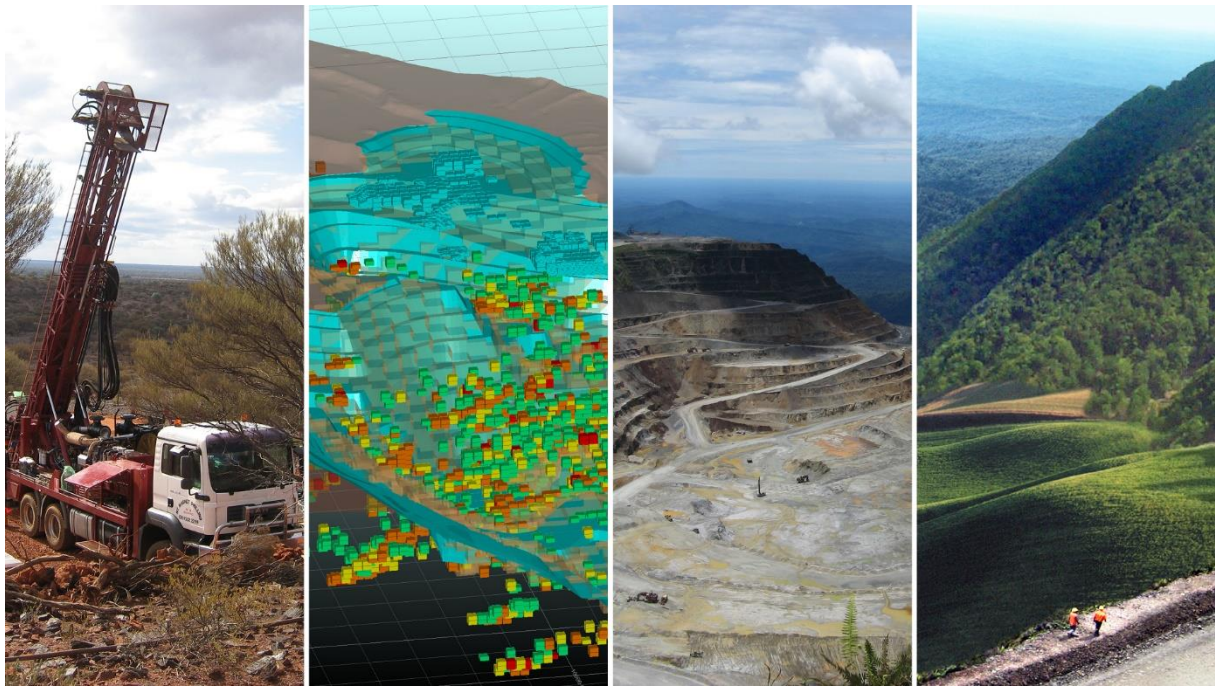


Final

Katanning Gold Project sub-surface materials characterisation – factual report

Katanning Gold Project, Katanning, Western Australia
Ausgold Limited



SRK Consulting (Australasia) Pty Ltd ■ AUG037 ■ November 2025

Final

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Useful Definitions

This list contains definitions of symbols, units, abbreviations, and terminology that may be unfamiliar to the reader.

°C	degrees Celsius
µm	microns
µS/cm	micro siemens per centimetre
ABA	acid base accounting
ABCC	acid buffering characteristic curves
AC	acid consuming
AMD	acid and metalliferous drainage
AMIRA	AMIRA International Limited
ANC	acid neutralising capacity
ANZECC	Australian and New Zealand Environment Conservation Council
AP	acid forming potential
ARD	acid rock drainage
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
Ausgold	Ausgold Limited
BIFs	banded iron formations
BoM	Bureau of Meteorology
Bq/g	becquerels per gram
CarbNP	carbonate neutralisation potential
CEC	cation exchange capacity
CRS	chromium reducible sulfur
DD	diamond drilling
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety (now Department of Mines, Petroleum and Exploration)
DFS	definitive feasibility study
DI	deionised
DMP	Department of Mines and Petroleum (now Department of Mines, Petroleum and Exploration)
DMIRS	Department of Mines, Industry Regulation and Safety (now Department of Mines, Petroleum and Exploration)
DMPE	Department of Mines, Petroleum and Exploration
DWER	Department of Water and Environmental Regulation
EC	electrical conductivity
EPA	Environmental Protection Authority
ESP	exchangeable sodium percentage
GAI	global (or geochemical) abundance index
GARD	global acid rock drainage
GDE	groundwater dependent ecosystems

