02	0.04
Chloride (Cl)	mg/L	< 2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Aluminum (Al)	mg/L	0.13	0.06	0.07	---	---	0.10	---	---	---	---	0.05	---	---	---	---
Arsenic (As)	mg/L	0.019	0.039	0.061	---	---	0.066	---	---	---	---	0.045	---	---	---	---
Barium (Ba)	mg/L	0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Boron (B)	mg/L	< 0.01	0.02	< 0.01	---	---	< 0.02	---	---	---	---	< 0.01	---	---	---	---
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Cobalt (Co)	mg/L	< 0.0003	0.0004	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Copper (Cu)	mg/L	< 0.0008	< 0.0008	< 0.0008	---	---	< 0.0008	---	---	---	---	0.0137	---	---	---	---
Potassium (K)	mg/L	4.82	3.12	2.92	---	---	2.1400	---	---	---	---	1.2400	---	---	---	---
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Magnesium (Mg)	mg/L	0.198	0.193	0.173	---	---	0.19	---	---	---	---	0.13	---	---	---	---
Manganese (Mn)	mg/L	< 0.0007	0.0011	< 0.0007	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---
Molydenum (Mo)	mg/L	0.0014	0.0035	0.0022	---	---	0.000	---	---	---	---	< 0.0003	---	---	---	---
Sodium (Na)	mg/L	6.73	8.5	7.03	---	---	4.960	---	---	---	---	1.840	---	---	---	---
Nickel (Ni)	mg/L	< 0.001	0.003	0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Lead (Pb)	mg/L	< 0.0002	0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Antimony (Sb)	mg/L	0.0017	0.0033	0.003	---	---	0.0013	---	---	---	---	0.0011	---	---	---	---
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Tin (Sn)	mg/L	0.006	0.006	0.003	---	---	0.001	---	---	---	---	< 0.001	---	---	---	---
Strontium (Sr)	mg/L	0.0057	0.0052	0.0052	---	---	0.0038	---	---	---	---	0.0043	---	---	---	---
Titanium (Ti)	mg/L	< 0.003	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Uranium (U)	mg/L	< 0.0002	0.0002	0.0002	---	---	0.0004	---	---	---	---	0.0005	---	---	---	---
Vanadium (V)	mg/L	0.001	0.0015	0.0017	---	---	0.0017	---	---	---	---	0.001	---	---	---	---
Tungsten (W)	mg/L	0.0003	0.0011	0.0007	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Zinc (Zn)	mg/L	< 0.001	< 0.001	0.002	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---

Humidity Cell Results for Rock Sample 100881 (Sub-Arkosic Wacke)

S-Total:	0.03%
S^{2-}:	0.03%
NP:	16.8 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.62 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Date		2-Aug-05	9-Aug-05	16-Aug-05	23-Aug-05	30-Aug-05	6-Sep-05	13-Sep-05	20-Sep-05	27-Sep-05	4-Oct-05	11-Oct-05	18-Oct-05	25-Oct-05	1-Nov-05	8-Nov-05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		934	956	920	928	920	962	932	934	921	958	950	902	962	943	912
pH	Effluent (units)	7.02	7.01	7.03	7.04	7.12	7.26	7.17	6.66	6.92	7.14	7.15	6.99	6.84	6.99	7.15
Acidity	as $CaCO_3$ (mg/L)	< 2	<2	<2	<2	<2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5.8	4	6	5	4	5	5	5	3	5	4	3	4	5	4
Conductivity	µmhos/cm	11	11	10	11	12	11	16	12	13	11	12	9	9	10	10
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.54	0.59	1.61	0.51	0.59	0.74	0.64	0.65	0.6	0.71	0.68	0.42	0.66	0.66	0.5
Iron (Fe)	mg/L	7.99	<0.02	<0.02	<0.02	<0.02	< 0.02	<0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	<2	---	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Aluminum (Al)	mg/L	0.03	---	---	---	---	0.03	---	---	---	---	0.02	---	---	---	---
Arsenic (As)	mg/L	0.047	---	---	---	---	0.038	---	---	---	---	0.04	---	---	---	---
Barium (Ba)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Beryllium (Be)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Boron (B)	mg/L	0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Bismuth (Bi)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Cadmium (Cd)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Cobalt (Co)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Chromium (Cr)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Copper (Cu)	mg/L	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---
Potassium (K)	mg/L	1.29	---	---	---	---	1.34	---	---	---	---	1.1300	---	---	---	---
Lithium (Li)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Magnesium (Mg)	mg/L	0.154	---	---	---	---	0.238	---	---	---	---	0.2090	---	---	---	---
Manganese (Mn)	mg/L	< 0.0007	---	---	---	---	0.001	---	---	---	---	< 0.0007	---	---	---	---
Molydenum (Mo)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Sodium (Na)	mg/L	1.27	---	---	---	---	0.78	---	---	---	---	0.54	---	---	---	---
Nickel (Ni)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Phosphorous (P)	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Lead (Pb)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Antimony (Sb)	mg/L	0.0010	---	---	---	---	0.0007	---	---	---	---	0.0007	---	---	---	---
Selenium (Se)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---
Tin (Sn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Strontium (Sr)	mg/L	0.0041	---	---	---	---	0.0053	---	---	---	---	0.0047	---	---	---	---
Titanium (Ti)	mg/L	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---
Thallium (Tl)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Uranium (U)	mg/L	0.0006	---	---	---	---	0.0007	---	---	---	---	0.0007	---	---	---	---
Vanadium (V)	mg/L	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---
Tungsten (W)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Yttrium (Y)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Zinc (Zn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---

Humidity Cell Results for Rock Sample 100881 (Sub-Arkosic Wacke)

S-Total:	0.03%
S^{2-}:	0.03%
NP:	16.8 t CaCO3/1000 t
CaNP:	8.3 t CaCO3/1000 t
AP:	0.62 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	30	31	32	33	34	35	36	37	38	39	40
Date		15-Nov-05	22-Nov-05	29-Nov-05	6-Dec-05	13-Dec-05	20-Dec-05	27-Dec-05	3-Jan-06	10-Jan-06	17-Jan-06	24-Jan-06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		886	920	913	955	882	894	930	939	953	897	936
pH	Effluent (units)	7.18	7.04	6.96	6.94	6.99	8.66	7.02	7.28	7.03	7.14	7.12
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	24	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	6	4	4	4	5	6	4	5	3	12	4
Conductivity	µmhos/cm	17	11	10	10	11	24	15	22	9	16	12
Sulphate (SO_4)	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Calcium (Ca)	mg/L	0.77	0.5	0.56	0.75	0.64	0.6	0.54	0.58	0.57	0.56	0.54
Iron (Fe)	mg/L	< 0.02	< 0.02	< 0.02	< 0.02	0.02	0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	<2
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Aluminum (Al)	mg/L	0.03	---	---	---	---	0.05	---	---	---	---	0.03
Arsenic (As)	mg/L	0.047	---	---	---	---	0.044	---	---	---	---	0.032
Barium (Ba)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Beryllium (Be)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Boron (B)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Bismuth (Bi)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Cadmium (Cd)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Cobalt (Co)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Chromium (Cr)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Copper (Cu)	mg/L	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008
Potassium (K)	mg/L	1.3400	---	---	---	---	1.1600	---	---	---	---	0.9500
Lithium (Li)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Magnesium (Mg)	mg/L	0.30	---	---	---	---	0.25	---	---	---	---	0.19
Manganese (Mn)	mg/L	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Molydenum (Mo)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Sodium (Na)	mg/L	0.5900	---	---	---	---	0.4300	---	---	---	---	0.2800
Nickel (Ni)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Phosphorous (P)	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Lead (Pb)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Antimony (Sb)	mg/L	0.0008	---	---	---	---	0.0004	---	---	---	---	0.0006
Selenium (Se)	mg/L	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005
Tin (Sn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Strontium (Sr)	mg/L	0.0086	---	---	---	---	0.0049	---	---	---	---	0.0041
Titanium (Ti)	mg/L	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003
Thallium (Tl)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Uranium (U)	mg/L	0.0008	---	---	---	---	0.0006	---	---	---	---	0.0004
Vanadium (V)	mg/L	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009
Tungsten (W)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Yttrium (Y)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Zinc (Zn)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Date		April 19/05	April 26/05	May 03/05	May 10/05	May 17/05	May 24/05	May 31/05	June 7/05	June 14/05	June 21/05	June 28/05	July 5/05	July 12/05	July 19/05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		814	970	994	910	913	861	937	932	917	934	883	996	996	998
pH	Effluent (units)	7.57	7.24	7.4	7.16	7.36	7.35	7.40	7.24	7.24	7.31	7.41	7.60	7.42	7.09
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	<2	<2
Alkalinity	as $CaCO_3$ (mg/L)	14	20	13	8	9	7	8	7	6	6	7	11	11	5
Conductivity	µmhos/cm	47	50	34	23	43	18	29	20	16	18	20	27	31	20
Sulphate (SO_4)	mg/L	< 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	1.5
Calcium (Ca)	mg/L	0.74	1.17	4.07	1.07	1.6	1.22	1.82	1.83	1.49	1.88	2.16	3.33	2.45	2.18
Iron (Fe)	mg/L	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	<0.02	0.05
Chloride (Cl)	mg/L	< 2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.6	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.5	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Silver (Ag)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Aluminum (Al)	mg/L	0.26	0.08	0.05	---	---	0.09	---	---	---	---	0.05	---	---	---
Arsenic (As)	mg/L	0.008	0.01	0.011	---	---	0.008	---	---	---	---	0.006	---	---	---
Barium (Ba)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---
Beryllium (Be)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---
Boron (B)	mg/L	0.02	0.04	0.02	---	---	< 0.02	---	---	---	---	< 0.01	---	---	---
Bismuth (Bi)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Cadmium (Cd)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Cobalt (Co)	mg/L	< 0.0003	< 0.0003	< 0.0003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Chromium (Cr)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---
Copper (Cu)	mg/L	< 0.0008	< 0.0008	0.0009	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---
Potassium (K)	mg/L	6.44	6.26	5.04	---	---	2.8600	---	---	---	---	1.7600	---	---	---
Lithium (Li)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---
Magnesium (Mg)	mg/L	0.091	0.145	0.185	---	---	0.19	---	---	---	---	0.203	---	---	---
Manganese (Mn)	mg/L	< 0.0007	0.0007	< 0.0007	---	---	< 0.0007	---	---	---	---	0.0008	---	---	---
Molydenum (Mo)	mg/L	0.0004	0.0076	0.003	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Sodium (Na)	mg/L	5.95	5.7	2.87	---	---	0.750	---	---	---	---	0.260	---	---	---
Nickel (Ni)	mg/L	< 0.001	< 0.001	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---
Phosphorous (P)	mg/L	< 0.1	< 0.1	< 0.1	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---
Lead (Pb)	mg/L	< 0.0002	0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---
Antimony (Sb)	mg/L	0.0044	0.0198	0.0139	---	---	0.0039	---	---	---	---	0.0035	---	---	---
Selenium (Se)	mg/L	< 0.005	< 0.005	< 0.005	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---
Tin (Sn)	mg/L	0.002	0.004	0.003	---	---	< 0.001	---	---	---	---	0.001	---	---	---
Strontium (Sr)	mg/L	0.0021	0.0056	0.0066	---	---	0.0042	---	---	---	---	0.0059	---	---	---
Titanium (Ti)	mg/L	0.004	< 0.003	< 0.003	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---
Thallium (Tl)	mg/L	< 0.0002	< 0.0002	< 0.0002	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---
Uranium (U)	mg/L	< 0.0002	0.002	0.0028	---	---	0.0022	---	---	---	---	0.0017	---	---	---
Vanadium (V)	mg/L	0.0017	0.0021	0.0019	---	---	0.0016	---	---	---	---	0.0012	---	---	---
Tungsten (W)	mg/L	0.0074	0.0091	0.0028	---	---	0.0003	---	---	---	---	0.0003	---	---	---
Yttrium (Y)	mg/L	< 0.0001	< 0.0001	< 0.0001	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Zinc (Zn)	mg/L	< 0.001	0.002	< 0.001	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Date		July 26/05	Aug 2/05	Aug 9/05	Aug 16/05	Aug 23/05	Aug 30/05	Sep 6/05	Sep 13/05	Sep 20/ 05	Sep 27/05	Oct 04/05	Oct 11/05	Oct18/05	Oct25/05
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		900	938	963	926	938	9.23	960	958	936	916	972	956	918	948
pH	Effluent (units)	6.77	6.94	7.13	7.04	7.01	6.52	6.85	7.13	6.58	7.21	7.12	7.13	6.93	6.83
Acidity	as $CaCO_3$ (mg/L)	<2	< 2	<2	<2	<2	<2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5	6.8	6	7	4	4	10	5	4	5	6	5	4	5
Conductivity	µmhos/cm	10	12	13	12	12	15	13	18	15	11	14	13	12	12
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	1.33	1.74	1.84	3.28	1.5	1.61	1.99	1.95	1.6	1.46	1.98	1.83	1.23	1.74
Iron (Fe)	mg/L	<0.02	7.73	<0.02	<0.02	<0.02	<0.02	< 0.02	<0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---
Nitrite (NO_2)	as N mg/L	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---
Nitrate (NO_3)	as N mg/L	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	< 2	---	---	---	---	< 2	---	---	---	---	<2	---	---
Ammonia	mg/L	---	0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---
Mercury (Hg)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Silver (Ag)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Aluminum (Al)	mg/L	---	0.06	---	---	---	---	0.03	---	---	---	---	0.04	---	---
Arsenic (As)	mg/L	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---
Barium (Ba)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Beryllium (Be)	mg/L	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---
Boron (B)	mg/L	---	0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---
Bismuth (Bi)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Cadmium (Cd)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Cobalt (Co)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Chromium (Cr)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Copper (Cu)	mg/L	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---
Potassium (K)	mg/L	---	1.28	---	---	---	---	0.92	---	---	---	---	0.8500	---	---
Lithium (Li)	mg/L	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---
Magnesium (Mg)	mg/L	---	0.142	---	---	---	---	0.134	---	---	---	---	0.1020	---	---
Manganese (Mn)	mg/L	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	0.00	---	---
Molydenum (Mo)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Sodium (Na)	mg/L	---	0.17	---	---	---	---	0.11	---	---	---	---	0.07	---	---
Nickel (Ni)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Phosphorous (P)	mg/L	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---
Lead (Pb)	mg/L	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Antimony (Sb)	mg/L	---	0.0030	---	---	---	---	0.0026	---	---	---	---	0.0021	---	---
Selenium (Se)	mg/L	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---	---
Tin (Sn)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---
Strontium (Sr)	mg/L	---	0.0035	---	---	---	---	0.0037	---	---	---	---	0.0026	---	---
Titanium (Ti)	mg/L	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---
Thallium (Tl)	mg/L	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Uranium (U)	mg/L	---	0.0013	---	---	---	---	0.0009	---	---	---	---	0.0007	---	---
Vanadium (V)	mg/L	---	0.001	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---
Tungsten (W)	mg/L	---	0.0004	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---
Yttrium (Y)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Zinc (Zn)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Date		Nov1 01/05	Nov 08/05	Nov 15/05	Nov22/05	Nov29/05	Dec06/05	Dec13/05	Dec 20/05	Dec 27/05	Jan 03/06	Jan 10/06	Jan 17/06	Jan 24/06	Jan 31/06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		958	906	878	927	932	950	882	879	925	972	941	931	921	918
pH	Effluent (units)	6.95	6.95	6.82	6.87	8.00	6.89	6.62	6.80	6.80	7.11	6.93	6.96	6.91	6.65
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	22	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	5	4	3	4	7	4	3	3	4	4	3	3	3	4
Conductivity	µmhos/cm	12	11	11	11	15	11	7	13	18	24	12	17	12	17
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	1.85	1.2	0.99	1.05	1.36	1.75	0.98	0.6	1.54	1.36	1.49	1.15	1.27	1.18
Iron (Fe)	mg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloride (Cl)	mg/L	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---
Nitrite (NO_2)	as N mg/L	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---
Nitrate (NO_3)	as N mg/L	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	< 2	---	---	---	---	< 2	---	---	---	---	<2	---
Ammonia	mg/L	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---
Mercury (Hg)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Silver (Ag)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Aluminum (Al)	mg/L	---	---	0.05	---	---	---	---	0.06	---	---	---	---	0.03	---
Arsenic (As)	mg/L	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Barium (Ba)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Beryllium (Be)	mg/L	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Boron (B)	mg/L	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---
Bismuth (Bi)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Cadmium (Cd)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Cobalt (Co)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Chromium (Cr)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Copper (Cu)	mg/L	---	---	< 0.0008	---	---	---	---	< 0.0008	---	---	---	---	< 0.0008	---
Potassium (K)	mg/L	---	---	0.7700	---	---	---	---	1.1800	---	---	---	---	0.64	---
Lithium (Li)	mg/L	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Magnesium (Mg)	mg/L	---	---	0.08	---	---	---	---	0.26	---	---	---	---	0.068	---
Manganese (Mn)	mg/L	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---
Molydenum (Mo)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---
Sodium (Na)	mg/L	---	---	0.0700	---	---	---	---	0.4200	---	---	---	---	0.06	---
Nickel (Ni)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Phosphorous (P)	mg/L	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---
Lead (Pb)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Antimony (Sb)	mg/L	---	---	0.0017	---	---	---	---	0.0009	---	---	---	---	0.0014	---
Selenium (Se)	mg/L	---	---	< 0.005	---	---	---	---	< 0.005	---	---	---	---	< 0.005	---
Tin (Sn)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Strontium (Sr)	mg/L	---	---	0.0034	---	---	---	---	0.0049	---	---	---	---	0.002	---
Titanium (Ti)	mg/L	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---
Thallium (Tl)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Uranium (U)	mg/L	---	---	0.0004	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---
Vanadium (V)	mg/L	---	---	< 0.0009	---	---	---	---	< 0.0009	---	---	---	---	< 0.0009	---
Tungsten (W)	mg/L	---	---	0.0003	---	---	---	---	0.0002	---	---	---	---	< 0.0002	---
Yttrium (Y)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Zinc (Zn)	mg/L	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	42	43	44	45	46	47	48	49	50	51	52	53	54
Date		Feb 07/06	Feb 14/06	Feb 21/06	Feb 28/06	Mar 07/06	Mar 14/06	Mar 21/06	Mar 28/06.	Apr 04/06	Apr 11/06	Apr 18/06	Apr 25/06	May 02/06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		948	946	908	962	882	970	878	939	891	897	879	928	888
pH	Effluent (units)	6.79	6.62	6.77	6.65	6.84	6.83	6.81	6.95	6.54	6.53	6.64	6.74	6.71
Acidity	as $CaCO_3$ (mg/L)	< 2	9	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	4	6	6	4	3	4	4	5	2	< 2	3	3	4
Conductivity	µmhos/cm	11	10	10	15	10	12	11	19	9	7	10	9	20
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	1.35	1.38	1.24	1.47	0.86	1.58	0.99	2.35	0.81	0.82	1.03	0.94	0.89
Iron (Fe)	mg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.00003	---	---	---	---
Aluminum (Al)	mg/L	---	---	---	0.01	---	---	---	---	0.01	---	---	---	---
Arsenic (As)	mg/L	---	---	---	< 0.005	---	---	---	---	0.0026	---	---	---	---
Barium (Ba)	mg/L	---	---	---	< 0.001	---	---	---	---	0.00014	---	---	---	---
Beryllium (Be)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.00004	---	---	---	---
Boron (B)	mg/L	---	---	---	< 0.07	---	---	---	---	< 0.003	---	---	---	---
Bismuth (Bi)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.00002	---	---	---	---
Cadmium (Cd)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.00006	---	---	---	---
Cobalt (Co)	mg/L	---	---	---	< 0.0003	---	---	---	---	0.00002	---	---	---	---
Chromium (Cr)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.0003	---	---	---	---
Copper (Cu)	mg/L	---	---	---	< 0.0008	---	---	---	---	0.0004	---	---	---	---
Potassium (K)	mg/L	---	---	---	0.78	---	---	---	---	0.54	---	---	---	---
Lithium (Li)	mg/L	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	---	---	---	0.072	---	---	---	---	0.049	---	---	---	---
Manganese (Mn)	mg/L	---	---	---	0.0013	---	---	---	---	0.00047	---	---	---	---
Molydenum (Mo)	mg/L	---	---	---	< 0.0003	---	---	---	---	< 0.00005	---	---	---	---
Sodium (Na)	mg/L	---	---	---	< 0.03	---	---	---	---	0.06	---	---	---	---
Nickel (Ni)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.0007	---	---	---	---
Phosphorous (P)	mg/L	---	---	---	< 0.01	---	---	---	---	0.05	---	---	---	---
Lead (Pb)	mg/L	---	---	---	< 0.0002	---	---	---	---	0.00002	---	---	---	---
Antimony (Sb)	mg/L	---	---	---	0.0013	---	---	---	---	0.0011	---	---	---	---
Selenium (Se)	mg/L	---	---	---	< 0.005	---	---	---	---	< 0.003	---	---	---	---
Tin (Sn)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.0003	---	---	---	---
Strontium (Sr)	mg/L	---	---	---	0.0023	---	---	---	---	0.0013	---	---	---	---
Titanium (Ti)	mg/L	---	---	---	< 0.003	---	---	---	---	< 0.0002	---	---	---	---
Thallium (Tl)	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0001	---	---	---	---
Uranium (U)	mg/L	---	---	---	< 0.0002	---	---	---	---	0.00013	---	---	---	---
Vanadium (V)	mg/L	---	---	---	< 0.0009	---	---	---	---	0.00046	---	---	---	---
Tungsten (W)	mg/L	---	---	---	< 0.0002	---	---	---	---	0.00007	---	---	---	---
Yttrium (Y)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.000005	---	---	---	---
Zinc (Zn)	mg/L	---	---	---	< 0.001	---	---	---	---	0.0007	---	---	---	---

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	55	56	57	58	59	60	61	62	63	64	65	66	67	68
Date		May 09/06	May 16/06	May 23/06	May 30/06	Jun 6/06	Jun 13/06	Jun 20, 06	Jun 27, 06	Jul 04, 06	Jul 11, 06	Jul 18, 06	Jul 25, 06	Aug 1, 06	Aug 8, 06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		920	914	962	909	978	922	873	924	881	853	916	872	882	884
pH	Effluent (units)	6.54	6.42	6.67	6.77	7.08	6.82	6.87	6.68	6.50	6.49	6.46	6.52	6.27	6.49
Acidity	as $CaCO_3$ (mg/L)	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	2	3	4	4	6	3	6	3	2	2	2	2	2	2
Conductivity	µmhos/cm	48	118	53	15	17	7	8	10	7	7	6	8	5	6
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.92	0.87	1.45	1.47	1.6	0.86	0.66	0.99	0.77	0.74	0.74	0.77	0.7	0.66
Iron (Fe)	mg/L	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.07	< 0.01
Chloride (Cl)	mg/L	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---
Ammonia	mg/L	0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Silver (Ag)	mg/L	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---
Aluminum (Al)	mg/L	0.02	---	---	---	---	0.02	---	---	---	---	0.02	---	---	---
Arsenic (As)	mg/L	0.0018	---	---	---	---	0.0014	---	---	---	---	0.0014	---	---	---
Barium (Ba)	mg/L	0.00012	---	---	---	---	0.00011	---	---	---	---	0.00014	---	---	---
Beryllium (Be)	mg/L	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---
Boron (B)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	0.004	---	---	---
Bismuth (Bi)	mg/L	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---
Cadmium (Cd)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---
Cobalt (Co)	mg/L	0.00001	---	---	---	---	< 0.000007	---	---	---	---	< 0.000007	---	---	---
Chromium (Cr)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Copper (Cu)	mg/L	0.0005	---	---	---	---	0.0004	---	---	---	---	0.0001	---	---	---
Potassium (K)	mg/L	0.55	---	---	---	---	0.46	---	---	---	---	0.5	---	---	---
Lithium (Li)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---
Magnesium (Mg)	mg/L	0.054	---	---	---	---	0.048	---	---	---	---	0.046	---	---	---
Manganese (Mn)	mg/L	0.00063	---	---	---	---	0.0005	---	---	---	---	0.00038	---	---	---
Molydenum (Mo)	mg/L	0.00009	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---	---
Sodium (Na)	mg/L	0.04	---	---	---	---	0.03	---	---	---	---	0.04	---	---	---
Nickel (Ni)	mg/L	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---
Phosphorous (P)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---
Lead (Pb)	mg/L	0.00002	---	---	---	---	0.00002	---	---	---	---	< 0.00002	---	---	---
Antimony (Sb)	mg/L	0.001	---	---	---	---	0.0008	---	---	---	---	0.0006	---	---	---
Selenium (Se)	mg/L	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---	---
Tin (Sn)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Strontium (Sr)	mg/L	0.0014	---	---	---	---	< 0.0006	---	---	---	---	0.001	---	---	---
Titanium (Ti)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---
Thallium (Tl)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Uranium (U)	mg/L	0.00014	---	---	---	---	0.0001	---	---	---	---	0.00007	---	---	---
Vanadium (V)	mg/L	0.00027	---	---	---	---	0.00039	---	---	---	---	0.00038	---	---	---
Tungsten (W)	mg/L	0.00011	---	---	---	---	< 0.00007	---	---	---	---	0.00013	---	---	---
Yttrium (Y)	mg/L	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---
Zinc (Zn)	mg/L	0.0013	---	---	---	---	0.0008	---	---	---	---	0.0007	---	---	---

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	69	70	71	72	73	74	75	76	77	78	79	80	81	82
Date		Aug 15, 06	Aug 22, 06	Aug 29, 06	Sep 05, 06	Sep 12, 06	Sep 19, 06	Sep 26, 06	Oct 03, 06	Oct 10, 06	Oct 17, 06	Oct 24, 06	Oct 31, 06	Nov 7, 06	Nov 14, 06
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		882	867	866	890	N/A	872	878	949	849	882	855	884	896	910
pH	Effluent (units)	6.56	6.49	6.56	6.52	6.83	6.61	6.52	6.76	6.93	6.96	6.45	6.41	6.28	7.09
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	3
Alkalinity	as $CaCO_3$ (mg/L)	2	2	2	2	3	2	2	3	4	4	2	2	2	4
Conductivity	µmhos/cm	2	6	5	7	10	10	14	16	13	16	8	7	13	24
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.72	0.84	0.69	0.64	1.19	0.91	0.69	1.07	1.83	1.67	0.93	5.09	0.8	0.86
Iron (Fe)	mg/L	0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---
Nitrite (NO_2)	as N mg/L	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---
Nitrate (NO_3)	as N mg/L	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---
Ammonia	mg/L	---	< 0.1	---	---	---	---	0.1	---	---	---	---	< 0.1	---	---
Mercury (Hg)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Silver (Ag)	mg/L	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---
Aluminum (Al)	mg/L	---	< 0.01	---	---	---	---	0.04	---	---	---	---	< 0.01	---	---
Arsenic (As)	mg/L	---	0.0014	---	---	---	---	0.001	---	---	---	---	0.0006	---	---
Barium (Ba)	mg/L	---	0.00015	---	---	---	---	0.00018	---	---	---	---	0.00012	---	---
Beryllium (Be)	mg/L	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---
Boron (B)	mg/L	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	0.047	---	---
Bismuth (Bi)	mg/L	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---
Cadmium (Cd)	mg/L	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	0.00007	---	---
Cobalt (Co)	mg/L	---	< 0.000007	---	---	---	---	0.000045	---	---	---	---	0.0001	---	---
Chromium (Cr)	mg/L	---	< 0.0003	---	---	---	---	0.0014	---	---	---	---	< 0.0003	---	---
Copper (Cu)	mg/L	---	0.0002	---	---	---	---	0.0008	---	---	---	---	0.0012	---	---
Potassium (K)	mg/L	---	0.55	---	---	---	---	0.45	---	---	---	---	1.35	---	---
Lithium (Li)	mg/L	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---
Magnesium (Mg)	mg/L	---	0.056	---	---	---	---	0.049	---	---	---	---	33.2	---	---
Manganese (Mn)	mg/L	---	0.00073	---	---	---	---	0.00048	---	---	---	---	0.0005	---	---
Molydenum (Mo)	mg/L	---	< 0.00005	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---
Sodium (Na)	mg/L	---	0.04	---	---	---	---	< 0.04	---	---	---	---	0.46	---	---
Nickel (Ni)	mg/L	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---
Phosphorous (P)	mg/L	---	< 0.01	---	---	---	---	0.05	---	---	---	---	0.01	---	---
Lead (Pb)	mg/L	---	0.00007	---	---	---	---	0.00011	---	---	---	---	0.00007	---	---
Antimony (Sb)	mg/L	---	0.001	---	---	---	---	0.0011	---	---	---	---	0.0012	---	---
Selenium (Se)	mg/L	---	< 0.003	---	---	---	---	< 0.003	---	---	---	---	< 0.003	---	---
Tin (Sn)	mg/L	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---
Strontium (Sr)	mg/L	---	0.0013	---	---	---	---	0.001	---	---	---	---	0.0063	---	---
Titanium (Ti)	mg/L	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	0.0004	---	---
Thallium (Tl)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Uranium (U)	mg/L	---	0.00004	---	---	---	---	0.00003	---	---	---	---	< 0.00002	---	---
Vanadium (V)	mg/L	---	0.00039	---	---	---	---	0.00017	---	---	---	---	0.00033	---	---
Tungsten (W)	mg/L	---	0.00011	---	---	---	---	0.0001	---	---	---	---	0.00018	---	---
Yttrium (Y)	mg/L	---	< 0.000005	---	---	---	---	0.000011	---	---	---	---	0.00001	---	---
Zinc (Zn)	mg/L	---	0.0038	---	---	---	---	0.0008	---	---	---	---	0.0023	---	---

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	83	84	85	86	87	88	89	90	91	92	93	94	95
Date		Nov 21, 06	Nov 28, 06	Dec 05, 06	Dec 12, 06	Dec 19, 06	Dec 27, 06	Jan 02, 07	Jan 9, 07	Jan 16, 07	Jan 23, 07	Jan 30, 07	Feb 6, 07	Feb 13, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		966	867	947	893	980	885	917	994	915	911	912	896	910
pH	Effluent (units)	7.01	6.53	6.76	6.30	6.57	6.43	6.63	6.72	6.52	6.66	6.48	6.36	6.38
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	16	2	3	< 2	3	2	2	3	2	2	< 2	< 2	2
Conductivity	µmhos/cm	18	7	6	6	10	7	7	16	13	10	10	11	14
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.56	0.86	0.85	0.75	1.28	0.79	0.94	1.45	0.75	0.87	0.78	0.86	0.79
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02
Chloride (Cl)	mg/L	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2
Nitrite (NO_2)	as N mg/L	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06
Nitrate (NO_3)	as N mg/L	---	---	< 0.05	---	---	---	---	0.08	---	---	---	---	< 0.05
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2
Ammonia	mg/L	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1
Mercury (Hg)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Silver (Ag)	mg/L	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003
Aluminum (Al)	mg/L	---	---	0.01	---	---	---	---	0.01	---	---	---	---	0.02
Arsenic (As)	mg/L	---	---	0.0009	---	---	---	---	0.0017	---	---	---	---	0.0009
Barium (Ba)	mg/L	---	---	0.0001	---	---	---	---	0.00015	---	---	---	---	0.00012
Beryllium (Be)	mg/L	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004
Boron (B)	mg/L	---	---	< 0.007	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Bismuth (Bi)	mg/L	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002
Cadmium (Cd)	mg/L	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006
Cobalt (Co)	mg/L	---	---	0.000011	---	---	---	---	0.000009	---	---	---	---	< 0.000007
Chromium (Cr)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Copper (Cu)	mg/L	---	---	0.0003	---	---	---	---	< 0.0001	---	---	---	---	0.0002
Potassium (K)	mg/L	---	---	0.55	---	---	---	---	0.59	---	---	---	---	0.54
Lithium (Li)	mg/L	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002
Magnesium (Mg)	mg/L	---	---	0.038	---	---	---	---	0.07	---	---	---	---	0.051
Manganese (Mn)	mg/L	---	---	0.00056	---	---	---	---	0.00095	---	---	---	---	0.00048
Molydenum (Mo)	mg/L	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005
Sodium (Na)	mg/L	---	---	< 0.04	---	---	---	---	0.06	---	---	---	---	0.06
Nickel (Ni)	mg/L	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007
Phosphorous (P)	mg/L	---	---	0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01
Lead (Pb)	mg/L	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	0.0001
Antimony (Sb)	mg/L	---	---	0.0008	---	---	---	---	0.0009	---	---	---	---	0.0005
Selenium (Se)	mg/L	---	---	< 0.003	---	---	---	---	< 0.001	---	---	---	---	< 0.001
Tin (Sn)	mg/L	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003
Strontium (Sr)	mg/L	---	---	0.0009	---	---	---	---	0.0018	---	---	---	---	0.0012
Titanium (Ti)	mg/L	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002
Thallium (Tl)	mg/L	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Uranium (U)	mg/L	---	---	0.00005	---	---	---	---	0.0001	---	---	---	---	0.00003
Vanadium (V)	mg/L	---	---	0.00023	---	---	---	---	0.0003	---	---	---	---	0.00017
Tungsten (W)	mg/L	---	---	< 0.00007	---	---	---	---	0.00017	---	---	---	---	0.00057
Yttrium (Y)	mg/L	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005
Zinc (Zn)	mg/L	---	---	0.0006	---	---	---	---	0.0017	---	---	---	---	0.0004

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	96	97	98	99	100	101	102	103	104	105	106	107	108	109
Date		Feb 20, 07	Feb 27, 07	Mar 06, 07	Mar 13,07	Mar 20, 07	Mar 27, 07	Apr 03, 07	Apr 10, 07	Apr 17, 07	Apr 24, 07	May 01, 07	May 08, 07	May 15, 07	May 22, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		938	900	998	988	982	957	977	989	964	969	989	996	996	964
pH	Effluent (units)	6.54	6.47	6.73	6.62	6.61	6.87	6.59	6.64	6.70	6.64	6.79	6.52	6.66	6.64
Acidity	as $CaCO_3$ (mg/L)	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	4	< 2	< 2	< 2	< 2	88
Alkalinity	as $CaCO_3$ (mg/L)	2	2	3	3	2	3	3	2	3	2	4	2	3	4
Conductivity	µmhos/cm	9	7	11	12	11	12	10	11	38	20	13	11	12	11
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	0.9	0.76	1.27	1.24	1.41	1.7	1.4	1.31	1.34	1.34	1.41	1.31	1.45	1.15
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	---	0.05	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---
Aluminum (Al)	mg/L	---	---	---	---	0.02	---	---	---	---	0.01	---	---	---	---
Arsenic (As)	mg/L	---	---	---	---	0.0006	---	---	---	---	0.0008	---	---	---	---
Barium (Ba)	mg/L	---	---	---	---	0.00013	---	---	---	---	0.00011	---	---	---	---
Beryllium (Be)	mg/L	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---
Boron (B)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Bismuth (Bi)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Cadmium (Cd)	mg/L	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---
Cobalt (Co)	mg/L	---	---	---	---	0.000019	---	---	---	---	0.000016	---	---	---	---
Chromium (Cr)	mg/L	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---
Copper (Cu)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Potassium (K)	mg/L	---	---	---	---	0.5	---	---	---	---	0.47	---	---	---	---
Lithium (Li)	mg/L	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	---	---	---	---	0.07	---	---	---	---	0.057	---	---	---	---
Manganese (Mn)	mg/L	---	---	---	---	0.00071	---	---	---	---	0.00054	---	---	---	---
Molydenum (Mo)	mg/L	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---	---	---
Sodium (Na)	mg/L	---	---	---	---	0.04	---	---	---	---	0.04	---	---	---	---
Nickel (Ni)	mg/L	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---
Phosphorous (P)	mg/L	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Antimony (Sb)	mg/L	---	---	---	---	0.0007	---	---	---	---	0.0007	---	---	---	---
Selenium (Se)	mg/L	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	---	---	---	---	0.0003	---	---	---	---	< 0.0003	---	---	---	---
Strontium (Sr)	mg/L	---	---	---	---	0.0017	---	---	---	---	0.0014	---	---	---	---
Titanium (Ti)	mg/L	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---
Thallium (Tl)	mg/L	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Uranium (U)	mg/L	---	---	---	---	0.0001	---	---	---	---	0.00006	---	---	---	---
Vanadium (V)	mg/L	---	---	---	---	0.00024	---	---	---	---	0.00025	---	---	---	---
Tungsten (W)	mg/L	---	---	---	---	0.00014	---	---	---	---	0.00043	---	---	---	---
Yttrium (Y)	mg/L	---	---	---	---	< 0.000005	---	---	---	---	< 0.000005	---	---	---	---
Zinc (Zn)	mg/L	---	---	---	---	0.0008	---	---	---	---	0.0005	---	---	---	---

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	110	111	112	113	114	115	116	117	118	119	120	121	122	123
Date		May 29, 07	Jun 5, 07	Jun 12, 07	Jun 19, 07	Jun 26, 07	Jul 03, 07	Jul 10, 07	Jul 17, 07	Jul 24, 07	Jul 31, 07	Aug 7, 07	Aug 14, 07	Aug 21, 07	Aug 28, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		981	982	980	984	947	979	982	970	824	980	928	937	990	976
pH	Effluent (units)	6.83	6.77	6.72	6.60	6.70	6.63	6.75	6.51	6.74	6.84	6.43	6.44	8.62	7.02
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	3	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	3	5	3	2	3	2	4	3	3	3	2	2	6	4
Conductivity	µmhos/cm	10	22	16	12	15	11	13	9	10	13	10	10	24	17
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	1.37	1.39	1.33	1.33	1.58	1.28	1.61	1.31	2.06	1.48	1.5	1.27	1.27	1.26
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---
Nitrite (NO_2)	as N mg/L	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---
Nitrate (NO_3)	as N mg/L	< 0.05	---	---	---	---	< 0.05	---	---	---	---	0.12	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---	---	---
Ammonia	mg/L	< 0.1	---	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---
Mercury (Hg)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Silver (Ag)	mg/L	< 0.00003	---	---	---	---	< 0.00003	---	---	---	---	< 0.00003	---	---	---
Aluminum (Al)	mg/L	< 0.01	---	---	---	---	0.01	---	---	---	---	0.02	---	---	---
Arsenic (As)	mg/L	0.0007	---	---	---	---	0.0007	---	---	---	---	0.0007	---	---	---
Barium (Ba)	mg/L	0.00017	---	---	---	---	0.00014	---	---	---	---	0.00018	---	---	---
Beryllium (Be)	mg/L	< 0.00004	---	---	---	---	< 0.00004	---	---	---	---	< 0.00004	---	---	---
Boron (B)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	0.003	---	---	---
Bismuth (Bi)	mg/L	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---
Cadmium (Cd)	mg/L	< 0.00006	---	---	---	---	< 0.00006	---	---	---	---	< 0.00006	---	---	---
Cobalt (Co)	mg/L	0.00003	---	---	---	---	0.000027	---	---	---	---	0.000017	---	---	---
Chromium (Cr)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	< 0.0003	---	---	---
Copper (Cu)	mg/L	0.0003	---	---	---	---	0.0001	---	---	---	---	0.0008	---	---	---
Potassium (K)	mg/L	0.46	---	---	---	---	0.43	---	---	---	---	0.43	---	---	---
Lithium (Li)	mg/L	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---
Magnesium (Mg)	mg/L	0.058	---	---	---	---	0.035	---	---	---	---	0.059	---	---	---
Manganese (Mn)	mg/L	0.00089	---	---	---	---	0.00043	---	---	---	---	0.00095	---	---	---
Molydenum (Mo)	mg/L	< 0.00005	---	---	---	---	< 0.00005	---	---	---	---	< 0.00005	---	---	---
Sodium (Na)	mg/L	0.04	---	---	---	---	< 0.01	---	---	---	---	0.08	---	---	---
Nickel (Ni)	mg/L	< 0.0007	---	---	---	---	< 0.0007	---	---	---	---	< 0.0007	---	---	---
Phosphorous (P)	mg/L	< 0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---	---	---
Lead (Pb)	mg/L	0.00013	---	---	---	---	0.00004	---	---	---	---	0.00012	---	---	---
Antimony (Sb)	mg/L	0.0009	---	---	---	---	0.001	---	---	---	---	0.0008	---	---	---
Selenium (Se)	mg/L	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---
Tin (Sn)	mg/L	< 0.0003	---	---	---	---	< 0.0003	---	---	---	---	0.0033	---	---	---
Strontium (Sr)	mg/L	0.0013	---	---	---	---	0.0014	---	---	---	---	0.0015	---	---	---
Titanium (Ti)	mg/L	< 0.0002	---	---	---	---	< 0.0002	---	---	---	---	< 0.0002	---	---	---
Thallium (Tl)	mg/L	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---
Uranium (U)	mg/L	0.00006	---	---	---	---	0.00009	---	---	---	---	0.00012	---	---	---
Vanadium (V)	mg/L	0.0002	---	---	---	---	0.00017	---	---	---	---	0.00018	---	---	---
Tungsten (W)	mg/L	0.00008	---	---	---	---	0.00008	---	---	---	---	< 0.00007	---	---	---
Yttrium (Y)	mg/L	0.000005	---	---	---	---	< 0.000005	---	---	---	---	0.000005	---	---	---
Zinc (Zn)	mg/L	0.0029	---	---	---	---	0.0009	---	---	---	---	0.002	---	---	---