g/t	grams per tonne
HCl	hydrochloric acid
ICP-OES	inductively coupled plasma optical emissions spectroscopy
INAP	International Network for Acid Prevention
kg H ₂ SO ₄ /t	kilograms of sulfuric acid per tonne
KGB	Katanning Greenstone Belt
KGD	Katanning Gold Deposit
KGP	Katanning Gold Project
km	kilometres
LCS	laboratory control sample
LECO	laboratory equipment corporation
LOD	limit of detection
LPSPD	leading practice sustainable development program for the mining industry
L/s	litres per second
m	metres
mbcl	metres below the surface
MEND	Mine Environment Neutral Drainage (program)
meq/100 g	milliequivalents per one hundred grams
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
NIWA	National Institute of Water and Atmospheric Research
mm	millimetres
MPA	maximum potential acidity
MPL	MPL Laboratories
mRL	metres reduced level
Mt	million tonnes
NAF	non-acid forming
NAG	net acid generation
NATA	National Association of Testing Authorities
NAPP	net acid producing potential
nd	not detected
NMD	neutral mine drainage
NORM	naturally occurring radioactive material
NPR	neutralising potential ratio
nt	not tested
PAF	potentially acid forming
PAF-LC	potentially acid forming with low acid generation capacity
ppm	parts per million

PSD	particle size distribution
QA	quality assurance
QEMSCAN	quantitative evaluation of minerals by scanning electron microscopy
RC	reverse circulation
RPD	relative per cent difference
SAP	sampling and analysis plan
SDI	slake durability index
SEM	scanning electron microscope
SEM-EDS	scanning electron microscopy with energy dispersive spectroscopy
SI	saturation index
SLP	species-level protection
SRK	SRK Consulting (Australasia) Pty Ltd
s:l	ratio of solid to liquid
tba	to be advised
TC	total carbon
TENORM	technologically enhanced naturally occurring radioactive material
TIC	total inorganic carbon
TKN	total Kjeldahl nitrogen
TS	total sulfur
TOC	total organic carbon
UC	uncertain
wt%	weight per cent
XRD	x-ray diffraction
XRF	x-ray fluorescence

Executive Summary

Ausgold Limited (Ausgold) has engaged SRK Consulting (Australasia) Pty Ltd (SRK) to complete a geochemical characterisation assessment in support of the Katanning Gold Project (KGP) definitive feasibility study (DFS). The proposed project includes open pit mining of the Jackson, Jinkas, Olympia and Dingo deposits. The outcomes of the program will be used to support the DFS and subsequent environmental approvals submissions, and inform closure planning.

A total of 161 waste rock samples and 14 ore-grade samples were selected from available drilled materials collected from the proposed KGP pit volumes. The samples were selected to be representative of materials to be mined both proportionally (by lithology and oxidation/weathering categories) and spatially within the proposed pit volumes. Sample selection also considered factors such as the material that will be exposed on the pit walls or stored in ore stockpiles.

The outcomes and conclusions of the assessment can be summarised as follows.

Geochemical assessment

It is concluded that some of the materials proposed to be mined have potential to generate acid or neutral metalliferous drainage.

Waste rock samples

- The materials have a wide range of sulfur contents, ranging from 0.01% to 3.4% total sulfur (TS). In bedrock samples, sulfur speciation studies indicated that sulfide-S dominated (pyrite and pyrrhotite were identified by x-ray diffraction). In contrast, for regolith lithology samples, more than 50% of the sulfur present was sulfate-S (jarosite and gypsum were identified).
- Acid neutralising capacity (ANC) values were low, typically below 30 kg H₂SO₄/t. Assessment of available ANC (relative to total measured ANC) indicated that the readily available, effective ANC was lower (around 25% of the total ANC) and likely dominated by contribution from calcite content.
- Most waste rock samples assessed (85%) were classified as non-acid forming (NAF) if the measured ANC is assumed to be effective (reduced to around 60% if 25% ANC is assumed to be effective). A small proportion of samples (~10%) were classed as potentially acid forming (PAF). The remainder of the samples were of uncertain potential to generate acidity (UC).
- A preliminary sulfur cut-off threshold of ≥0.2% TS may be suitable for identifying PAF material but requires further assessment to better understand the rates of acid generation and neutralisation.
- Elements present in enriched concentrations (global abundance index ≥ 3) in more than 10% of samples for one or more waste lithologies included Ag, As, Cl, S, Se, Te, W, and N.
- Leach testing generated leachates with pH values ranging from pH 4.2 to pH 9.3; most samples (25; 50%) resulted in alkaline leach solutions with a pH above 8. The most acidic leach solutions (pH <5) were generated from five samples with variable sulfur contents (0.07% to 2.7% TS). Concentrations of Al, Ba, B, Cd, Cu, Fe, Li, Mn, Ni, Rb, Sr, and Zn were readily detectable in more than 20% of the leachates. Several minor and trace elements (including Al, As, Cd, Co, Cr, Fe, Mn, Mo, Ni, SO₄, Ti, V, and Zn) exhibited pH-dependent trends

Ore-grade samples

- Total sulfur (LECO) contents were higher than the waste rock samples as expected due to the higher degree of sulfide mineralisation. TS content ranged from 0.037% to 8.8% TS and was dominated by sulfide-S (pyrite and pyrrhotite).
- ANC values for ore-grade samples were generally low, ranging from below the limit of detection (LOD) (<0.5 kg H₂SO₄/t) to a maximum of 26 kg H₂SO₄/t, consistent with the low inorganic carbon content.
- The samples are categorised as follows: 3 NAF, 1 UC, and 10 PAF (including 3 PAF-LC).
- Elements present at enriched concentrations (GAI ≥3) in more than 10% of the samples include Ag, Bi, Re, S, Se, Te, W, and N. Sulfur was enriched in 64% of ore-grade samples.
- Leachate solutions from ore-grade samples generally exhibited neutral to alkaline pH (pH 6.9 to pH 8.4). An exception was one highly acidic leachate (pH 2.5) corresponding to a mafic granulite gneiss sample, that also contained the highest concentrations of most trace elements, often several orders of magnitude above those measured in neutral or alkaline leachates. Mn peaked in a leachate from a near-neutral felsic granulite gneiss sample.

The scope of the geochemical assessments completed to date is consistent with a Phase 2 level assessment as defined by the Department of Mines, Petroleum and Exploration (DMPE) (DMP, 2016).

Physical assessment (erosion risk)

- The preliminary physical assessment of oxide samples indicated a range of dispersion risks from negligible (Emerson Class 6 and Class 8) or slight (Class 5) through to some dispersion risk (Class 2), and are typically strongly sodic.
- Slake durability tests were performed on nine waste rock samples from the fresh zone. All samples exhibited a retained mass greater than 99% after the second wetting-drying cycle, indicating extremely high durability according to the classification proposed by Gamble (1971).
- Further assessment of bulk-mined materials (representative of run-of-mine waste rock) should be completed when possible.

Fibrous mineral assessment

Fibrous mineral screening was undertaken for 25 samples (24 waste rock samples and 1 ore sample). Countable asbestiform fibres were identified in only one mafic granulite (gneiss) sample, from the Olympia pit. The fibres were identified as actinolite, ferroactinolite, and chrysotile by scanning electron microscopy (SEM).

Radioactivity

Mass-based uranium and thorium results for waste rock and ore samples were combined with specific activities (measured in becquerels per gram) to calculate the activities of U-238 and Th-232. These calculated activities were well below the definition of a radioactive material (material containing more than 1 Bq/g) and no further radioactivity assessment was considered necessary.

Closing remarks

The outcomes of the assessment have been used to prepare a preliminary waste rock inventory along with high-level management recommendations. Recommendations have been made as key activities to include in forward works programs.

1 Introduction

1.1 Background

Ausgold Limited (Ausgold) has engaged SRK Consulting (Australasia) Pty Ltd (SRK) to complete a geochemical characterisation assessment in support of the Katanning Gold Project (KGP) definitive feasibility study (DFS). The proposed project includes open pit mining of the Jackson, Jinkas, Olympia and Dingo deposits. The outcomes of the program will be used to support the DFS and environmental approvals submissions, and inform closure planning.

1.2 Objectives

The characterisation program aims to assess and classify sub-surface materials according to whether they pose a risk of causing potential environmental harm due to:

- acid and metalliferous drainage (AMD) of all metals and metalloids, regardless of whether the conditions are acidic, including neutral mine drainage (NMD)
- saline materials and/or drainage
- sodic and/or dispersive material
- erosive material
- fibrous minerals
- naturally occurring radioactive materials (NORMs) and technologically enhanced naturally occurring radioactive materials (TENORMs).

1.3 Scope of work

The characterisation program has been developed in accordance with leading practice outlined in national and international guidelines for the prevention and management of AMD, including the following documents:

- *Materials Characterisation Baseline Data Requirements for Mining Proposals* (DMP, 2016)
- *Mining Proposal Guidance – How to prepare in accordance with Part 1 of the Statutory Guidelines for Mining Proposals* (DMIRS, 2020)
- *Preventing Acid and Metalliferous Drainage* (DITR, 2016), Leading Practice Sustainable Development Program for the Mining Industry (LPSPD), developed by the Australian Government, Department of Industry, Tourism and Resources
- *Global Acid Rock Drainage (GARD) Guide*, Version 1 (2012), developed by the International Network for Acid Prevention (INAP)
- *Prediction Manual for Drainage Chemistry from Sulphidic Geological Materials* (Price, 2009) MEND Report 1.20.1
- *ARD Test Handbook* (AMIRA, 2002), Project P387A Prediction and Control of Acid Mine Drainage
- *Environmental Factor Guideline – Terrestrial Environmental Quality* (EPA, 2016)

- *Australian Water Guidelines for Fresh and Marine Waters* (and its updates including new guidelines/framework: How to use the Water Quality Guidelines) (ANZECC and ARMCANZ, 2000)
- *Managing naturally occurring radioactive material (NORM) in mining and mineral processing guideline* (DMP, 2010), NORM-6, Reporting Requirements
- *Management of fibrous minerals in Western Australian mining operations* (DMP, 2015).