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	124	125	126	127	128	129	130	131	132	133	134	135	136
Date		Sep 4, 07	Sep 11, 07	Sep 18, 07	Sep 25, 07	Oct 02, 07	Oct 09, 07	Oct 16, 07	Oct 23, 07	Oct 30, 07	Nov 06, 07	Nov 13, 07	Nov 20, 07	Nov 27, 07
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		969	988	974	990	998	1000	993	998	938	1001	957	870	*
pH	Effluent (units)	5.69	6.65	6.59	6.87	6.60	6.78	6.28	4.80	6.54	6.40	6.66	6.69	6.76
Acidity	as $CaCO_3$ (mg/L)	4	< 2	< 2	< 2	< 2	< 2	< 2	3	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	2	3	2	3	2	2	2	< 2	12	< 2	3	3	4
Conductivity	µmhos/cm	20	18	13	14	8	14	8	18	11	9	9	1480	16
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	1.21	1.22	1.17	1.11	1.4	1.12	1.14	1.18	1.47	1.2	1.29	1.31	1.97
Iron (Fe)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---	< 0.2	---
Nitrite (NO_2)	as N mg/L	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---	< 0.06	---
Nitrate (NO_3)	as N mg/L	---	< 0.05	---	---	---	---	< 0.05	---	---	---	---	< 0.05	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	< 2	---	---	---	---	< 2	---	---	---	---	< 2	---
Ammonia	mg/L	---	< 0.1	---	---	---	---	0.2	---	---	---	---	< 0.1	---
Mercury (Hg)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Silver (Ag)	mg/L	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---
Aluminum (Al)	mg/L	---	0.02	---	---	---	---	0.01	---	---	---	---	0.01	---
Arsenic (As)	mg/L	---	0.0011	---	---	---	---	0.0005	---	---	---	---	0.0005	---
Barium (Ba)	mg/L	---	0.00013	---	---	---	---	0.00012	---	---	---	---	0.00017	---
Beryllium (Be)	mg/L	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---
Boron (B)	mg/L	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	0.032	---
Bismuth (Bi)	mg/L	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---
Cadmium (Cd)	mg/L	---	< 0.000003	---	---	---	---	< 0.000003	---	---	---	---	0.000007	---
Cobalt (Co)	mg/L	---	0.000019	---	---	---	---	0.000017	---	---	---	---	0.000126	---
Chromium (Cr)	mg/L	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---	0.0119	---
Copper (Cu)	mg/L	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---
Potassium (K)	mg/L	---	0.41	---	---	---	---	0.38	---	---	---	---	0.46	---
Lithium (Li)	mg/L	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---	< 0.002	---
Magnesium (Mg)	mg/L	---	0.049	---	---	---	---	0.046	---	---	---	---	0.051	---
Manganese (Mn)	mg/L	---	0.00087	---	---	---	---	0.001	---	---	---	---	0.00314	---
Molydenum (Mo)	mg/L	---	< 0.00001	---	---	---	---	0.00007	---	---	---	---	0.00004	---
Sodium (Na)	mg/L	---	0.03	---	---	---	---	0.03	---	---	---	---	0.04	---
Nickel (Ni)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	0.0079	---
Phosphorous (P)	mg/L	---	0.01	---	---	---	---	< 0.01	---	---	---	---	< 0.01	---
Lead (Pb)	mg/L	---	0.00007	---	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---
Antimony (Sb)	mg/L	---	0.00051	---	---	---	---	0.00054	---	---	---	---	0.00054	---
Selenium (Se)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---	< 0.001	---
Tin (Sn)	mg/L	---	0.00012	---	---	---	---	0.00008	---	---	---	---	< 0.00001	---
Strontium (Sr)	mg/L	---	0.0012	---	---	---	---	0.0011	---	---	---	---	0.0013	---
Titanium (Ti)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---
Thallium (Tl)	mg/L	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---	< 0.000002	---
Uranium (U)	mg/L	---	0.000084	---	---	---	---	0.000089	---	---	---	---	0.000126	---
Vanadium (V)	mg/L	---	0.00019	---	---	---	---	0.00017	---	---	---	---	< 0.00003	---
Tungsten (W)	mg/L	---	0.00016	---	---	---	---	0.0001	---	---	---	---	0.00007	---
Yttrium (Y)	mg/L	---	< 0.000001	---	---	---	---	0.000002	---	---	---	---	0.000009	---
Zinc (Zn)	mg/L	---	0.005	---	---	---	---	0.001	---	---	---	---	0.003	---

Humidity Cell Results for Rock Sample 100914 (Siltstone)

S-Total:	<0.01%
S^{2-}:	<0.01%
NP:	9.5 t CaCO3/1000 t
CaNP:	0.83 t CaCO3/1000 t
AP:	0.31 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	137	138	139	140	141	142	143	144	145	146	147	148	149
Date		Dec 04, 07	Dec 11, 07	Dec 18, 07	Dec 24, 07	Jan 02, 08	Jan 08, 08	Jan 15, 08	Jan 22, 08	Jan 29, 08	Feb 05, 08	Feb 12, 08	Feb 19, 08	Feb 26, 08
Leachate Volume Added (mL)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Leachate Volume Recovered (mL)		991	988	996	959	988	992	964	984	993	982	993	984	996
pH	Effluent (units)	6.57	6.54	6.63	6.43	6.32	6.60	6.53	6.56	6.76	6.53	5.12	6.08	6.03
Acidity	as $CaCO_3$ (mg/L)	< 2	< 2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as $CaCO_3$ (mg/L)	3	4	3	2	2	3	3	3	3	3	64	3	< 2
Conductivity	µmhos/cm	8	11	10	8	8	10	10	10	10	11	16	10	10
Sulphate (SO_4)	mg/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
Calcium (Ca)	mg/L	1.25	1.26	1.18	1.02	1.13	1.24	1.14	1.21	1.2	1.13	1.13	1.1	1.11
Iron (Fe)	mg/L	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.01
Chloride (Cl)	mg/L	---	---	---	< 0.2	---	---	---	---	< 0.2	---	---	---	---
Nitrite (NO_2)	as N mg/L	---	---	---	< 0.06	---	---	---	---	< 0.06	---	---	---	---
Nitrate (NO_3)	as N mg/L	---	---	---	0.07	---	---	---	---	< 0.05	---	---	---	---
Carbonate (CO_3)	as $CaCO_3$ (mg/L)	---	---	---	< 2	---	---	---	---	< 2	---	---	---	---
Ammonia	mg/L	---	---	---	< 0.1	---	---	---	---	< 0.1	---	---	---	---
Mercury (Hg)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Silver (Ag)	mg/L	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Aluminum (Al)	mg/L	---	---	---	< 0.01	---	---	---	---	0.01	---	---	---	---
Arsenic (As)	mg/L	---	---	---	0.0005	---	---	---	---	0.0004	---	---	---	---
Barium (Ba)	mg/L	---	---	---	0.00014	---	---	---	---	0.00015	---	---	---	---
Beryllium (Be)	mg/L	---	---	---	< 0.00002	---	---	---	---	< 0.00002	---	---	---	---
Boron (B)	mg/L	---	---	---	0.038	---	---	---	---	< 0.002	---	---	---	---
Bismuth (Bi)	mg/L	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Cadmium (Cd)	mg/L	---	---	---	< 0.000003	---	---	---	---	< 0.000003	---	---	---	---
Cobalt (Co)	mg/L	---	---	---	0.00002	---	---	---	---	0.000012	---	---	---	---
Chromium (Cr)	mg/L	---	---	---	< 0.0005	---	---	---	---	< 0.0005	---	---	---	---
Copper (Cu)	mg/L	---	---	---	< 0.0005	---	---	---	---	0.0006	---	---	---	---
Potassium (K)	mg/L	---	---	---	0.35	---	---	---	---	0.42	---	---	---	---
Lithium (Li)	mg/L	---	---	---	< 0.002	---	---	---	---	< 0.002	---	---	---	---
Magnesium (Mg)	mg/L	---	---	---	0.04	---	---	---	---	0.041	---	---	---	---
Manganese (Mn)	mg/L	---	---	---	0.00099	---	---	---	---	0.00112	---	---	---	---
Molydenum (Mo)	mg/L	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Sodium (Na)	mg/L	---	---	---	0.05	---	---	---	---	0.07	---	---	---	---
Nickel (Ni)	mg/L	---	---	---	0.0002	---	---	---	---	0.0001	---	---	---	---
Phosphorous (P)	mg/L	---	---	---	0.01	---	---	---	---	< 0.01	---	---	---	---
Lead (Pb)	mg/L	---	---	---	0.00005	---	---	---	---	0.00006	---	---	---	---
Antimony (Sb)	mg/L	---	---	---	0.00037	---	---	---	---	0.00034	---	---	---	---
Selenium (Se)	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001	---	---	---	---
Tin (Sn)	mg/L	---	---	---	< 0.00001	---	---	---	---	< 0.00001	---	---	---	---
Strontium (Sr)	mg/L	---	---	---	0.001	---	---	---	---	0.0012	---	---	---	---
Titanium (Ti)	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001	---	---	---	---
Thallium (Tl)	mg/L	---	---	---	< 0.000002	---	---	---	---	< 0.000002	---	---	---	---
Uranium (U)	mg/L	---	---	---	0.000094	---	---	---	---	0.000091	---	---	---	---
Vanadium (V)	mg/L	---	---	---	0.00012	---	---	---	---	0.00034	---	---	---	---
Tungsten (W)	mg/L	---	---	---	0.00004	---	---	---	---	0.00005	---	---	---	---
Yttrium (Y)	mg/L	---	---	---	0.000001	---	---	---	---	0.000002	---	---	---	---
Zinc (Zn)	mg/L	---	---	---	0.003	---	---	---	---	0.002	---	---	---	---

Humidity Cell Results for Bulk Rougher Tailings

S-Total:	0.08%
S^{2-}:	0.02%
NP:	24.8 t CaCO3/1000 t
CaNP:	10.873 t CaCO3/1000 t
AP:	0.54 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8	9	10	11
Date		10275-FEB09	10276-FEB09	10046-MAR09	10048-MAR09	10071-MAR09	11129-MAR09	10010-APR09	10037-APR09	10049-APR09	10073-APR09	11231-APR09	10017-MAY09
Hum Cell Leachate Vol	mLs	569	898	953	912	893	884	886	853	931	821	830	868
pH	units	7.53	*7.60	7.44	7.55	7.57	7.46	7.62	7.47	7.77	7.69	7.28	7.46
Acidity	mg/L as $CaCO_3$	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Alkalinity	mg/L as $CaCO_3$	16	16	17	16	13	11	10	9	9	11	8	8
Conductivity	uS/cm	79	82	82	65	46	49	50	55	49	51	42	49
SO_4	mg/L	15	17	18	13	9.5	8.4	11	12	12	9.1	9.6	11
Hg	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	---	---	---	---	< 0.0001	---
Ag	mg/L	< 0.00001	< 0.00001	0.00010	< 0.00001	0.00011	< 0.00001	---	---	---	---	0.00004	---
Al	mg/L	0.05	0.03	0.03	0.02	0.02	0.03	---	---	---	---	0.04	---
As	mg/L	0.0967	0.0447	0.0455	0.0331	0.0340	0.0313	---	---	---	---	0.0279	---
B	mg/L	0.0109	0.0115	0.0138	0.0107	0.0068	0.0060	---	---	---	---	0.0075	---
Ba	mg/L	0.0006	< 0.0002	0.0014	0.0004	0.0006	0.0010	---	---	---	---	0.0006	---
Be	mg/L	< 0.0001	< 0.00002	< 0.0001	< 0.0001	< 0.0001	< 0.0001	---	---	---	---	< 0.0001	---
Bi	mg/L	0.00091	0.00097	0.00184	0.00141	0.00158	0.00176	---	---	---	---	0.00172	---
Ca	mg/L	6.65	7.11	7.30	6.31	5.23	4.76	---	---	---	---	4.25	---
Cd	mg/L	< 0.000003	< 0.000003	0.000046	0.000005	0.000114	< 0.000003	---	---	---	---	0.000017	---
Co	mg/L	0.000395	0.000246	0.000404	0.000237	0.000244	0.000135	---	---	---	---	0.000172	---
Cr	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---	---	< 0.0005	---
Cu	mg/L	< 0.001	< 0.001	< 0.001	0.004	< 0.001	0.032	---	---	---	---	< 0.001	---
Fe	mg/L	0.02	0.02	0.05	0.03	0.02	0.02	---	---	---	---	0.03	---
K	mg/L	8.89	6.80	7.20	5.51	4.21	3.80	---	---	---	---	3.60	---
Li	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---	---	---	---	< 0.002	---
Mg	mg/L	1.32	1.60	1.76	1.36	0.938	0.836	---	---	---	---	0.867	---
Mn	mg/L	0.004	0.009	0.012	0.012	0.009	0.008	---	---	---	---	0.008	---
Mo	mg/L	0.00361	0.00372	0.00406	0.00290	0.00179	0.00148	---	---	---	---	0.00126	---
Na	mg/L	2.13	1.81	1.69	2.16	0.84	0.67	---	---	---	---	0.47	---
Ni	mg/L	0.0003	0.0002	0.0002	0.0004	0.0002	< 0.0001	---	---	---	---	< 0.0001	---
Pb	mg/L	0.00003	0.00022	0.00017	0.00009	0.00011	0.00003	---	---	---	---	0.00005	---
Sb	mg/L	0.0046	0.0048	0.0057	0.0045	0.0035	0.0032	---	---	---	---	0.0034	---
Se	mg/L	0.004	0.002	0.002	0.003	0.003	0.002	---	---	---	---	0.002	---
Sn	mg/L	0.0319	0.00814	0.00358	0.00190	0.00093	0.00083	---	---	---	---	0.00130	---
Sr	mg/L	0.0111	0.0119	0.0138	0.0104	0.0078	0.0071	---	---	---	---	0.0072	---
Ti	mg/L	< 0.001	0.0003	< 0.001	< 0.001	< 0.001	< 0.001	---	---	---	---	< 0.001	---
Tl	mg/L	0.000007	0.000003	0.000130	0.000009	0.000117	< 0.0002	---	---	---	---	< 0.0002	---
U	mg/L	0.00323	0.0116	0.0151	0.0121	0.00668	0.00601	---	---	---	---	0.00560	---
V	mg/L	< 0.001	0.00010	< 0.001	< 0.001	< 0.001	< 0.001	---	---	---	---	< 0.001	---
W	mg/L	0.00352	0.00322	0.00327	0.00209	0.00135	0.00119	---	---	---	---	0.00120	---
Y	mg/L	0.000005	0.000023	0.000092	0.000011	0.000098	0.000004	---	---	---	---	0.000027	---
Zn	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	---	---	---	---	< 0.01	---

S-Total:	0.08%
S^{2-}:	0.02%
NP:	24.8 t CaCO3/1000 t
CaNP:	10.873 t CaCO3/1000 t
AP:	0.54 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	12	13	14	15	16	17	18	19	20
Date		10037-MAY09	10066-MAY09	11109-MAY09	10017-JUN09	10035-JUN09	10053-JUN09	11099-JUN09	11132-JUN09	10016-JUL09
Hum Cell Leachate Vol	mLs	858	865	859	852	868	850	821	851	855
pH	units	7.53	7.44	7.47	7.51	7.53	7.31	7.55	7.35	7.41
Acidity	mg/L as $CaCO_3$	<2	<2	<2	<2	<2	<2	<2	<2	<2
Alkalinity	mg/L as $CaCO_3$	8	9	7	7	9	7	8	8	7
Conductivity	uS/cm	38	48	37	34	43	36	30	36	33
SO_4	mg/L	8.0	8.1	8.0	6.3	7.0	3.8	4.3	5	4
Hg	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Ag	mg/L	---	---	---	< 0.00001	---	---	---	---	< 0.00001
Al	mg/L	---	---	---	< 0.01	---	---	---	---	0.02
As	mg/L	---	---	---	0.0264	---	---	---	---	0.0247
B	mg/L	---	---	---	0.0035	---	---	---	---	0.0032
Ba	mg/L	---	---	---	0.0002	---	---	---	---	0.0004
Be	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Bi	mg/L	---	---	---	0.00112	---	---	---	---	0.00275
Ca	mg/L	---	---	---	3.05	---	---	---	---	3.15
Cd	mg/L	---	---	---	< 0.000003	---	---	---	---	< 0.000003
Co	mg/L	---	---	---	0.000127	---	---	---	---	0.000143
Cr	mg/L	---	---	---	< 0.0005	---	---	---	---	< 0.0005
Cu	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001
Fe	mg/L	---	---	---	0.02	---	---	---	---	0.03
K	mg/L	---	---	---	2.95	---	---	---	---	2.56
Li	mg/L	---	---	---	< 0.002	---	---	---	---	< 0.002
Mg	mg/L	---	---	---	0.615	---	---	---	---	0.5
Mn	mg/L	---	---	---	0.005	---	---	---	---	0.006
Mo	mg/L	---	---	---	0.00084	---	---	---	---	0.00054
Na	mg/L	---	---	---	0.33	---	---	---	---	0.2
Ni	mg/L	---	---	---	< 0.0001	---	---	---	---	< 0.0001
Pb	mg/L	---	---	---	0.00003	---	---	---	---	0.00008
Sb	mg/L	---	---	---	0.0031	---	---	---	---	0.003
Se	mg/L	---	---	---	0.002	---	---	---	---	0.002
Sn	mg/L	---	---	---	0.00102	---	---	---	---	0.00067
Sr	mg/L	---	---	---	0.0047	---	---	---	---	0.0047
Ti	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001
Tl	mg/L	---	---	---	< 0.0002	---	---	---	---	< 0.0002
U	mg/L	---	---	---	0.00454	---	---	---	---	0.00419
V	mg/L	---	---	---	< 0.001	---	---	---	---	< 0.001
W	mg/L	---	---	---	0.00104	---	---	---	---	0.00091
Y	mg/L	---	---	---	0.000009	---	---	---	---	0.000003
Zn	mg/L	---	---	---	< 0.01	---	---	---	---	< 0.01

Humidity Cell Results for PP#14

S-Total:	0.08%
S^{2-}:	0.02%
NP:	22.5 t CaCO3/1000 t
CaNP:	6.74 t CaCO3/1000 t
AP:	0.62 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	0	1	2	3	4	5	6	7	8
Date		10545-APR08	10635-APR08	10067-MAY07	10129-MAY07	10155-MAY07	10705-MAY08	10019-JUN08	10052-JUN08	10102-JUN08
Leachate	mL	864	919	936	940	942	981	936	974	973
pH	Effluent (units)	7.19	7.05	6.96	6.89	7.75	7.168	6.97	7.04	7.33
Acidity	as CaCO3 (mg/L)	< 2	< 2	< 2	< 2	< 2	*< 2	< 2	< 2	< 2
Alkalinity	as CaCO3 (mg/L)	11	7	7	6	4	7	3	6	13
Conductivity	µmhos/cm	60	53	53	57	70	58.6	51	62	80
Sulphate (SO4)	mg/L	6.3	9.2	10	11	15	18	12	15	20
Calcium (Ca)	mg/L	4.91	3.29	3.4	3.77	4.46	5.99	---	---	---
Iron (Fe)	mg/L	0.12	0.03	0.02	0.03	0.02	0.02	---	---	---
Silver (Ag)	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00004	< 0.00001	---	---	---
Aluminum (Al)	mg/L	0.04	< 0.01	< 0.01	0.01	< 0.01	< 0.01	---	---	---
Arsenic (As)	mg/L	0.0495	0.0306	0.0246	0.0211	0.0217	0.0251	---	---	---
Barium (Ba)	mg/L	0.0012	0.0006	0.0009	0.001	0.001	0.0015	---	---	---
Beryllium (Be)	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	---	---	---
Boron (B)	mg/L	0.0067	0.0076	0.0076	0.0072	0.0085	0.0102	---	---	---
Bismuth (Bi)	mg/L	0.00247	0.00067	0.00037	0.00049	0.0005	0.0005	---	---	---
Cadmium (Cd)	mg/L	< 0.000003	0.000003	< 0.000003	< 0.000003	0.000005	0.000011	---	---	---
Cobalt (Co)	mg/L	0.000942	0.00103	0.000866	0.000995	0.000957	0.0012	---	---	---
Chromium (Cr)	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	---	---	---
Copper (Cu)	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---	---	---
Potassium (K)	mg/L	4.28	4.91	4.43	4.52	4.93	5.9	---	---	---
Lithium (Li)	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	---	---	---
Magnesium (Mg)	mg/L	0.535	0.687	0.768	0.9	1.18	1.53	---	---	---
Manganese (Mn)	mg/L	0.008	0.01	0.01	0.012	0.014	0.02	---	---	---
Molydenum (Mo)	mg/L	0.00248	0.00265	0.0025	0.00249	0.00306	0.00358	---	---	---
Nickel (Ni)	mg/L	0.0006	0.0002	0.0003	0.0003	0.0003	0.0006	---	---	---
Lead (Pb)	mg/L	0.00009	0.00003	< 0.00002	< 0.00002	< 0.00002	0.00004	---	---	---
Antimony (Sb)	mg/L	0.00253	0.00234	0.00284	0.00288	0.00228	0.00461	---	---	---
Selenium (Se)	mg/L	< 0.001	0.001	< 0.001	< 0.001	0.001	0.002	---	---	---
Tin (Sn)	mg/L	0.00548	0.00757	0.00781	0.00605	0.00562	0.00646	---	---	---
Strontium (Sr)	mg/L	0.0068	0.0064	0.007	0.0076	0.0093	0.0146	---	---	---
Titanium (Ti)	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---	---	---
Thallium (Tl)	mg/L	0.000098	0.000015	0.000009	0.000002	< 0.000002	0.000004	---	---	---
Uranium (U)	mg/L	0.00118	0.0017	0.00191	0.0019	0.00251	0.00383	---	---	---
Vanadium (V)	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	---	---	---
Tungsten (W)	mg/L	0.00183	0.00103	0.00096	0.00058	0.00072	0.00088	---	---	---
Yttrium (Y)	mg/L	0.000018	0.000011	0.000006	0.000007	0.000005	0.000006	---	---	---
Zinc (Zn)	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	---	---	---

Humidity Cell Results for PP#14

S-Total:	0.08%
S^{2-}:	0.02%
NP:	22.5 t CaCO3/1000 t
CaNP:	6.74 t CaCO3/1000 t
AP:	0.62 t CaCO3/1000 t
Weight:	1000 g

Weeks	#	9	10	11	12	13	14	15	16	17
Date		10381-JUN08	10021-JUL08	10048-JUL08	10125-JUL08	10151-JUL08	10459-JUL08	10022-AUG08	10048-AUG08	10430-AUG08
Leachate	mL	985	946	966	930	910	921	901	912	797
pH	Effluent (units)	6.96	6.93	6.9	6.57	6.62	6.75	6.89	7.01	7.4
Acidity	as CaCO3 (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as CaCO3 (mg/L)	9	5	6	4	4	4	6	5	12
Conductivity	µmhos/cm	68	55	73	48	55	51	59	84	165
Sulphate (SO4)	mg/L	20	14	20	13	16	15	17	19	37
Calcium (Ca)	mg/L	---	4.33	---	---	---	---	5.23	---	---
Iron (Fe)	mg/L	---	0.03	---	---	---	---	0.03	---	---
Silver (Ag)	mg/L	---	< 0.00001	---	---	---	---	0.00007	---	---
Aluminum (Al)	mg/L	---	< 0.01	---	---	---	---	< 0.01	---	---
Arsenic (As)	mg/L	---	0.0209	---	---	---	---	0.0253	---	---
Barium (Ba)	mg/L	---	0.001	---	---	---	---	0.0007	---	---
Beryllium (Be)	mg/L	---	< 0.0001	---	---	---	---	< 0.0001	---	---
Boron (B)	mg/L	---	0.0059	---	---	---	---	0.0042	---	---
Bismuth (Bi)	mg/L	---	0.00043	---	---	---	---	0.00089	---	---
Cadmium (Cd)	mg/L	---	< 0.000003	---	---	---	---	0.000067	---	---
Cobalt (Co)	mg/L	---	0.000661	---	---	---	---	0.000599	---	---
Chromium (Cr)	mg/L	---	< 0.0005	---	---	---	---	< 0.0005	---	---
Copper (Cu)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---
Potassium (K)	mg/L	---	4.03	---	---	---	---	4.13	---	---
Lithium (Li)	mg/L	---	< 0.002	---	---	---	---	< 0.002	---	---
Magnesium (Mg)	mg/L	---	1.17	---	---	---	---	1.16	---	---
Manganese (Mn)	mg/L	---	0.009	---	---	---	---	0.008	---	---
Molydenum (Mo)	mg/L	---	0.00202	---	---	---	---	0.00171	---	---
Nickel (Ni)	mg/L	---	< 0.0001	---	---	---	---	0.0002	---	---
Lead (Pb)	mg/L	---	< 0.00002	---	---	---	---	0.00007	---	---
Antimony (Sb)	mg/L	---	0.00328	---	---	---	---	0.0024	---	---
Selenium (Se)	mg/L	---	0.001	---	---	---	---	0.002	---	---
Tin (Sn)	mg/L	---	0.00099	---	---	---	---	0.00076	---	---
Strontium (Sr)	mg/L	---	0.0091	---	---	---	---	0.0097	---	---
Titanium (Ti)	mg/L	---	< 0.001	---	---	---	---	< 0.001	---	---
Thallium (Tl)	mg/L	---	< 0.000002	---	---	---	---	0.000076	---	---
Uranium (U)	mg/L	---	0.00201	---	---	---	---	0.00176	---	---
Vanadium (V)	mg/L	---	0.00003	---	---	---	---	< 0.001	---	---
Tungsten (W)	mg/L	---	0.00039	---	---	---	---	0.00038	---	---
Yttrium (Y)	mg/L	---	0.000003	---	---	---	---	0.000065	---	---
Zinc (Zn)	mg/L	---	< 0.01	---	---	---	---	< 0.01	---	---

Humidity Cell Results for PP#14

S-Total:	0.08%
S^{2-}:	0.02%
NP:	22.5 t CaCO3/1000 t
CaNP:	6.74 t CaCO3/1000 t
AP:	0.62 t CaCO3/1000 t
Weight:	1000 g

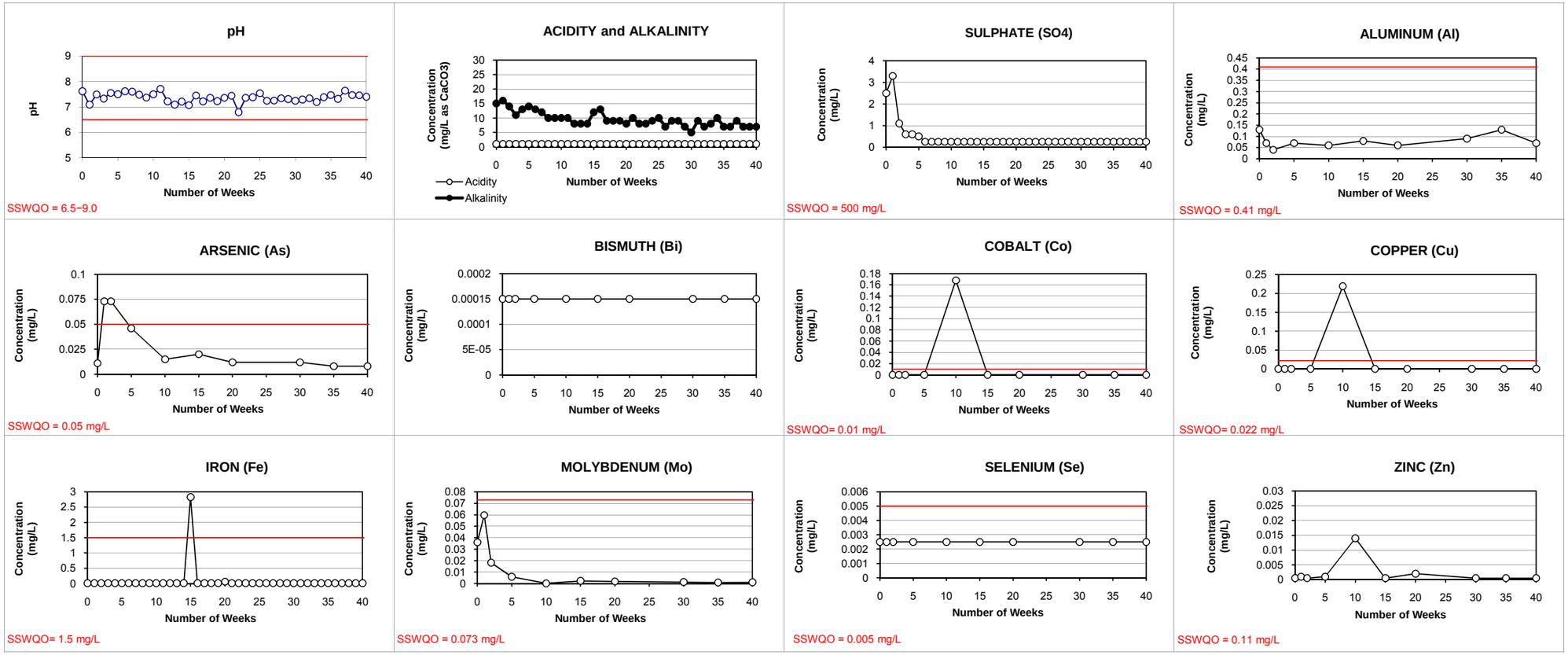
Weeks	#	18	19	20	21	22	23
Date		10504-AUG08	10021-SEP08	10049-SEP08	10213-SEP08	10440-SEP08	10060-OCT08
Leachate	mL	918	926	982	901	902	995
pH	Effluent (units)	6.94	7.11	7.14	6.88	6.96	7.05
Acidity	as CaCO3 (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2
Alkalinity	as CaCO3 (mg/L)	9	8	9	5	5	11
Conductivity	µmhos/cm	84	65	76	53	50	67
Sulphate (SO4)	mg/L	26	18	20	14	14	19
Calcium (Ca)	mg/L	---	---	7.41	---	---	---
Iron (Fe)	mg/L	---	---	< 0.01	---	---	---
Silver (Ag)	mg/L	---	---	0.00009	---	---	---
Aluminum (Al)	mg/L	---	---	0.01	---	---	---
Arsenic (As)	mg/L	---	---	0.0245	---	---	---
Barium (Ba)	mg/L	---	---	< 0.0002	---	---	---
Beryllium (Be)	mg/L	---	---	< 0.0001	---	---	---
Boron (B)	mg/L	---	---	0.006	---	---	---
Bismuth (Bi)	mg/L	---	---	0.00049	---	---	---
Cadmium (Cd)	mg/L	---	---	0.000005	---	---	---
Cobalt (Co)	mg/L	---	---	0.000968	---	---	---
Chromium (Cr)	mg/L	---	---	< 0.0005	---	---	---
Copper (Cu)	mg/L	---	---	< 0.001	---	---	---
Potassium (K)	mg/L	---	---	4.98	---	---	---
Lithium (Li)	mg/L	---	---	< 0.002	---	---	---
Magnesium (Mg)	mg/L	---	---	1.45	---	---	---
Manganese (Mn)	mg/L	---	---	0.014	---	---	---
Molydenum (Mo)	mg/L	---	---	0.00186	---	---	---
Nickel (Ni)	mg/L	---	---	0.0002	---	---	---
Lead (Pb)	mg/L	---	---	0.00007	---	---	---
Antimony (Sb)	mg/L	---	---	0.00541	---	---	---
Selenium (Se)	mg/L	---	---	0.003	---	---	---
Tin (Sn)	mg/L	---	---	0.00248	---	---	---
Strontium (Sr)	mg/L	---	---	0.0125	---	---	---
Titanium (Ti)	mg/L	---	---	< 0.001	---	---	---
Thallium (Tl)	mg/L	---	---	0.000053	---	---	---
Uranium (U)	mg/L	---	---	0.00526	---	---	---
Vanadium (V)	mg/L	---	---	< 0.001	---	---	---
Tungsten (W)	mg/L	---	---	0.00046	---	---	---
Yttrium (Y)	mg/L	---	---	0.000024	---	---	---
Zinc (Zn)	mg/L	---	---	< 0.01	---	---	---

APPENDIX VIII

Graphical Results of Selected Results of Kinetic Testing

Appendix VIII-1a

GEOCHEMISTRY OF HUMIDITY CELL 100859 Feldspar Porphyry
NICO PROJECT, FORTUNE MINERALS LIMITED



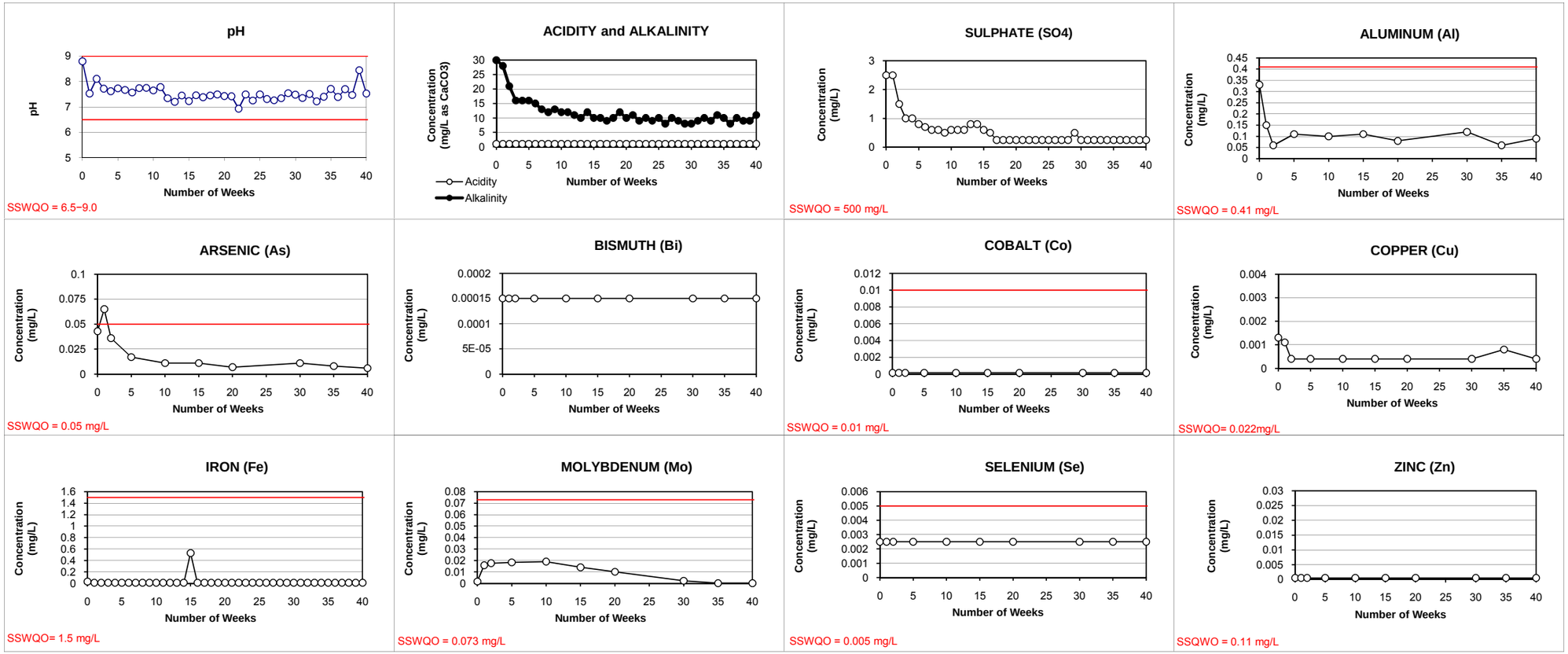
Total Sulphur (%):	0.05
Sulphide Sulphur (%):	0.02
Neutralization Potential (t $CaCO_3$/1000 t):	12.2
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	10.8
Acid Potential (t $CaCO_3$/1000 t):	0.62
Estimated Time to Sulphide Depletion:	24 Years
Estimated Time to Depletion of Neutralization Potential:	41 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

Drawn By: MD
Checked by: KAS / KJD

Appendix VIII-1b

GEOCHEMISTRY OF HUMIDITY CELL 100913 Feldspar Porphyry
NICO PROJECT, FORTUNE MINERALS LIMITED

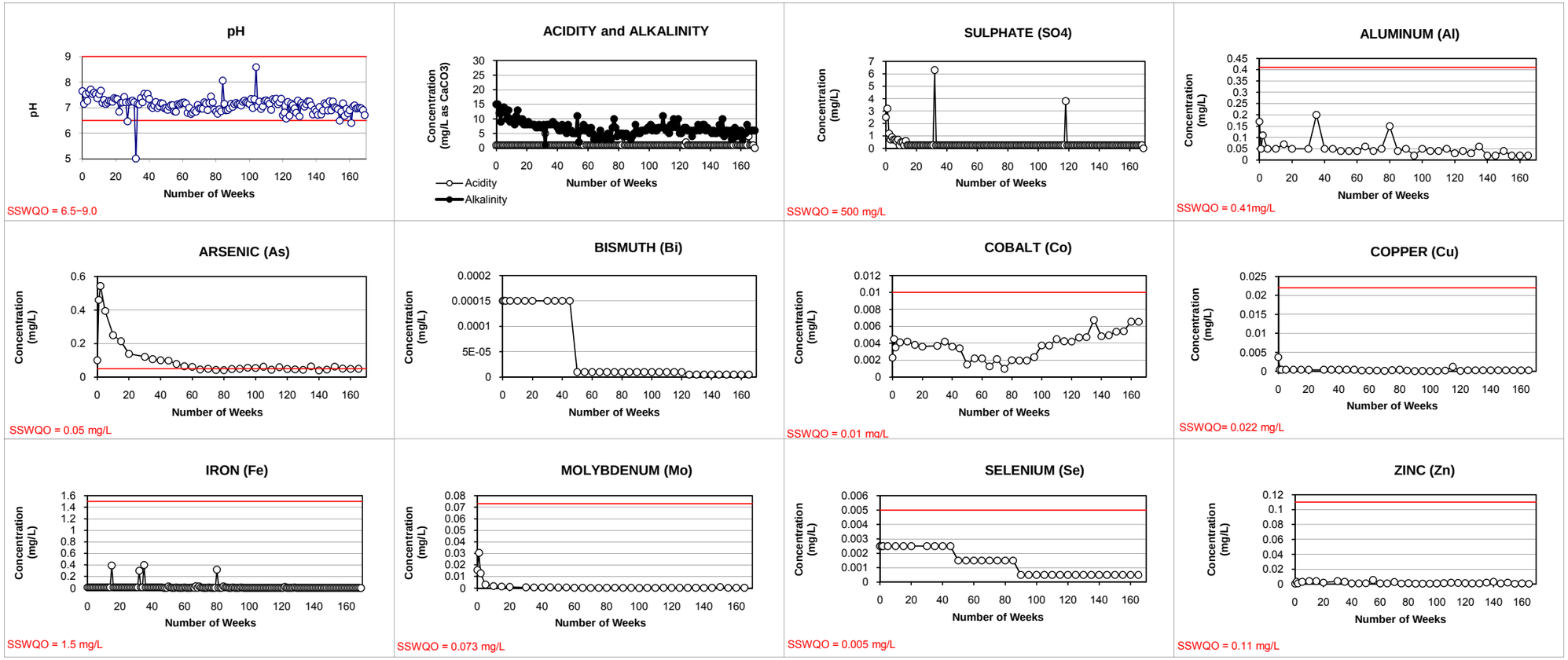


Total Sulphur (%):	0.07
Sulphide Sulphur (%):	0.04
Neutralization Potential (t $CaCO_3$/1000 t):	16.1
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	10
Acid Potential (t $CaCO_3$/1000 t):	1.2
Estimated Time to Sulphide Depletion:	48 Years
Estimated Time to Depletion of Neutralization Potential:	41 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