The geochemical characterisation of tailings samples is not included in this assessment. Tailings will be assessed once samples have been generated from the DFS metallurgical program.

1.4 Report structure

This report includes:

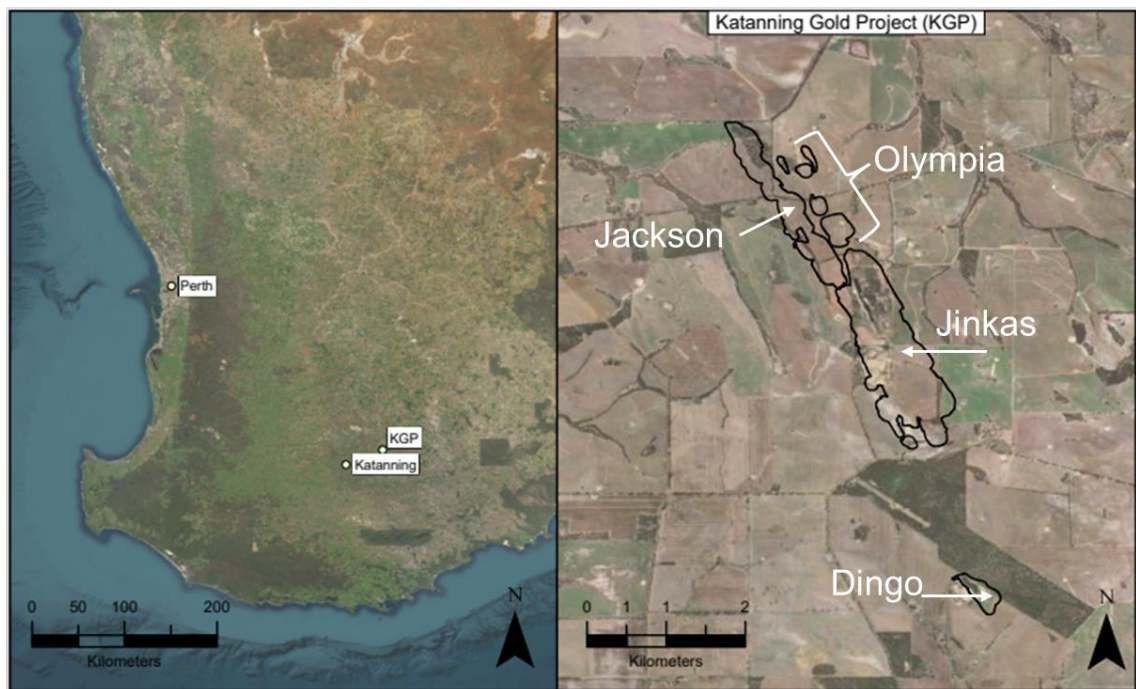
- introduction and relevant background information (Section 1)
- site setting information pertinent to this assessment (Section 2)
- an overview of the materials characterisation work program (Section 3)
- geochemical characteristics of sub-surface materials (Section 4)
- preliminary materials inventory (Section 5)
- conclusions (Section 6).

2 Site setting

2.1 Location

The KGP is located in the Shire of Katanning, approximately 260 km southeast of Perth and 36 km northeast of Katanning (Figure 2.1). The proposed DFS mine plan includes open pit mining across four deposit areas including Jackson, Jinkas, Dingo and Olympia.