Appendix VIII-1c

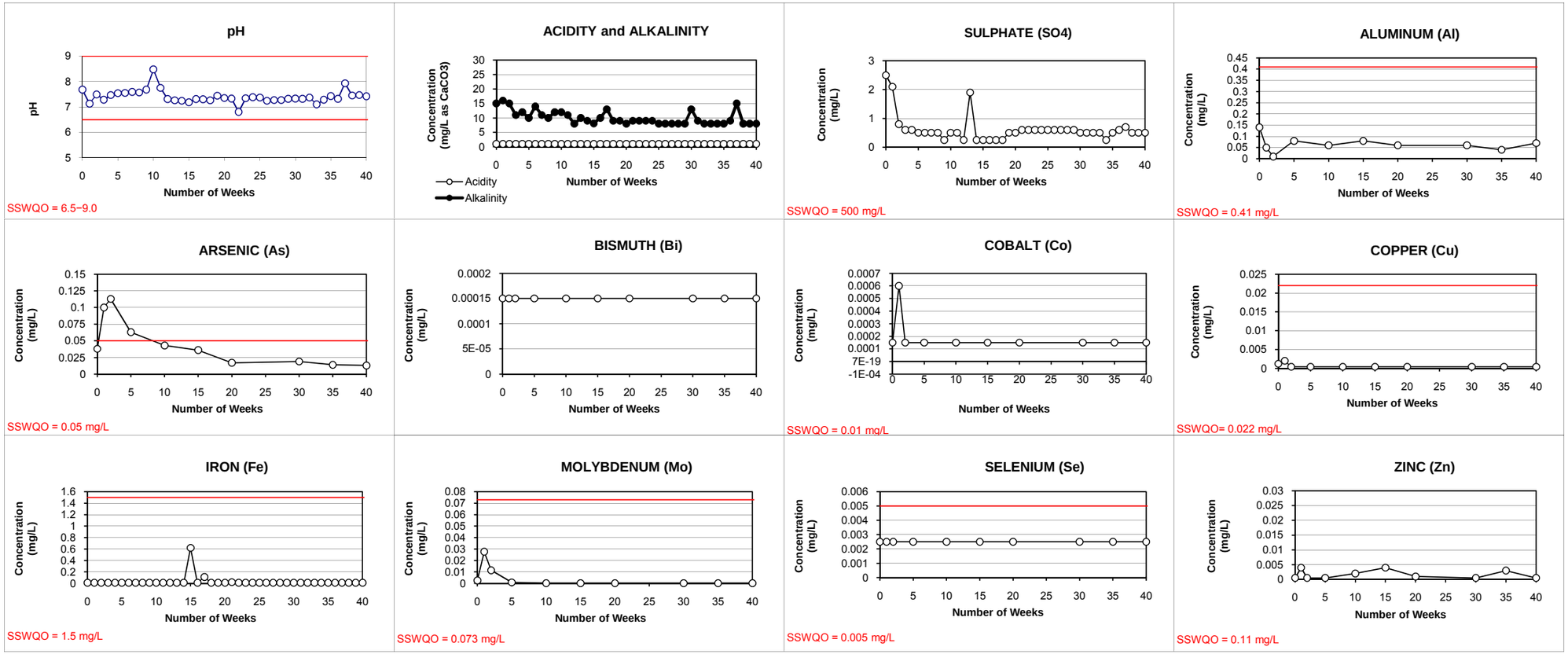
GEOCHEMISTRY OF HUMIDITY CELL 100863 Rhyolite
NICO PROJECT, FORTUNE MINERALS LIMITED



Site Specific Water Quality Objectives (SSWQO)

Total Sulphur (%):	0.03
Sulphide Sulphur (%):	<0.01
Neutralization Potential (t $CaCO_3$/1000 t):	11.2
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	8.3
Acid Potential (t $CaCO_3$/1000 t):	0.31
Estimated Time to Sulphide Depletion:	8 Years
Estimated Time to Depletion of Neutralization Potential:	45 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

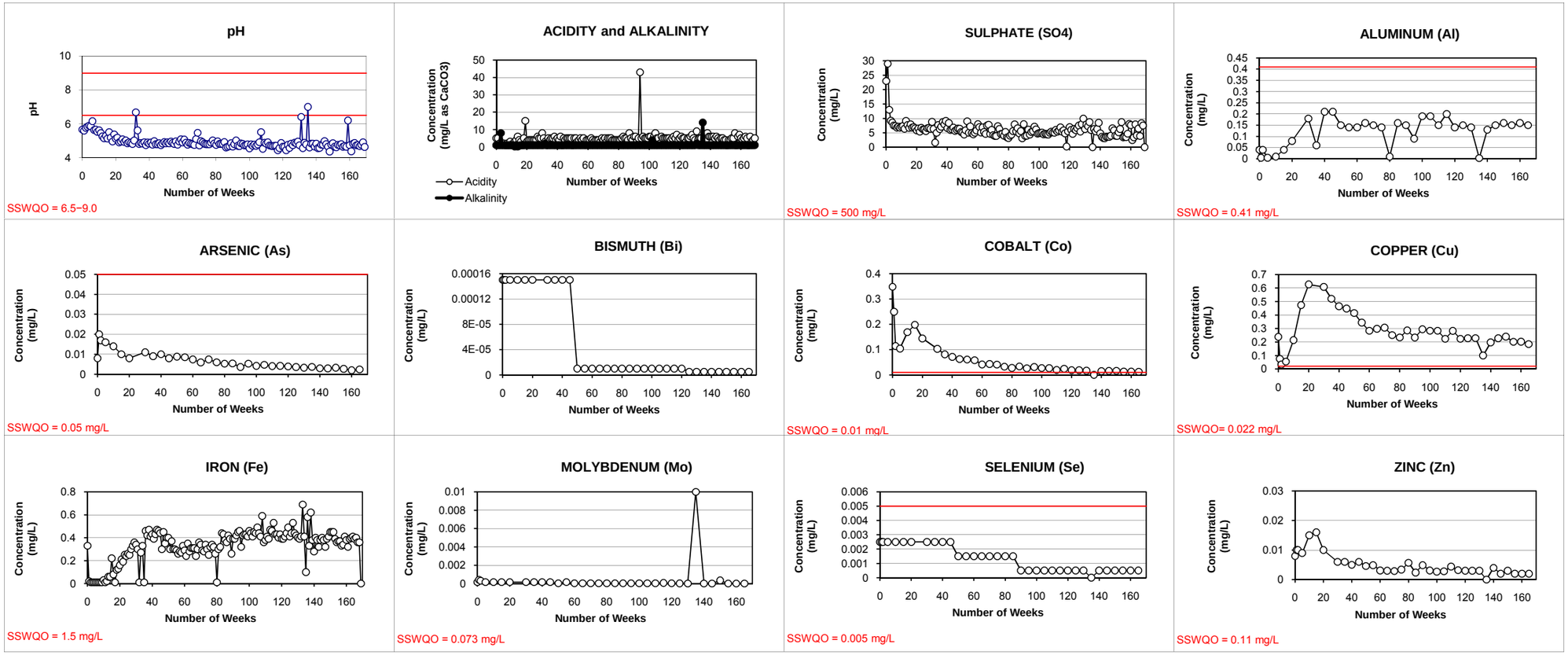


Total Sulphur (%):	0.05
Sulphide Sulphur (%):	0.01
Neutralization Potential (t $CaCO_3$/1000 t):	12.4
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	7.5
Acid Potential (t $CaCO_3$/1000 t):	0.31
Estimated Time to Sulphide Depletion:	10 Years
Estimated Time to Depletion of Neutralization Potential:	29 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

Appendix VIII-1j

GEOCHEMISTRY OF HUMIDITY CELL 100932 Rhyolite
NICO PROJECT, FORTUNE MINERALS LIMITED

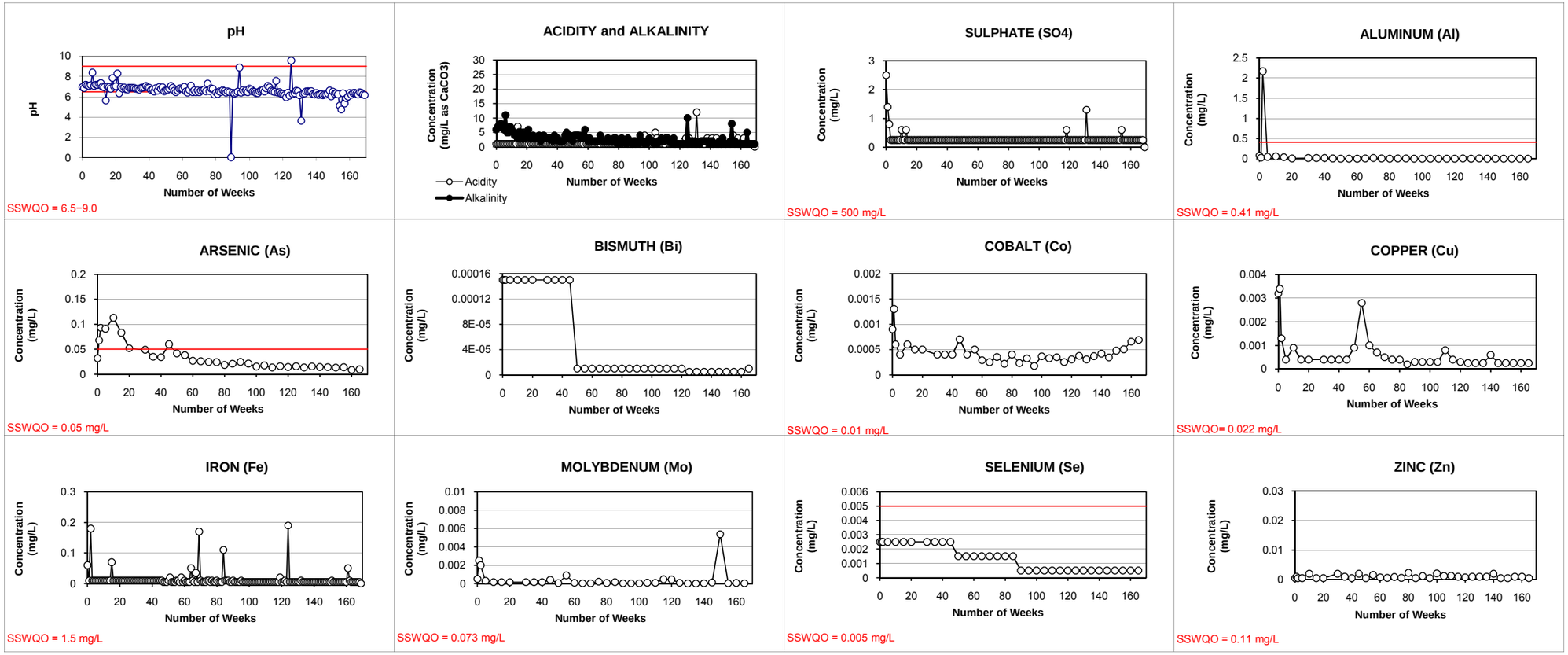


Total Sulphur (%):	0.59
Sulphide Sulphur (%):	0.49
Neutralization Potential (t $CaCO_3$/1000 t):	0
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	0.83
Acid Potential (t $CaCO_3$/1000 t):	15.4
Estimated Time to Sulphide Depletion:	45 Years
Estimated Time to Depletion of Neutralization Potential:	0 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

Appendix VIII-1j

GEOCHEMISTRY OF HUMIDITY CELL 100925 Breccia
NICO PROJECT, FORTUNE MINERALS LIMITED



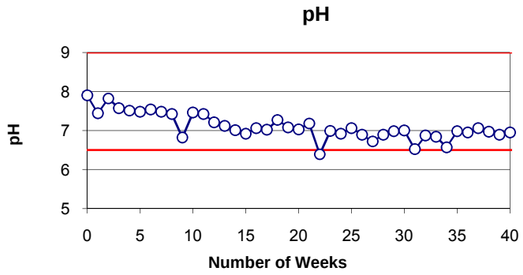
Total Sulphur (%):	0.02
Sulphide Sulphur (%):	0.01
Neutralization Potential (t $CaCO_3$/1000 t):	8.7
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	2.5
Acid Potential (t $CaCO_3$/1000 t):	0.31
Estimated Time to Sulphide Depletion:	9 Years
Estimated Time to Depletion of Neutralization Potential:	148 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

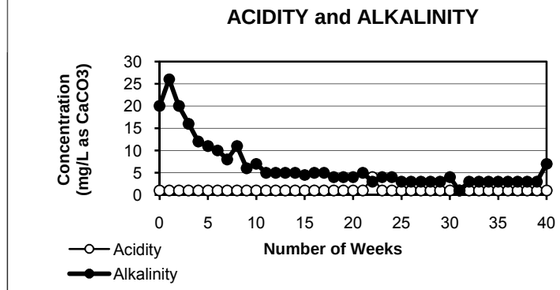
Drawn By: MD
Checked by: KAS / KJD

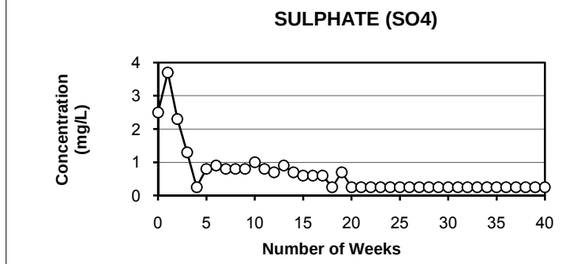
Appendix VIII-1j

GEOCHEMISTRY OF HUMIDITY CELL 100890 Black Rock Schist + Magnetite
NICO PROJECT, FORTUNE MINERALS LIMITED

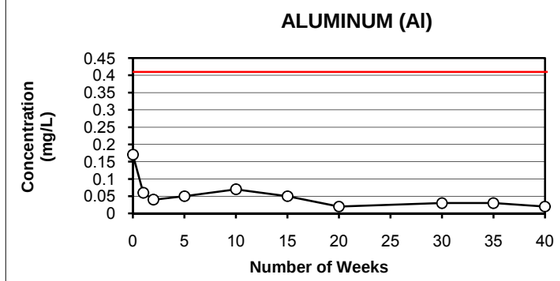


SSWQO = 6.5−9.0

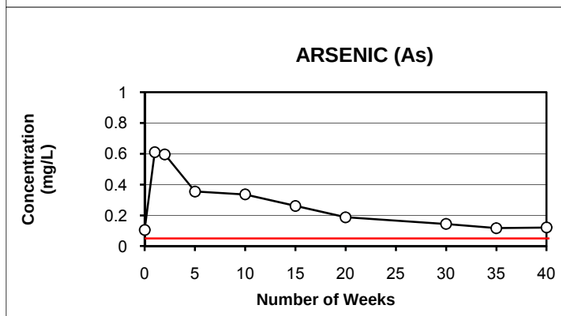




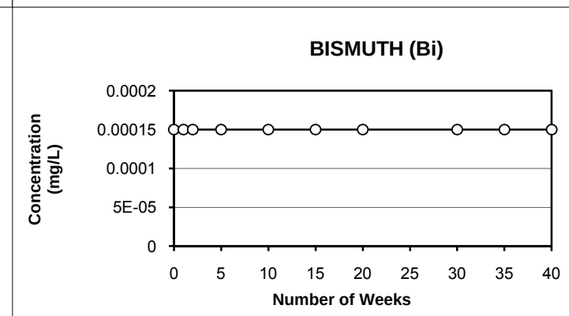
SSWQO = 500 mg/L

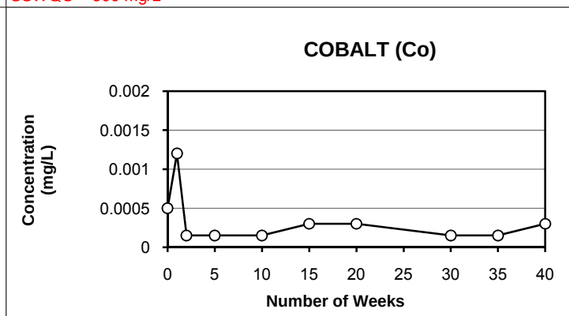


SSWQO = 0.41 mg/L

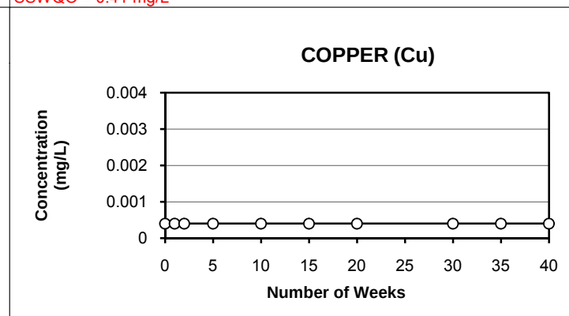


SSWQO = 0.05 mg/L

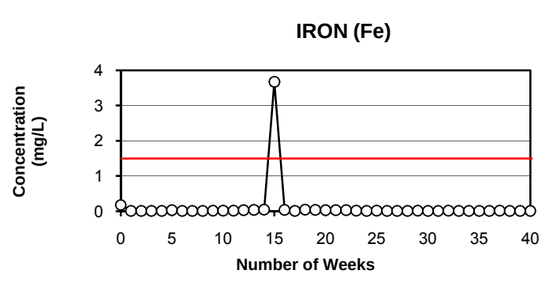




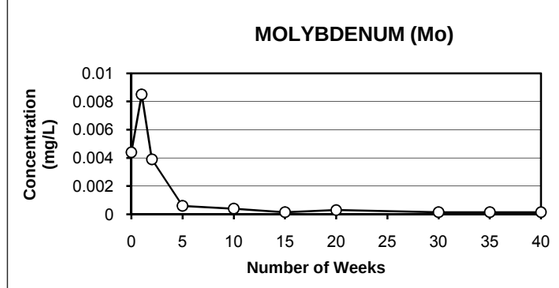
SSWQO = 0.01 mg/L



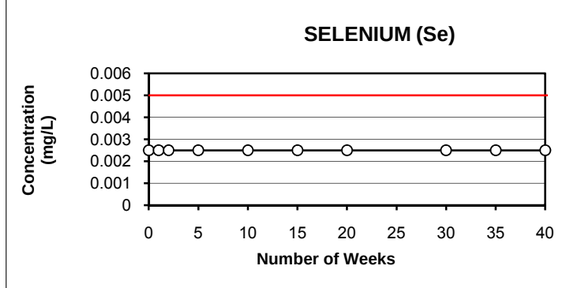
SSWQO= 0.022 mg/L



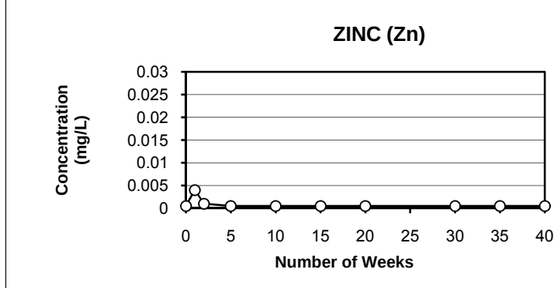
SSWQO = 1.5 mg/L



SSWQO = 0.073 mg/L



SSWQO = 0.005 mg/L



SSWQO = 0.11 mg/L

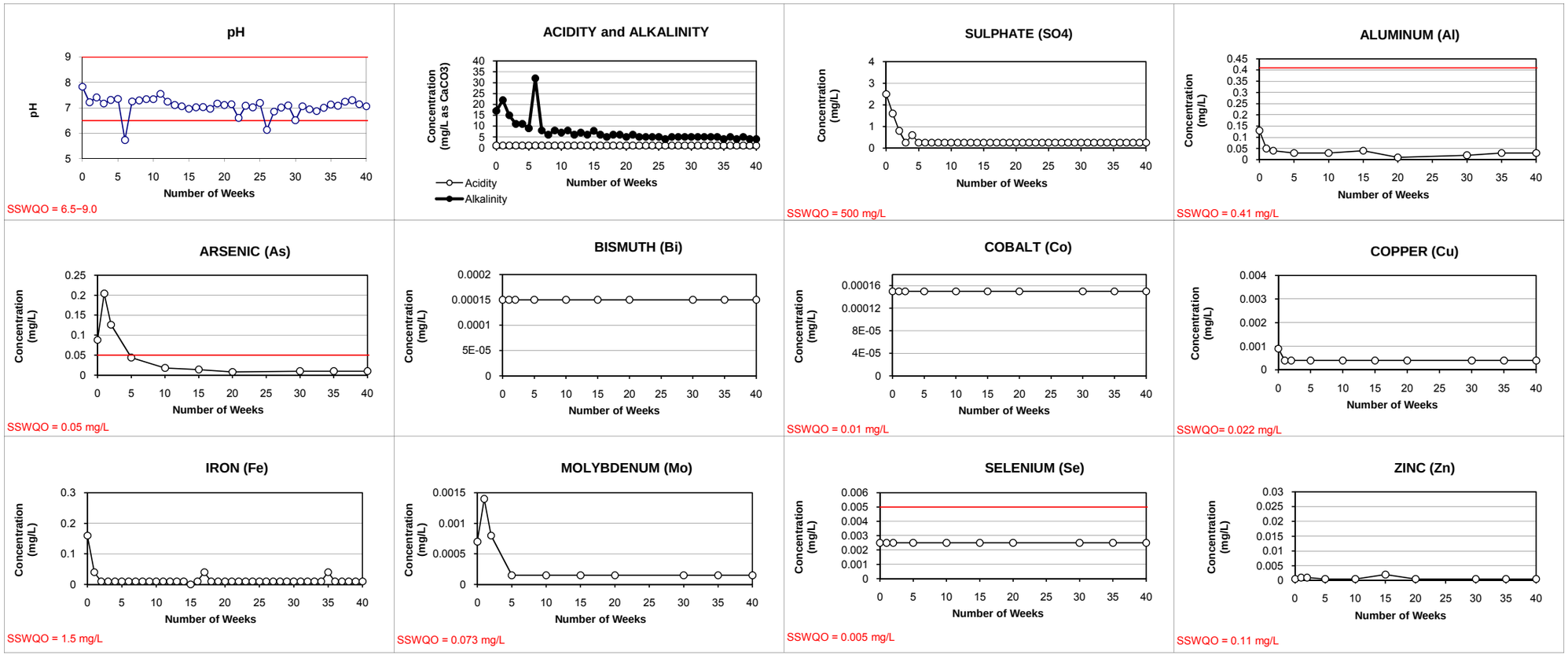
Site Specific Water Quality Objectives (SSWQO)