Figure 2.1: Site location

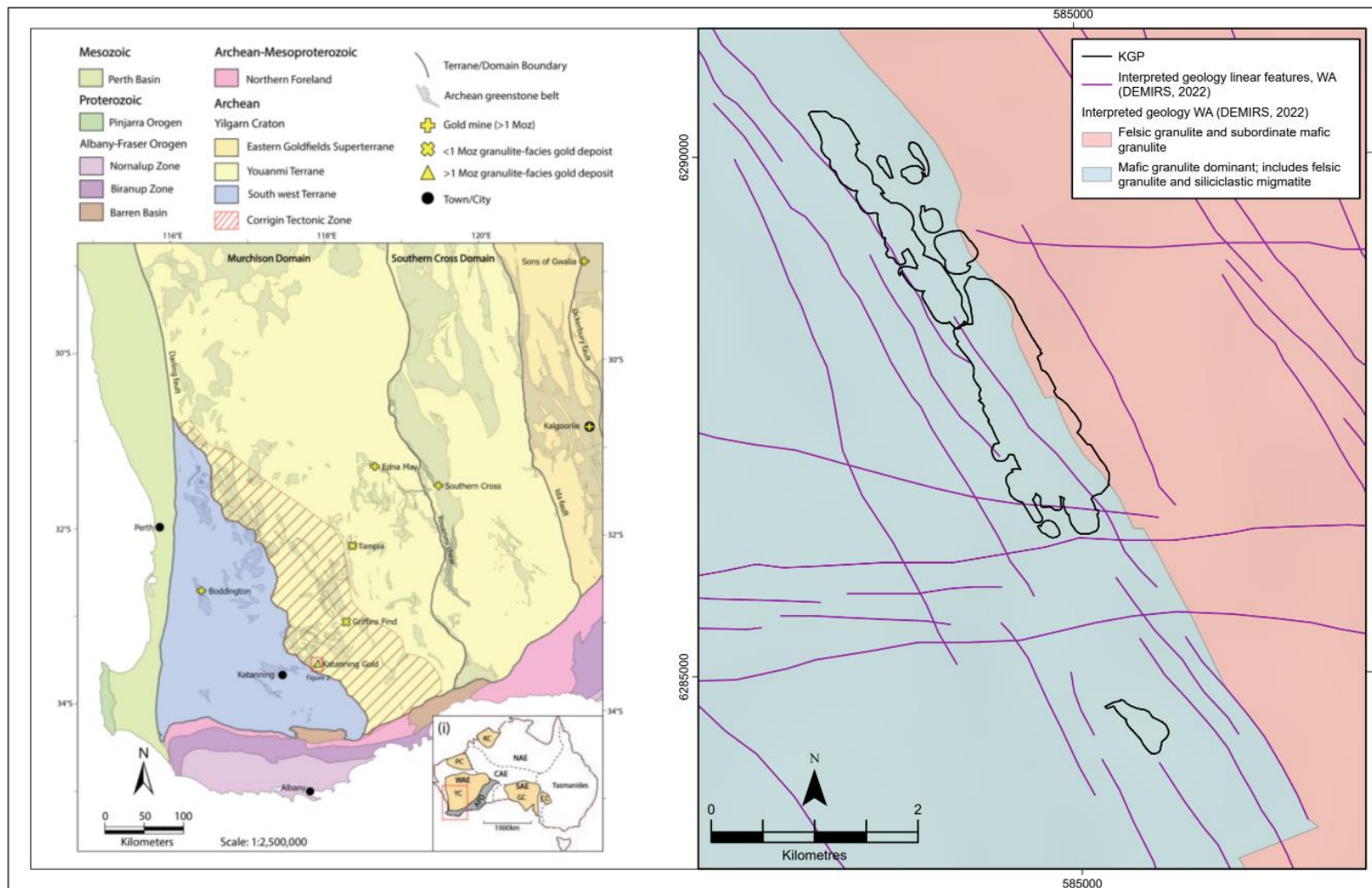


2.2 Geological overview

The project is located in the Katanning Greenstone Belt (KGB), which has been recognised as being part of the Corrigin Tectonic Zone on the southwestern extent of the Youanmi Terrane, within the Archean Yilgarn Craton (Quentin de Gromard, Ivanic and Zibra, 2021). The KGB is dominated by felsic metasedimentary and felsic to mafic metavolcanic gneisses, which are locally intruded and defined by tabular bodies of tonalite-trondhjemite-granodiorite composition gneisses, metasyenogranites, and metamozongranites (Crawford, 2021; Quentin de Gromard, Ivanic and Zibra, 2021; Heseldell, 2023).

The Katanning Gold Deposit (KGD) is hosted within gently dipping metavolcanic mafic to felsic gneisses. The gneisses are intruded by the Jinkas Granodiorite sill. The host sequence is bounded to the west by the syn-metamorphic Footwall Granodiorite and to the east by a thick hanging wall sequence of felsic metasedimentary gneisses (Heseldell, 2023). The gold mineralisation is generally associated with network to semi-massive pyrrhotite $\pm$ pyrite sulfide assemblages in zones of weak to pervasive silica and magnetite alteration. Higher-grade gold mineralisation is located within hinge zones associated with areas of increased parasitic folding (Greentree, 2013; Crawford, 2021; Heseldell, 2023).