Total Sulphur (%):	0.05
Sulphide Sulphur (%):	0.03
Neutralization Potential (t $CaCO_3$/1000 t):	10.2
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	1.7
Acid Potential (t $CaCO_3$/1000 t):	0.94
Estimated Time to Sulphide Depletion:	34 Years
Estimated Time to Depletion of Neutralization Potential:	84 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

Appendix VIII-1j

GEOCHEMISTRY OF HUMIDITY CELL 100977 Black Rock Schist + Magnetite
NICO PROJECT, FORTUNE MINERALS LIMITED

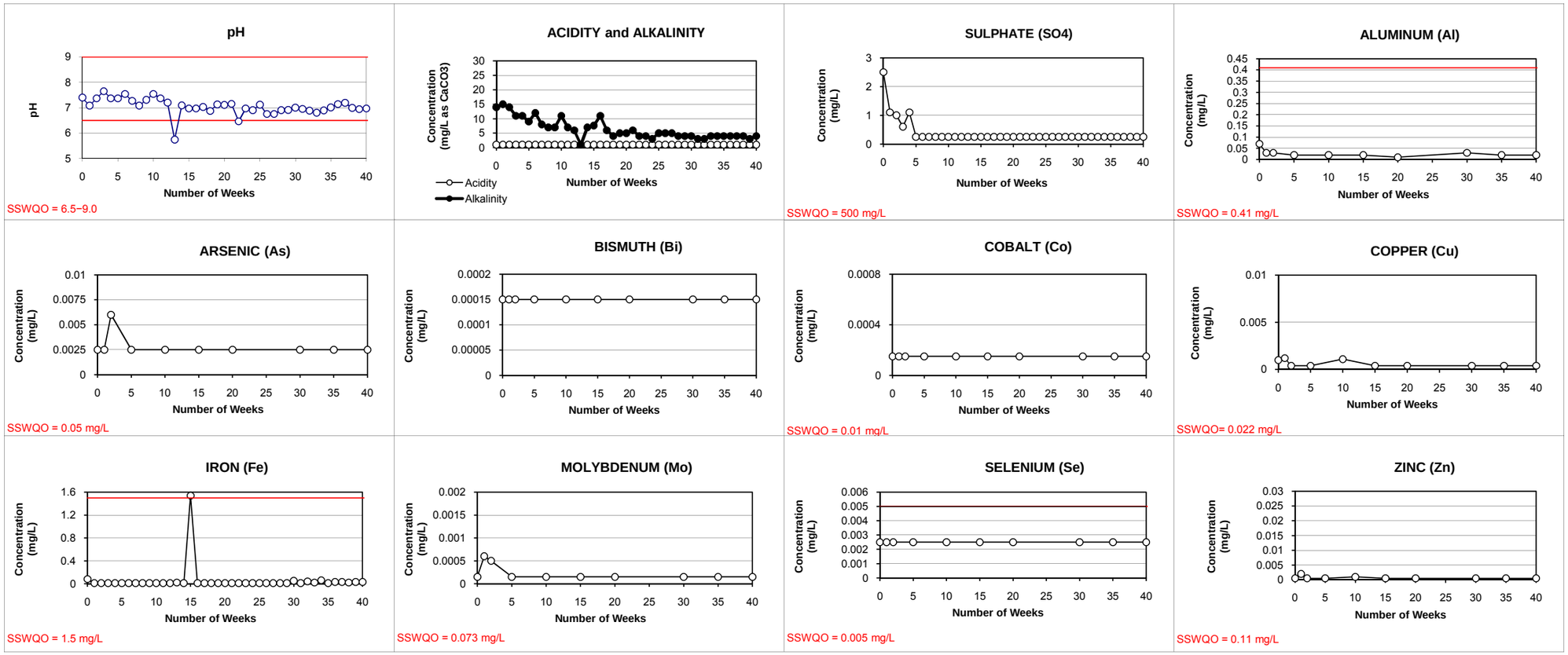


Total Sulphur (%):	0.07
Sulphide Sulphur (%):	0.04
Neutralization Potential (t $CaCO_3$/1000 t):	13.8
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	1.7
Acid Potential (t $CaCO_3$/1000 t):	1.2
Estimated Time to Sulphide Depletion:	46 Years
Estimated Time to Depletion of Neutralization Potential:	90 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

Appendix VIII-1j

GEOCHEMISTRY OF HUMIDITY CELL 100802 Black Rock Schist ± Magnetite
NICO PROJECT, FORTUNE MINERALS LIMITED

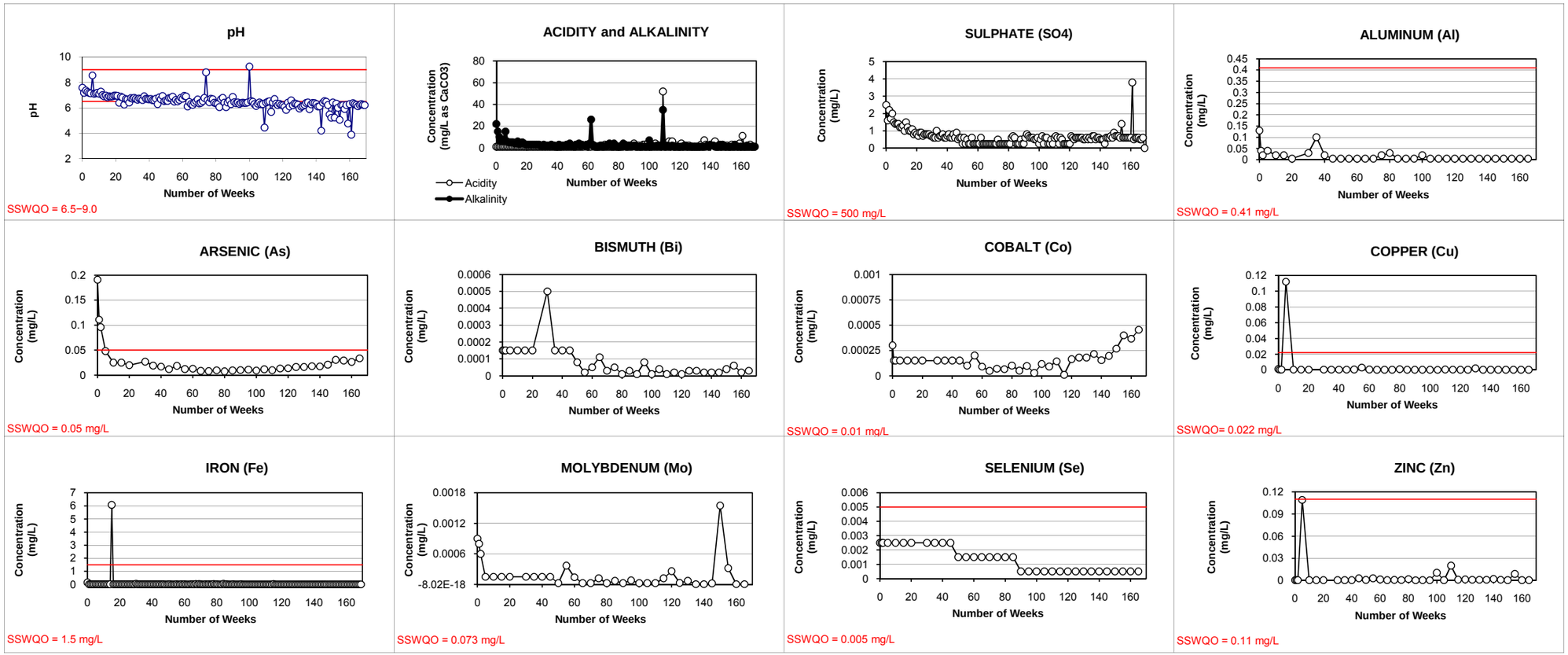


Total Sulphur (%):	0.02
Sulphide Sulphur (%):	<0.01
Neutralization Potential (t $CaCO_3$/1000 t):	28.2
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	4.2
Acid Potential (t $CaCO_3$/1000 t):	0.31
Estimated Time to Sulphide Depletion:	11 Years
Estimated Time to Depletion of Neutralization Potential:	246 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

Appendix VIII-1j

GEOCHEMISTRY OF HUMIDITY CELL 100907 Black Rock Schist ± Magnetite
NICO PROJECT, FORTUNE MINERALS LIMITED

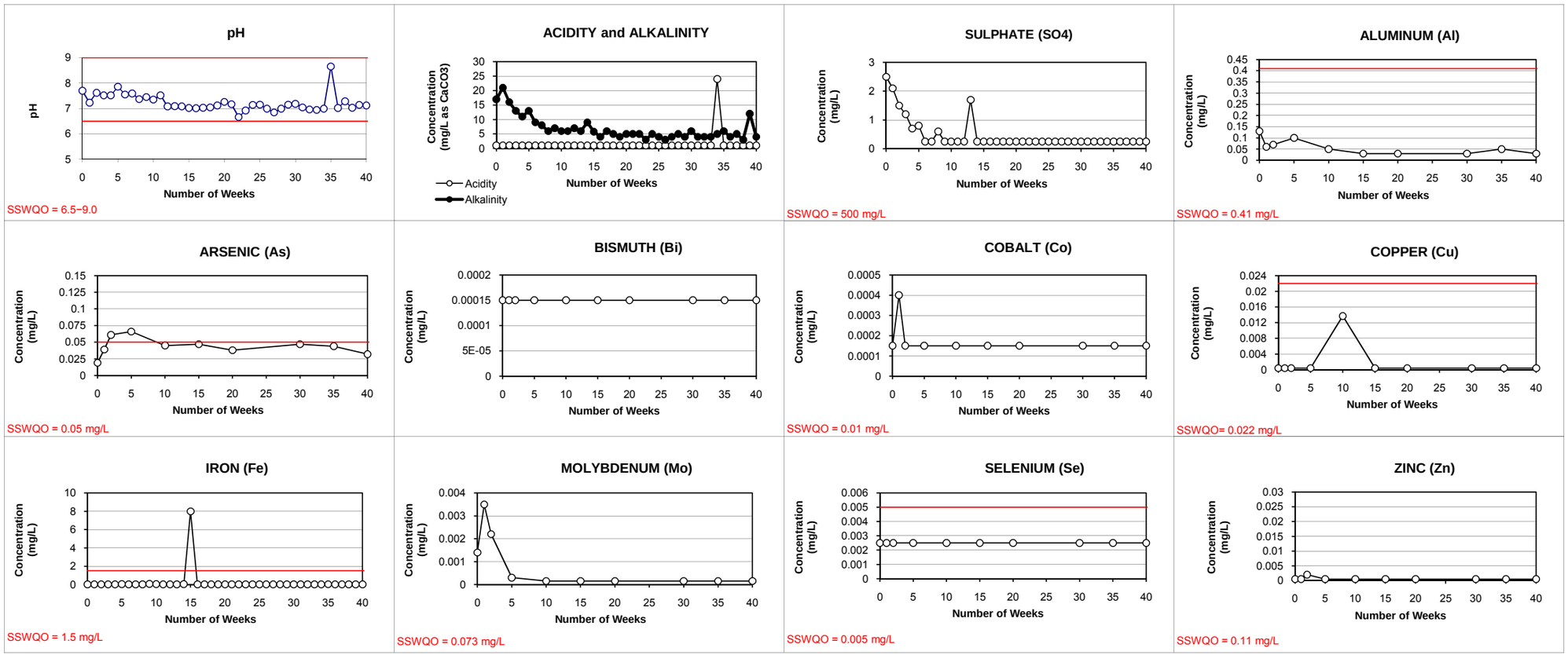


Total Sulphur (%):	0.31
Sulphide Sulphur (%):	0.27
Neutralization Potential (t $CaCO_3$/1000 t):	10.1
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	1.7
Acid Potential (t $CaCO_3$/1000 t):	8.3
Estimated Time to Sulphide Depletion:	285 Years
Estimated Time to Depletion of Neutralization Potential:	514 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

Appendix VIII-1j

GEOCHEMISTRY OF HUMIDITY CELL 100881 Sub-Arkosic Wacke
NICO PROJECT, FORTUNE MINERALS LIMITED

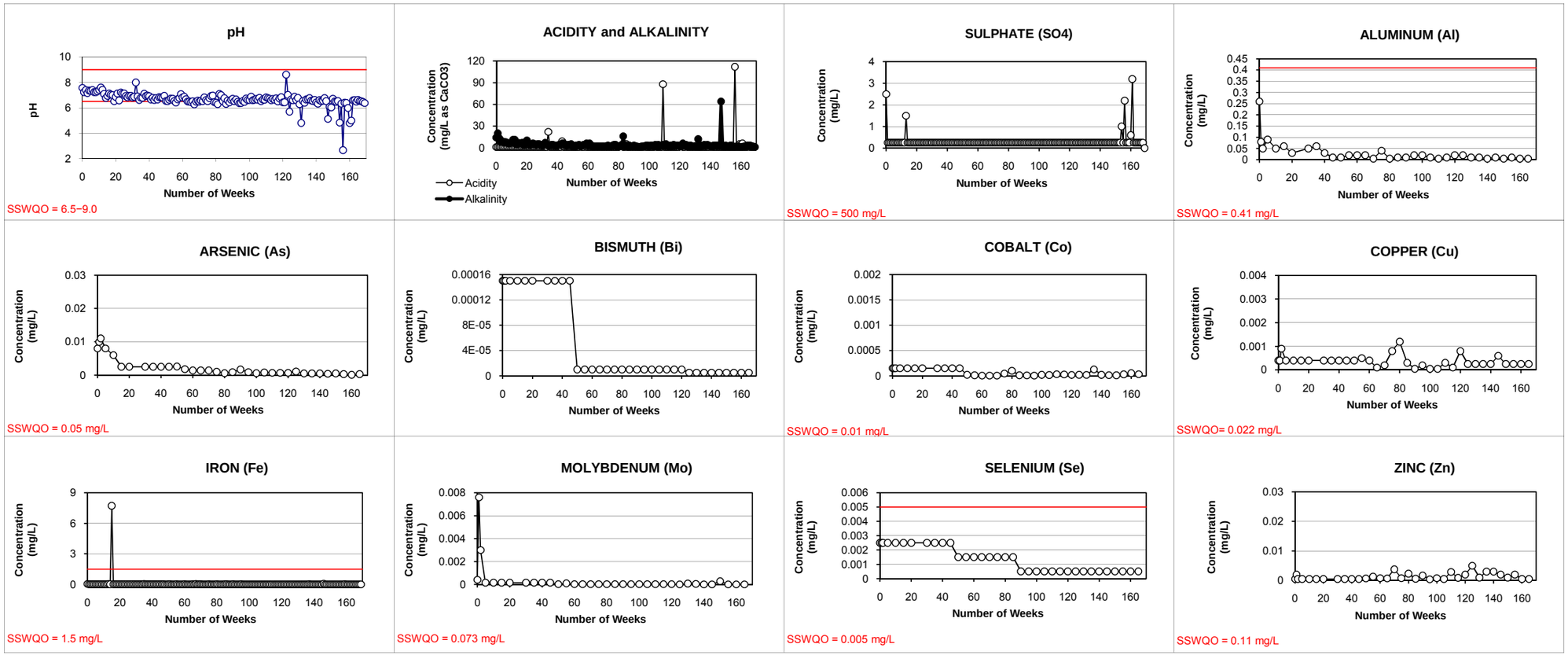


Total Sulphur (%):	0.03
Sulphide Sulphur (%):	0.02
Neutralization Potential (t $CaCO_3$/1000 t):	16.8
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	8.3
Acid Potential (t $CaCO_3$/1000 t):	0.62
Estimated Time to Sulphide Depletion:	24 Years
Estimated Time to Depletion of Neutralization Potential:	85 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