Figure 2.2: Regional geology



Sources: DEMIRS, 2022; Heseldell, 2023

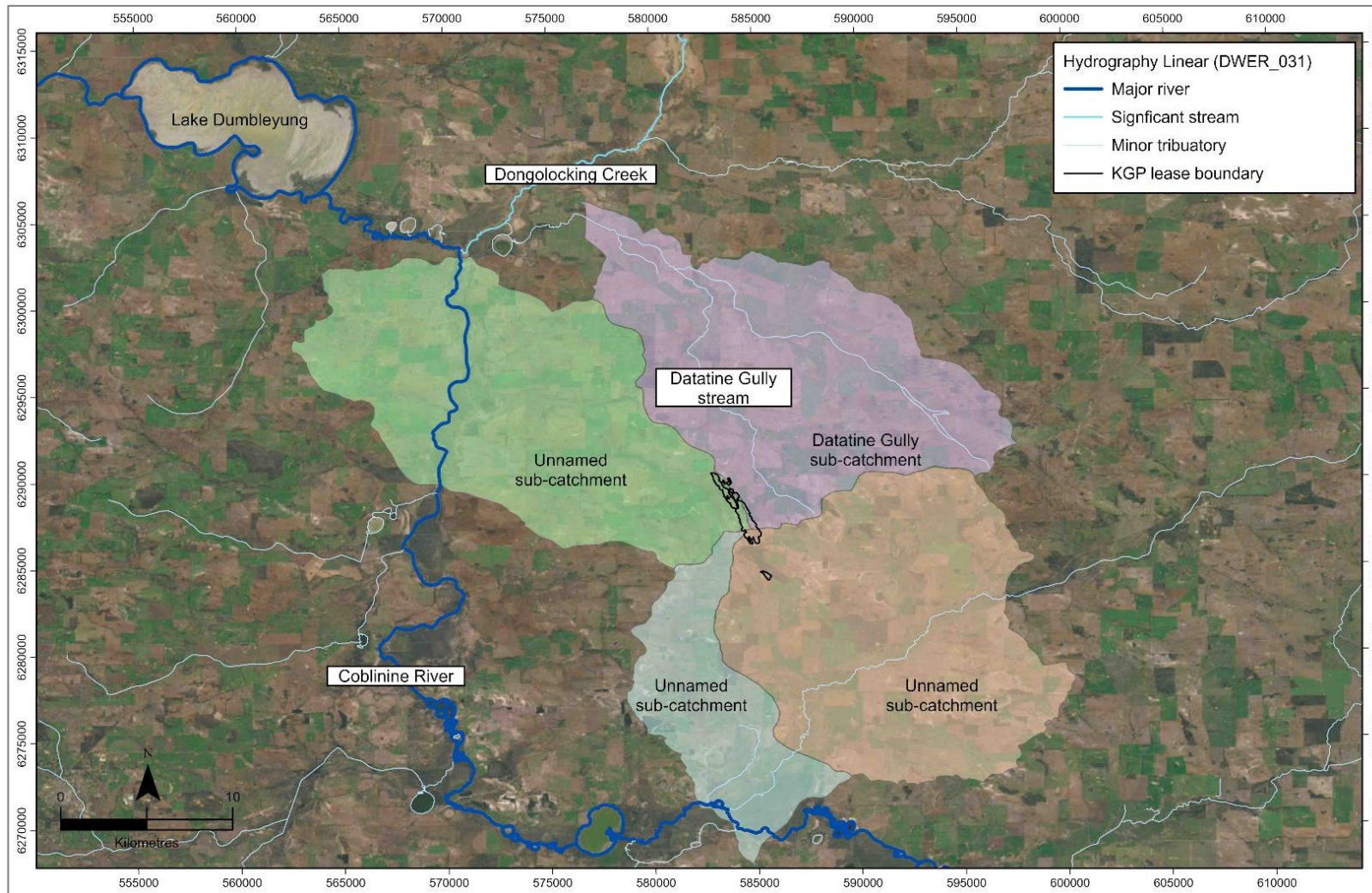
2.3 Hydrology

The KGP lies within the Hardy Estuary – Coblinine River catchment of the greater Blackwood River basin (DWER, 2024a). Locally, it is positioned across four sub-catchments: Datatine Gully on the northeastern side and three unnamed sub-catchments on the southern and western sides (DWER, 2024b) (Figure 2.3).

Surface drainage is primarily towards the Coblinine River, which is approximately 6 km south of the KGP and flows westward for about 15 km before draining to the northwest. As is typical for this region, the Coblinine River feeds into a series of salt lakes, including Lake Dumbleyung, which is approximately 24 km northwest of the KGP mining tenement (Water and Rivers Commission, 2000) (Figure 2.3). Lake Dumbleyung is one of Western Australia's largest permanent salt lakes (Water and Rivers Commission, 2000).

A tributary of the Coblinine River, Datatine Gully (classified as a significant stream), is located approximately 1.5 km northeast of KGP (DWER, 2018). Datatine Gully drains northwest into Dongolocking Creek, which lies about 16 km to the northwest. Dongolocking Creek, in turn, feeds into the Coblinine River a further 2 km to the northwest.

Figure 2.3: Surface water catchments



Sources: DWER, 2018, 2024a, 2024b.

2.4 Hydrogeological overview

Within the Blackwood River catchment, aquifers can be categorised into five distinct groups (SRK, 2024a):

- surficial (alluvial and colluvial deposits)
- sedimentary (Tertiary sediments and sands)
- regional fault zones and dykes
- weathered rock (saprolite)
- fractured bedrock.

Yields within weathered and fractured bedrock are highly variable, depending on the degree of weathering and fracturing (Water and Rivers Commission, 2000). Similarly, yields from fractured zones associated with major faults and dyke intrusions can also vary significantly recording flow rates up to 50 L/s (SRK, 2024a). Sedimentary aquifers, often associated with palaeodrainage systems, typically produce high yields and form major aquifers in the region. These aquifers commonly contain brackish to saline groundwater (Water and Rivers Commission, 2000). In contrast, surficial aquifers are less saline or fresh, generally with low yields and are separated from underlying saline aquifers by locally developed clay-rich sediments (SRK, 2024a).

Groundwater discharge primarily occurs into surface water features, including rivers and creeks. Groundwater flow generally follows the topographic gradient, with the highest elevations at the KGP mine site (400 m to 433 mAHD) and the lowest elevations in the surrounding creeks, streams, and rivers. At the KGP mine site, the groundwater level is at approximately 350 m AHD and gradually decreases to 280 mAHD at the Coblinine River, located directly west of the mine site.

3 Materials characterisation program

3.1 Objectives and approach

3.1.1 Objectives

The main objective of the sub-surface materials characterisation program was to assess the acid generation and metalliferous drainage risks based on the geochemical properties of the materials that will be exposed during mining. The propensity for mined materials to generate acidity is a function of the balance between their acid forming constituents (e.g. sulfides) and acid neutralising constituent minerals (e.g. carbonates). This balance can be determined quantitatively using acid-base accounting (ABA). Materials are classified as potentially acid forming (PAF) when the acid forming potential (AP) is greater than the acid neutralising capacity (ANC).

AMD is the term used collectively for drainage that may display one or more of the following chemical characteristics (DITR, 2016):

- low pH (typically below pH 4.5)
- high soluble metal concentrations (e.g. iron, aluminium, manganese, cadmium, copper, lead, zinc, arsenic and mercury)
- elevated acidity values
- high sulfate salinity (typically 500 mg/L to 10,000 mg/L)
- low concentrations of dissolved oxygen (<6 mg/L)
- low turbidity or suspended solids (combined with one or more of the above characteristics).

Other objectives of the characterisation program included:

- assessment of NMD and/or saline drainage – a function of sulfide mineral oxidation and salt release from the mined materials
- assessment of physical properties such as the presence of dispersive materials
- identification of any additional environmental or health and safety issues, such as the presence of asbestiform minerals, and/or radioactive materials.

3.1.2 Approach

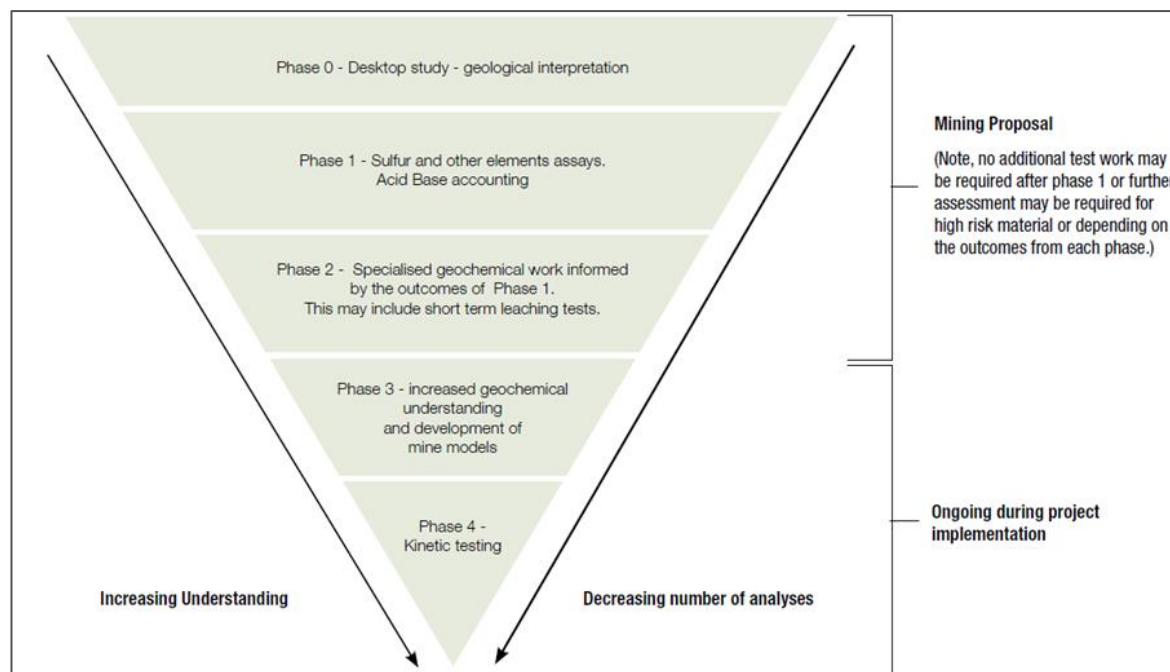
The Department of Mines, Petroleum and Exploration (DMPE) recommends that a phased approach be adopted for geochemical assessments as illustrated in Figure 3.1 (DMP, 2016).