Appendix VIII-1j

GEOCHEMISTRY OF HUMIDITY CELL 100914 Siltstone
NICO PROJECT, FORTUNE MINERALS LIMITED

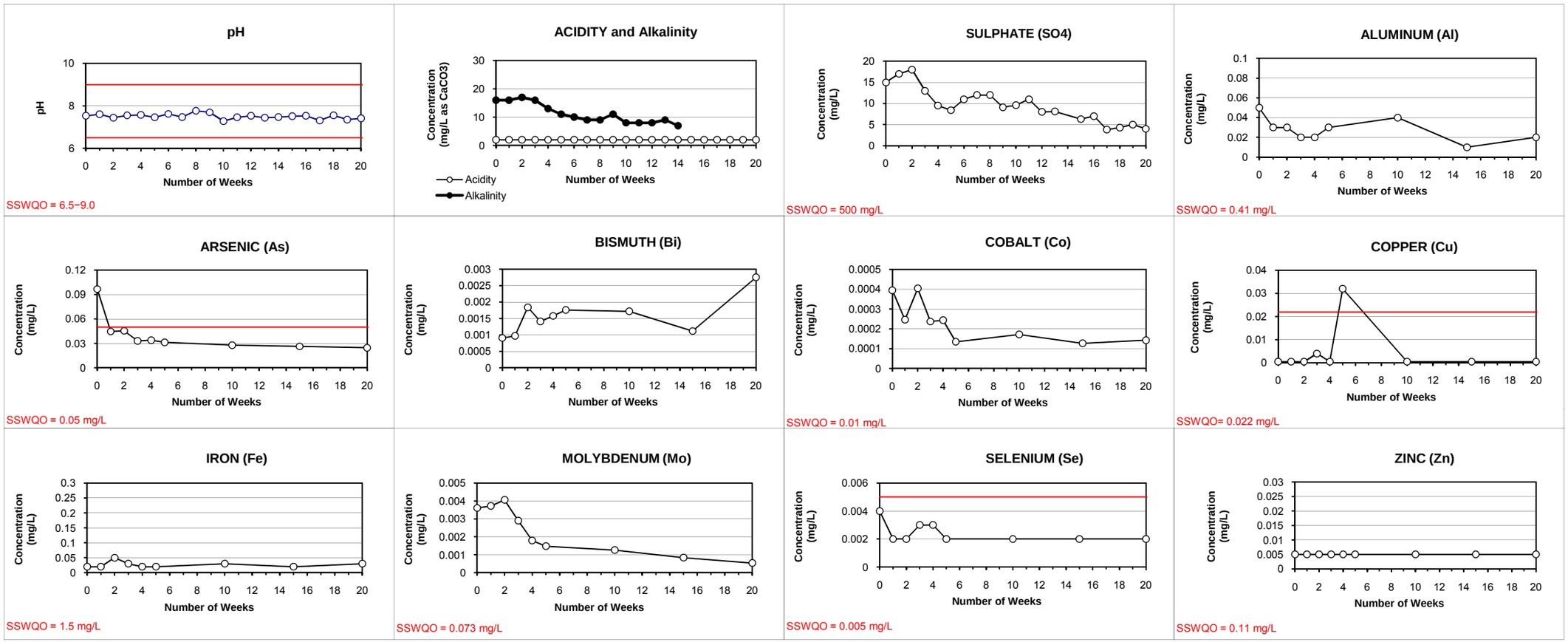


Total Sulphur (%):	<0.01
Sulphide Sulphur (%):	<0.01
Neutralization Potential (t $CaCO_3$/1000 t):	9.5
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	0.83
Acid Potential (t $CaCO_3$/1000 t):	0.31
Estimated Time to Sulphide Depletion:	8 Years
Estimated Time to Depletion of Neutralization Potential:	165 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

Appendix VIII-1j

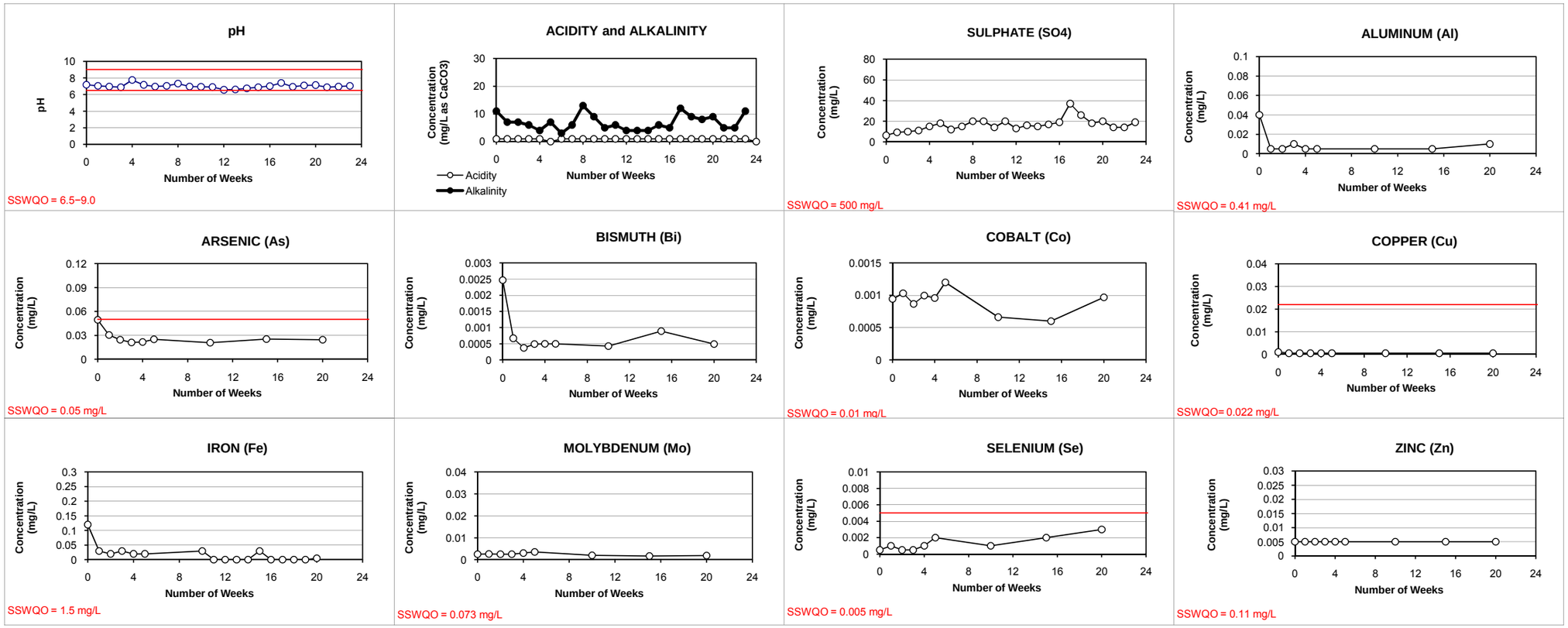
GEOCHEMISTRY OF HUMIDITY CELL Bulk Rougher Tails
NICO PROJECT, FORTUNE MINERALS LIMITED



Total Sulphur (%):	0.08
Sulphide Sulphur (%):	0.02
Neutralization Potential (t $CaCO_3$/1000 t):	24.8
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	10.873
Acid Potential (t $CaCO_3$/1000 t):	0.54
Estimated Time to Sulphide Depletion:	2 years
Estimated Time to Depletion of Neutralization Potential:	51 years

Appendix VIII-1j

GEOCHEMISTRY OF HUMIDITY CELL Tailings PP#14
NICO PROJECT, FORTUNE MINERALS LIMITED



Total Sulphur (%):	0.084
Sulphide Sulphur (%):	0.02
Neutralization Potential (t $CaCO_3$/1000 t):	22.5
Carbonate Neutralization Potential (t $CaCO_3$/1000 t):	6.74
Acid Potential (t $CaCO_3$/1000 t):	0.62
Estimated Time to Sulphide Depletion:	<1 Year
Estimated Time to Depletion of Neutralization Potential:	19 Years

Note: Values reported at the analytical detection limit are plotted at 50% of the analytical detection limit

APPENDIX IX

Results of Field Cell Monitoring – September 2008 to September 2009

May 2011
Report No. 08 1118 0043 (5000)

Golder Associates

Field Cell ID: FC-1
Field Cell Rock / Tailings Type: Sub-economic mineralized mine rock; mixed feldspar porphyry and black rock schist
Mass of Field Cell: 219 kg

Station ID		**FC-1**	**FC-1**	**FC-1**	**FC-1**	**FC-1**	**FC-1**	**FC-1**
Date		9/9/2008	6/17/2009	7/14/2009	9/8/2009	7/18/2010	8/12/2010	9/29/2010
Time		12:05:00 PM	8:00:00 PM	12:00:00 AM	12:00:00 AM	12:00:00 AM	12:00:00 AM	12:00:00 AM
Sample ID		**L680895-1**	**L780179-2**	**L792165-2**	**L815696-2**	**L909880-2**	**L920049-2**	**L937669-2**
ROUTINE ANALYSIS								
pH		8.00	7.94	7.33	7.83	7.82	7.80	7.86
Specific Conductivity	uS/cm	953	591	358	421	334	438	441
Total Alkalinity	mg/L as CaCO3	129	156	35.9	54.9	58.1	59.1	63.4
Hardness	mg/L as CaCO4	145	93	97.9	160	121	173	161
Total Dissolved Solids	mg/L	535	298	216	278	199	291	273
Total Suspended Solids	mg/L	NA/	NA	NA	30	18	<3.0	<3.0
Arsenic Speciation								
Arsenic (As)	mg/L	0.0806	0.144	0.114	0.143	0.243	0.21	0.164
Arsenic, Pentavalent	ug/L	62.8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Arsenic, Trivalent	ug/L	3.54	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
NUTRIENTS								
Nitrate-Nitrite	mg/L as N	20.1	5.3	19.4	29.7	16.2	26.2	23.1
Nitrate-N	mg/L as N	19.8	4.19	10.1	11.4	13.3	25.7	23.1
Nitrite-N	mg/L as N	0.3	1.11	9.34	18.3	2.93	0.544	<0.050
MAJOR IONS								
Bicarbonate	mg/L as HCO3	158	190	43.9	67	70.8	72.1	77.4
Carbonate	mg/L as CO3	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Hydroxide	mg/L	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Sulphate	mg/L	197	79.5	41.9	35.7	31.2	49.8	53.1
Chloride	mg/L	15	5.64	1.78	1.09	0.88	1.62	1.23
Calcium	mg/L	43.4	29.6	30	49.5	38.4	55.4	51.5
Magnesium	mg/L	9	4.63	5.59	8.89	6.03	8.47	7.95
Potassium	mg/L	34.1	24.6	17.4	10.7	7.92	11	9.6
Sodium	mg/L	70	36.7	11.5	7.6	6.22	11.2	7.8
Ion Balance	mg/L	79.8	77	95.8	95.3	94	99.9	92.4
DISSOLVED METALS								
Aluminum	mg/L	0.01	0.014	0.039	<0.010	<0.010	0.018	<0.010
Antimony	mg/L	0.0526	0.0646	0.0459	0.0268	0.0254	0.0323	0.023
Barium	mg/L	0.103	0.0763	0.0936	0.0644	0.0587	0.0903	0.0982
Beryllium	mg/L	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	mg/L	0.00006	0.000254	0.000085	0.000053	0.000074	0.00005	<0.000050
Boron	mg/L	0.189	0.103	0.0869	0.0632	0.0462	0.0704	0.0464
Cadmium	mg/L	0.0002	0.00015	0.00015	0.0001	<0.00010	0.00012	<0.00010
Chromium	mg/L	0.0004	0.0005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Cobalt	mg/L	0.0062	0.00286	0.00201	0.00173	0.00137	0.00195	0.00147
Copper	mg/L	0.0038	0.00335	0.00392	0.00311	0.00228	0.0024	0.00196
Iron	mg/L	<0.005	0.013	0.019	<0.010	<0.010	<0.010	<0.010
Lead	mg/L	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Manganese	mg/L	0.077	0.0339	0.13	0.0949	0.0335	0.0266	0.0056
Mercury	mg/L	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum	mg/L	0.121	0.0615	0.0406	0.0294	0.0226	0.0335	0.0309
Nickel	mg/L	0.0031	0.00264	0.00344	0.00221	0.00133	0.00238	0.00111
Selenium	mg/L	0.0333	0.0142	0.0048	0.00714	0.0102	0.0032	0.0108
Silver	mg/L	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	mg/L	0.315	0.232	0.241	0.285	0.209	0.278	0.285
Thallium	mg/L	0.00011	0.000111	0.000088	<0.000050	0.00015	<0.000050	<0.000050
Tin	mg/L	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	0.00086	0.00045
Titanium	mg/L	0.0006	0.00093	0.00106	0.00071	0.00056	0.00105	<0.00030
Uranium	mg/L	0.167	0.143	0.0447	0.117	0.0723	0.0728	0.143
Vanadium	mg/L	0.002	0.00149	0.00169	0.00168	0.00263	0.00319	0.002
Zinc	mg/L	0.008	0.0019	0.0097	0.0023	<0.0010	0.0031	0.0016

#N/A indicates that the parameter was not measured in the leachate sample.

Field Cell ID: FC-2
Field Cell Rock / Tailings Type: Sub-economic mineralized mine rock; black rock schist
Mass of Field Cell: 219 kg

Station ID		**FC-2**	**FC-2**	**FC-2**	**FC-2**	**FC-2**
Date		9/9/2008	6/18/2009	7/14/2009	9/8/2009	7/18/2010
Time		12:15:00 PM	1:19:00 PM	12:00:00 AM	12:00:00 AM	12:00:00 AM
Sample ID		**L680895-2**	**L780179-3**	**L792165-3**	**L815696-3**	**L909880-3**
ROUTINE ANALYSIS						
pH		8.00	8.08	7.78	7.96	7.84
Specific Conductivity	uS/cm	1030	647	358	223	225
Total Alkalinity	mg/L as CaCO3	113	150	51.7	55.8	53.4
Hardness	mg/L as CaCO4	128	89.2	93.4	76.2	80.9
Total Dissolved Solids	mg/L	577	341	208	124	124
Total Suspended Solids	mg/L	#N/A	#N/A	8.0	17	11
Arsenic Speciation						
Arsenic (As)	mg/L	0.0038	0.00702	0.00479	0.00603	0.0114
Arsenic, Pentavalent	ug/L	1.79	#N/A	#N/A	#N/A	#N/A
Arsenic, Trivalent	ug/L	2.63	#N/A	#N/A	#N/A	#N/A
NUTRIENTS						
Nitrate-Nitrite	mg/L as N	9.9	2.87	12.6	3.84	1.88
Nitrate-N	mg/L as N	9.7	2.53	12.3	3.84	1.72
Nitrite-N	mg/L as N	0.2	0.339	0.246	<0.050	0.155
MAJOR IONS						
Bicarbonate	mg/L as HCO3	138	183	63.0	68.1	65.1
Carbonate	mg/L as CO3	<5	<5.0	<5.0	<5.0	<5.0
Hydroxide	mg/L	<5	<5.0	<5.0	<5.0	<5.0
Sulphate	mg/L	284	123	56.1	29.2	38.3
Chloride	mg/L	10	4.95	2.06	0.79	0.75
Calcium	mg/L	38.9	27.8	30.1	24.1	26
Magnesium	mg/L	7.6	4.81	4.43	3.89	3.89
Potassium	mg/L	38.3	27.9	15.2	9.66	8.04
Sodium	mg/L	87	50.0	13.9	6.3	5.46
Ion Balance	mg/L	80	79.1	90.7	101	99.5
DISSOLVED METALS						
Aluminum	mg/L	0.01	<0.010	<0.010	<0.010	<0.010
Antimony	mg/L	0.0207	0.0317	0.0212	0.02	0.0236
Barium	mg/L	0.174	0.0859	0.114	0.0424	0.0454
Beryllium	mg/L	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	mg/L	0.00034	0.000881	0.00127	0.0019	0.0066
Boron	mg/L	0.607	0.342	0.208	0.0998	0.0851
Cadmium	mg/L	<0.0001	<0.00010	0.00012	<0.00010	<0.00010
Chromium	mg/L	<0.0004	<0.00040	<0.00040	<0.00040	<0.00040
Cobalt	mg/L	0.0013	0.00070	0.00046	0.00026	0.00038
Copper	mg/L	0.0024	0.00133	0.00261	0.00184	0.00381
Iron	mg/L	<0.005	<0.010	<0.010	<0.010	0.019
Lead	mg/L	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Manganese	mg/L	0.031	0.0059	0.0433	0.03	0.0433
Mercury	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum	mg/L	0.0308	0.0249	0.0155	0.0115	0.0105
Nickel	mg/L	0.002	0.00211	0.00262	0.00136	0.00135
Selenium	mg/L	0.0993	0.0645	0.0563	0.035	0.0452
Silver	mg/L	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	mg/L	0.274	0.212	0.227	0.146	0.125
Thallium	mg/L	0.00009	0.000066	0.000055	<0.000050	0.000063
Tin	mg/L	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020
Titanium	mg/L	0.0003	0.00089	0.00084	0.00067	0.00084
Uranium	mg/L	0.0422	0.0472	0.0137	0.0202	0.0148
Vanadium	mg/L	0.0016	0.00121	0.00081	0.00091	0.00093
Zinc	mg/L	0.006	0.0021	0.0015	0.0011	0.0014

#N/A indicates that the parameter was not measured in the leachate sample.

Field Cell ID: FC-3
Field Cell Rock / Tailings Type: Sub-economic mineralized mine rock; black rock schist
Mass of Field Cell: 220 kg

Station ID		**FC-3**	**FC-3**	**FC-3**	**FC-3**	**FC-3**
Date		9/9/2008	6/18/2009	7/18/2010	8/12/2010	9/29/2010
Time		12:25:00 PM	1:19:00 PM	12:00:00 AM	12:00:00 AM	12:00:00 AM
Sample ID		**L680895-3**	**L780179-4**	**L909880-4**	**L920049-3**	**L937669-3**
ROUTINE ANALYSIS						
pH		7.60	7.98	7.12	7.18	7.25
Specific Conductivity	uS/cm	1120	640	379	826	1060
Total Alkalinity	mg/L as CaCO3	75	116	31.3	14.1	13.5
Hardness	mg/L as CaCO4	161	46.5	115	266	319
Total Dissolved Solids	mg/L	689	336	246	570	711
Total Suspended Solids	mg/L	0	0	18	14	4
Arsenic Speciation						
Arsenic (As)	mg/L	0.0164	0.0431	0.0357	0.0256	0.019
Arsenic, Pentavalent	ug/L	8.37	#N/A	#N/A	#N/A	#N/A
Arsenic, Trivalent	ug/L	1.79	#N/A	#N/A	#N/A	#N/A
NUTRIENTS						
Nitrate-Nitrite	mg/L as N	33.7	9.11	19.7	50.2	74.1
Nitrate-N	mg/L as N	33.4	8.75	19.4	50	74.1
Nitrite-N	mg/L as N	0.27	0.366	0.381	0.184	<0.050
MAJOR IONS						
Bicarbonate	mg/L as HCO3	91	141	38.2	17.2	16.4
Carbonate	mg/L as CO3	<5	<5.0	<5.0	<5.0	<5.0
Hydroxide	mg/L	<5	<5.0	<5.0	<5.0	<5.0
Sulphate	mg/L	284	120	63.8	181	189
Chloride	mg/L	14	3.67	0.68	1.61	1.82
Calcium	mg/L	48.4	13.7	35	83.3	99.6
Magnesium	mg/L	9.8	2.99	6.77	14	17.1
Potassium	mg/L	35.6	26.7	19.2	28.5	33.6
Sodium	mg/L	103	59.4	12.8	29.2	32.4
Ion Balance	mg/L	84.4	75.4	97.3	94.3	90
DISSOLVED METALS						
Aluminum	mg/L	0.08	0.025	0.088	0.014	<0.010
Antimony	mg/L	0.0445	0.0587	0.0322	0.0328	0.0213
Barium	mg/L	0.156	0.0563	0.0955	0.141	0.195
Beryllium	mg/L	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	mg/L	0.00018	0.00336	0.00572	0.00047	0.000144
Boron	mg/L	0.275	0.168	0.105	0.249	0.288
Cadmium	mg/L	0.0001	<0.00010	0.00013	0.00015	0.00021
Chromium	mg/L	0.0006	<0.00040	<0.00040	<0.00040	<0.00040
Cobalt	mg/L	0.0038	0.00246	0.00275	0.00313	0.00313
Copper	mg/L	0.0049	0.00311	0.00369	0.00305	0.00309
Iron	mg/L	0.047	0.027	0.118	<0.010	<0.010
Lead	mg/L	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Manganese	mg/L	0.018	<0.0020	0.177	0.316	0.383
Mercury	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum	mg/L	0.0545	0.0334	0.014	0.0274	0.0355
Nickel	mg/L	0.002	0.00137	0.0028	0.00458	0.00393
Selenium	mg/L	0.0485	0.0261	0.0122	0.0308	0.0319
Silver	mg/L	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	mg/L	0.292	0.113	0.184	0.409	0.569
Thallium	mg/L	0.00005	0.000062	0.000121	0.000107	0.000078
Tin	mg/L	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020
Titanium	mg/L	0.0028	0.00084	0.00085	0.00134	<0.00030
Uranium	mg/L	0.0389	0.0596	0.00962	0.00166	0.00412
Vanadium	mg/L	0.001	0.00088	0.00076	0.00095	0.00059
Zinc	mg/L	<0.002	0.0017	0.0026	<0.0010	0.0035

#N/A indicates that the parameter was not measured in the leachate sample.

Field Cell ID: FC-4
Field Cell Rock / Tailings Type: Sub-economic mineralized mine rock; black rock schist
Mass of Field Cell: 225 kg

Station ID		**FC-4**	**FC-4**	**FC-4**	**FC-4**	**FC-4**	**FC-4**	**FC-4**
Date		9/9/2008	6/18/2009	7/14/2009	9/8/2009	7/18/2010	8/12/2010	9/29/2010
Time		12:35:00 PM	1:19:00 PM	12:00:00 AM	12:00:00 AM	12:00:00 AM	12:00:00 AM	12:00:00 AM
Sample ID		**L680895-4**	**L780179-5**	**L792165-4**	**L815696-4**	**L909880-5**	**L920049-4**	**L937669-4**
ROUTINE ANALYSIS								
pH		7.90	7.76	7.45	7.74	7.69	7.68	7.73
Specific Conductivity	uS/cm	1040	716	650	700	598	617	820
Total Alkalinity	mg/L as CaCO3	74	101	29.9	39.1	44.5	29.6	37.3
Hardness	mg/L as CaCO4	354	264	258	308	268	287	362
Total Dissolved Solids	mg/L	661	433	424	470	383	429	567
Total Suspended Solids	mg/L	0	0	0	187	8	<3.0	<3.0
Arsenic Speciation								
Arsenic (As)	mg/L	0.005	0.0109	0.00891	0.0265	0.0263	0.0324	0.0503
Arsenic, Pentavalent	ug/L	1.18	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Arsenic, Trivalent	ug/L	2.76	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
NUTRIENTS								
Nitrate-Nitrite	mg/L as N	11.4	1.69	12.2	9.18	6.2	8.8	21
Nitrate-N	mg/L as N	11.2	1.45	11.9	8.76	5.1	8.5	20
Nitrite-N	mg/L as N	0.16	0.241	0.334	0.42	1.1	0.215	1.09
MAJOR IONS								
Bicarbonate	mg/L as HCO3	91	124	36.5	47.7	54.3	36.1	45.5
Carbonate	mg/L as CO3	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Hydroxide	mg/L	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Sulphate	mg/L	363	227	233	267	213	248	296
Chloride	mg/L	6	4.42	2.15	1.99	1.13	1.54	1.88
Calcium	mg/L	104	90.9	85.1	102	91.4	97.8	124
Magnesium	mg/L	22.9	8.91	11.1	13	9.57	10.4	12.6
Potassium	mg/L	36.2	18.6	13.5	14.1	8.12	8.19	10
Sodium	mg/L	34	14.7	7.3	7.5	4.5	5.15	5.3
Ion Balance	mg/L	94.5	91.2	91.2	97.1	98.1	94.9	90.5
DISSOLVED METALS								
Aluminum	mg/L	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Antimony	mg/L	0.0203	0.0306	0.0192	0.0243	0.0315	0.0321	0.0159
Barium	mg/L	0.206	0.0693	0.12	0.0924	0.0628	0.0656	0.0705
Beryllium	mg/L	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	mg/L	<0.00005	<0.000050	0.00006	0.000072	0.000343	0.000075	0.000096
Boron	mg/L	0.356	0.154	0.156	0.193	0.119	0.144	0.125
Cadmium	mg/L	<0.0001	<0.00010	0.0001	0.0001	<0.00010	<0.00010	<0.00010
Chromium	mg/L	<0.0004	0.00047	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Cobalt	mg/L	0.0019	0.00119	0.00141	0.00166	0.00222	0.00088	0.00586
Copper	mg/L	0.003	0.00183	0.00262	0.0038	0.00284	0.00199	0.00263
Iron	mg/L	<0.005	<0.010	<0.010	<0.010	0.021	<0.010	<0.010
Lead	mg/L	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Manganese	mg/L	0.142	0.0572	0.261	0.224	0.135	0.0701	0.206
Mercury	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum	mg/L	0.0103	0.00789	0.00679	0.0107	0.0103	0.0125	0.00868
Nickel	mg/L	0.0026	0.00353	0.0037	0.00334	0.00189	0.00299	0.00124
Selenium	mg/L	0.0928	0.0331	0.0282	0.0376	0.0336	0.0402	0.054
Silver	mg/L	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	mg/L	0.411	0.359	0.366	0.334	0.229	0.222	0.28
Thallium	mg/L	0.0001	0.000054	0.000053	0.00005	0.00005	<0.000050	<0.000050
Tin	mg/L	<0.0002	<0.00020	0.00021	<0.00020	<0.00020	0.00178	0.00044
Titanium	mg/L	<0.0003	0.00113	0.00097	0.00085	0.00052	0.0009	<0.00030
Uranium	mg/L	0.0305	0.0256	0.00505	0.00935	0.00699	0.00241	0.00864
Vanadium	mg/L	0.0012	0.00108	0.00071	0.00119	0.00113	0.00105	0.00112
Zinc	mg/L	0.006	0.003	0.0035	0.0032	0.0012	0.0028	0.0021

#N/A indicates that the parameter was not measured in the leachate sample.

Field Cell ID: FC-5
Field Cell Rock / Tailings Type: Ore; black rock schist
Mass of Field Cell: 224 kg

Station ID		**FC-5**	**FC-5**	**FC-5**	**FC-5**	**FC-5**	**FC-5**	**FC-5**
Date		9/9/2008	6/18/2009	7/14/2009	9/8/2009	7/18/2010	8/12/2010	9/29/2010
Time		12:45:00 PM	1:19:00 PM	12:00:00 AM	12:00:00 AM	12:00:00 AM	12:00:00 AM	12:00:00 AM
Sample ID		**L680895-5**	**L780179-6**	**L792165-5**	**L815696-5**	**L909880-6**	**L920049-5**	**L937669-5**
ROUTINE ANALYSIS								
pH		7.80	7.83	7.50	7.79	7.79	7.64	7.71
Specific Conductivity	uS/cm	2240	851	460	601	491	645	995
Total Alkalinity	mg/L as CaCO3	82	77.6	37.4	40.8	47.1	34.6	39.1
Hardness	mg/L as CaCO4	538	189	125	234	194	286	421
Total Dissolved Solids	mg/L	1590	540	277	392	306	456	680
Total Suspended Solids	mg/L	0	0	0	73	5	<3.0	7
Arsenic Speciation								
Arsenic (As)	mg/L	1.93	1.58	1.78	1.49	2.23	1.69	2.33
Arsenic, Pentavalent	ug/L	1470	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Arsenic, Trivalent	ug/L	<0.050	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
NUTRIENTS								
Nitrate-Nitrite	mg/L as N	17.3	2.74	6.8	7.97	7.92	15.9	29.4
Nitrate-N	mg/L as N	15.9	1.7	4.19	5.46	5.05	14.8	29.3
Nitrite-N	mg/L as N	1.48	1.04	2.62	2.52	2.87	1.13	0.086
MAJOR IONS								
Bicarbonate	mg/L as HCO3	101	94.6	45.6	49.8	57.5	42.3	47.7
Carbonate	mg/L as CO3	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Hydroxide	mg/L	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Sulphate	mg/L	960	302	140	214	149	230	338
Chloride	mg/L	21	5.34	1.17	1.32	0.8	1.21	1.68
Calcium	mg/L	156	57.9	36.8	72.6	62.1	92	137
Magnesium	mg/L	36.1	10.9	8.07	12.8	9.37	13.6	19.2
Potassium	mg/L	40.6	19.6	17.6	14.4	9.47	12	15.3
Sodium	mg/L	250	85.1	20.7	17.1	10.8	14.6	14.8
Ion Balance	mg/L	96.6	97.6	92.1	98.5	97.9	99.2	94.5
DISSOLVED METALS								
Aluminum	mg/L	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Antimony	mg/L	0.0907	0.065	0.0605	0.0398	0.0417	0.0425	0.034
Barium	mg/L	0.214	0.0556	0.115	0.0837	0.0781	0.0871	0.13
Beryllium	mg/L	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	mg/L	<0.00005	<0.000050	<0.000050	<0.000050	0.000098	<0.000050	<0.000050
Boron	mg/L	0.908	0.288	0.269	0.244	0.197	0.22	0.191
Cadmium	mg/L	0.0003	0.0001	0.00013	0.00016	<0.00010	<0.00010	0.0001
Chromium	mg/L	0.0006	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Cobalt	mg/L	0.0105	0.00303	0.00108	0.00229	0.00191	0.00159	0.00317
Copper	mg/L	0.0053	0.00165	0.00266	0.00385	0.00315	0.00215	0.00289
Iron	mg/L	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	mg/L	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Manganese	mg/L	0.179	0.0512	0.0516	0.101	0.0176	0.0221	0.0471
Mercury	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum	mg/L	0.142	0.0358	0.0289	0.0297	0.0227	0.0303	0.038
Nickel	mg/L	0.0048	0.00294	0.0027	0.00313	0.00184	0.00322	0.00164
Selenium	mg/L	0.0469	0.0137	0.0051	0.00871	0.00713	0.00326	0.00805
Silver	mg/L	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	mg/L	0.986	0.347	0.267	0.344	0.249	0.329	0.49
Thallium	mg/L	0.0001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Tin	mg/L	0.0003	<0.00020	<0.00020	<0.00020	<0.00020	0.00057	<0.00020
Titanium	mg/L	0.0006	0.00061	0.00083	0.00076	0.00057	0.00101	<0.00030
Uranium	mg/L	0.339	0.259	0.035	0.0756	0.053	0.0149	0.0634
Vanadium	mg/L	0.0041	0.00168	0.00299	0.00249	0.0025	0.00377	0.00227
Zinc	mg/L	0.026	0.0088	0.0062	0.0048	0.0011	0.0051	0.0039

#N/A indicates that the parameter was not measured in the leachate sample.

Field Cell ID: FC-8
Field Cell Rock / Tailings Type: Tailings; bulk rougher tailings
Mass of Field Cell: 40 kg

Station ID		**FC-8**	**FC-8**	**FC-8**	**FC-8**
Date		4/28/2010	7/18/2010	8/12/2010	9/29/2010
Time		12:00:00 AM	12:00:00 AM	12:00:00 AM	12:00:00 AM
Sample ID		**L881302-1**	**L909880-7**	**L920049-6**	**L937669-6**
ROUTINE ANALYSIS					
pH		7.88	8.08	8.03	8.06
Specific Conductivity	uS/cm	335	707	359	195
Total Alkalinity	mg/L as CaCO3	45.6	79.9	62.9	57.6
Hardness	mg/L as CaCO4	147	190	96.3	58.8
Total Suspended Solids	mg/L	6030	27	8	<3.0
Total Dissolved Solids	mg/L	240	419	205	99.4
Arsenic Speciation					
Arsenic (As)	mg/L	0.417	0.175	0.104	0.0766
Arsenic, Pentavalent	ug/L	#N/A	#N/A	#N/A	#N/A
Arsenic, Trivalent	ug/L	#N/A	#N/A	#N/A	#N/A
NUTRIENTS					
Nitrate-Nitrite	mg/L as N	0.14	0.639	0.112	<0.071
Nitrate-N	mg/L as N	0.14	0.574	0.112	<0.050
Nitrite-N	mg/L as N	<0.050	0.066	<0.050	<0.050
MAJOR IONS					
Bicarbonate	mg/L as HCO3	55.7	97.5	76.7	70.3
Carbonate	mg/L as CO3	<5.0	<5.0	<5.0	<5.0
Hydroxide	mg/L	<5.0	<5.0	<5.0	<5.0
Sulphate	mg/L	89.8	206	91	27.2
Chloride	mg/L	9.15	20.1	7.03	0.54
Calcium	mg/L	36.6	43	24.9	16.8
Magnesium	mg/L	13.4	20.1	8.29	4.1
Potassium	mg/L	50.5	52.3	23.2	14.1
Sodium	mg/L	11.8	25.3	10.9	1.39
Ion Balance	mg/L	152	94.5	87.6	90.1
DISSOLVED METALS					
Aluminum	mg/L	7.48	0.019	0.04	0.025
Antimony	mg/L	0.014	0.0287	0.0142	0.0133
Barium	mg/L	0.127	0.0757	0.0298	0.0164
Beryllium	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	mg/L	0.392	0.00074	0.000335	0.000225
Boron	mg/L	0.057	0.096	0.0467	0.0164
Cadmium	mg/L	0.00014	<0.00010	<0.00010	<0.00010
Chromium	mg/L	0.00772	<0.00040	<0.00040	<0.00040
Cobalt	mg/L	0.0486	0.00237	0.00115	0.00049
Copper	mg/L	0.0233	0.00272	0.00128	0.00086
Iron	mg/L	31.9	0.02	<0.010	<0.010
Lead	mg/L	0.0125	<0.00010	<0.00010	<0.00010
Manganese	mg/L	0.463	0.0576	0.0293	0.0116
Mercury	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum	mg/L	0.0172	0.0389	0.0181	0.00256
Nickel	mg/L	0.00776	0.00093	0.00086	0.00016
Selenium	mg/L	0.0189	0.0479	0.0148	0.0047
Silver	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Strontium	mg/L	0.0658	0.129	0.067	0.0343
Thallium	mg/L	0.000529	0.000061	<0.000050	<0.000050
Tin	mg/L	0.00053	<0.00020	0.00047	<0.00020
Titanium	mg/L	0.33	0.00066	0.00044	<0.00030
Uranium	mg/L	0.146	0.164	0.071	0.0672
Vanadium	mg/L	0.00456	0.00055	0.00041	0.00016
Zinc	mg/L	0.204	0.0016	0.0043	0.0028

#N/A indicates that the parameter was not measured in the leachate sample.

Field Cell ID: FC-9
Field Cell Rock / Tailings Type: Tailings; bulk rougher tailings
Mass of Field Cell: 100 kg

Station ID		**FC-9**	**FC-9**	**FC-9**
Date		4/28/2010	8/12/2010	9/29/2010
Time		12:00:00 AM	12:00:00 AM	12:00:00 AM
Sample ID		**L881302-2**	**L920049-7**	**L937669-7**
ROUTINE ANALYSIS				
pH		7.70	7.93	7.98
Specific Conductivity	uS/cm	630	125	385
Total Alkalinity	mg/L as CaCO3	49.6	46.6	62.9
Hardness	mg/L as CaCO4	195	42	115
Total Suspended Solids	mg/L	1990	11	<3.0
Total Dissolved Solids	mg/L	405	66.8	214
Arsenic Speciation				
Arsenic (As)	mg/L	0.134	0.115	0.0827
Arsenic, Pentavalent	ug/L	#N/A	#N/A	#N/A
Arsenic, Trivalent	ug/L	#N/A	#N/A	#N/A
NUTRIENTS				
Nitrate-Nitrite	mg/L as N	0.23	<0.071	0.677
Nitrate-N	mg/L as N	0.23	<0.050	0.677
Nitrite-N	mg/L as N	<0.050	<0.050	<0.050
MAJOR IONS				
Bicarbonate	mg/L as HCO3	60.5	56.8	76.7
Carbonate	mg/L as CO3	<5.0	<5.0	<5.0
Hydroxide	mg/L	<5.0	<5.0	<5.0
Sulphate	mg/L	213	10.6	99.5
Chloride	mg/L	23.2	0.54	4.56
Calcium	mg/L	46.4	12.6	30.5
Magnesium	mg/L	19.3	2.56	9.53
Potassium	mg/L	47.9	10.8	23.5
Sodium	mg/L	23.4	1.32	5.02
Ion Balance	mg/L	99.7	98.5	88
DISSOLVED METALS				
Aluminum	mg/L	0.035	0.036	<0.010
Antimony	mg/L	0.0106	0.00761	0.0185
Barium	mg/L	0.0928	0.0137	0.048
Beryllium	mg/L	<0.00050	<0.00050	<0.00050
Bismuth	mg/L	0.00183	0.00149	0.000167
Boron	mg/L	0.0705	0.0123	0.0296
Cadmium	mg/L	<0.00010	<0.00010	<0.00010
Chromium	mg/L	<0.00040	<0.00040	<0.00040
Cobalt	mg/L	0.00189	0.00074	0.00066
Copper	mg/L	0.0019	<0.00060	0.00094
Iron	mg/L	0.147	0.038	<0.010
Lead	mg/L	<0.00010	<0.00010	<0.00010
Manganese	mg/L	0.0617	0.014	0.0075
Mercury	mg/L	<0.00010	<0.00010	<0.00010
Molybdenum	mg/L	0.0405	0.00124	0.00618
Nickel	mg/L	0.00126	0.00043	0.00025
Selenium	mg/L	0.0446	0.00239	0.0127
Silver	mg/L	<0.00020	<0.00020	<0.00020
Strontium	mg/L	0.206	0.0317	0.0953
Thallium	mg/L	<0.000050	<0.000050	<0.000050
Tin	mg/L	<0.00020	0.00044	<0.00020
Titanium	mg/L	0.00291	0.00108	<0.00030
Uranium	mg/L	0.217	0.0217	0.0983
Vanadium	mg/L	0.00073	0.00208	0.00084
Zinc	mg/L	0.0017	0.0023	0.004

#N/A indicates that the parameter was not measured in the leachate sample.

Field Cell ID: FC-10
Field Cell Rock / Tailings Type: Tailings; bulk rougher tailings
Mass of Field Cell: 60 kg

Station ID		**FC-10**	**FC-10**	**FC-10**
Date		4/28/2010	8/12/2010	9/29/2010
Time		12:00:00 AM	12:00:00 AM	12:00:00 AM
Sample ID		**L881302-3**	**L920049-8**	**L937669-8**
ROUTINE ANALYSIS				
pH		7.81	8.06	8.05
Specific Conductivity	uS/cm	616	517	298
Total Alkalinity	mg/L as CaCO3	63.4	81	66.8
Hardness	mg/L as CaCO4	189	162	88
Total Suspended Solids	mg/L	382	<3.0	<3.0
Total Dissolved Solids	mg/L	385	316	163
Arsenic Speciation				
Arsenic (As)	mg/L	0.207	0.156	0.142
Arsenic, Pentavalent	ug/L	#N/A	#N/A	#N/A
Arsenic, Trivalent	ug/L	#N/A	#N/A	#N/A
NUTRIENTS				
Nitrate-Nitrite	mg/L as N	0.257	2	0.671
Nitrate-N	mg/L as N	0.257	1.92	0.671
Nitrite-N	mg/L as N	<0.050	0.077	<0.050
MAJOR IONS				
Bicarbonate	mg/L as HCO3	77.3	98.9	81.4
Carbonate	mg/L as CO3	<5.0	<5.0	<5.0
Hydroxide	mg/L	<5.0	<5.0	<5.0
Sulphate	mg/L	192	146	59.7
Chloride	mg/L	21.1	7.26	1.47
Calcium	mg/L	44.1	40.5	21.8
Magnesium	mg/L	19.2	14.9	8.14
Potassium	mg/L	41.7	37.8	24.9
Sodium	mg/L	25.7	10.3	2.84
Ion Balance	mg/L	100	91.6	92.7
DISSOLVED METALS				
Aluminum	mg/L	0.012	0.013	<0.010
Antimony	mg/L	0.016	0.0205	0.0234
Barium	mg/L	0.117	0.107	0.0545
Beryllium	mg/L	<0.00050	<0.00050	<0.00050
Bismuth	mg/L	0.000784	0.000196	0.00015
Boron	mg/L	0.121	0.0699	0.0288
Cadmium	mg/L	0.00011	<0.00010	<0.00010
Chromium	mg/L	<0.00040	<0.00040	<0.00040
Cobalt	mg/L	0.00156	0.00089	0.00029
Copper	mg/L	0.00273	0.00085	0.00111
Iron	mg/L	0.048	<0.010	<0.010
Lead	mg/L	0.0002	<0.00010	<0.00010
Manganese	mg/L	0.0158	0.0092	<0.0020
Mercury	mg/L	<0.00010	<0.00010	<0.00010
Molybdenum	mg/L	0.0344	0.0134	0.00452
Nickel	mg/L	0.0015	0.00124	0.00022
Selenium	mg/L	0.0473	0.0211	0.0112
Silver	mg/L	<0.00020	<0.00020	<0.00020
Strontium	mg/L	0.215	0.154	0.0824
Thallium	mg/L	<0.000050	<0.000050	<0.000050
Tin	mg/L	<0.00020	0.00038	<0.00020
Titanium	mg/L	0.00077	0.00089	<0.00030
Uranium	mg/L	0.258	0.0942	0.115
Vanadium	mg/L	0.00123	0.0033	0.00161
Zinc	mg/L	0.0025	0.0076	0.0039

#N/A indicates that the parameter was not measured in the leachate sample.

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