To achieve this, the following activities were undertaken:

- desktop data review of the drill hole database and material types and quantities to be mined
- review of the outcomes of previous geochemical assessments
- sample selection for geochemical testing
- design and implementation of a phased laboratory testing and analysis program.

The current study comprised sampling and laboratory testing to Phase 2, a level sufficient to support a Mining Proposal.

Figure 3.1: Phases of material characterisation



Source: DMP (2016)

3.2 Previous geochemical characterisation assessments

Three previous geochemical characterisation studies have been completed in support of the KGP, including:

- *Katanning Gold Project – Pre-feasibility Study Geochemical Characterisation of Waste Rock* by Knight Piésold (2022a) which included geochemical characterisation of waste rock (31 samples) and ore (3 samples)
- *Katanning Gold Project – Tailings Geochemistry Summary* by Knight Piésold (2022b) which included characterisation of 2 composited tailings samples
- *Katanning Gold Project – Materials Characterisation Study* by Landloch (2023) which included assessment of 109 waste rock samples and 2 ore samples.

The outcomes of these assessments were reviewed (SRK, 2024b; provided in Appendix A) and are summarised in Table 3.1.

Following the review of these assessments, it was concluded that further geochemical characterisation was required to meet the requirements of a Phase 2 level assessment as defined by the DMPE (DMP, 2016). The identified data gaps included:

- insufficient sample numbers assessed to achieve spatial and lithological representativity of waste rock materials within the pit volumes proposed to be mined

- limited detailed geochemical assessment – including limited sulfur speciation and carbon speciation testing, no acid base characterisation curves (to assess effective ANC), no x-ray diffraction (XRD) analysis and limited short-term leach tests (which had been carried out using a dilute solid to liquid ratio (1:20 s:l))
- limited fibrous mineral screening
- no assessment of radioactivity.

Table 3.1: Summary of outcomes from previous geochemical characterisation studies

Study	Knight Piésold (2022a, 2022b)	Landloch (2023)
Number of waste rock samples	34 (5 within currently proposed pits)	109 (many from outside the proposed pits)
Number of ore-grade samples	3	2
Number of tailings samples	1	-
Total S (%)	Waste: <0.01% to 1.35% (average 0.16%) Ore: 0.22% to 1.08% S	Waste: <0.01% to 3.94% S Ore: 0.22% to 1.08% S
Sulfur speciation	S-HCl only – sulfide-S inferred to be dominant form of S Sulfur contents low in oxide/transitional materials (<0.1%S)	Sulfide-S inferred to be dominant form of S in oxide (where >0.01% TS), transitional and fresh materials.
ANC (total only)	13 to 177 kg H ₂ SO ₄ /t (average 30 kg H ₂ SO ₄ /t)	17.4 to 144 kg H ₂ SO ₄ /t (average 43 kg H ₂ SO ₄ /t) (11 samples only)
NAPP	Waste rock: -176 to 30 kg H ₂ SO ₄ /t (average -25 kg H ₂ SO ₄ /t)	-126 to 100 kg H ₂ SO ₄ /t; most (10 of 11 samples) gave negative NAPP values
NAG pH	NAG pH 3 to NAG pH 10.6	NAG pH 2.4 to NAG pH 11.4
Classification – waste rock samples	NAF (29), AC (1), PAF (1)	NAF (108; based on TS <0.3%), PAF-LC (3), PAF (1)
Classification –ore-grade samples	NAF (1), PAF (1), PAF-LC	NAF (2)
Enriched elements relative to average crustal abundances	S, As, Bi, C, Cd, Co, Cr, Mo, Ni	S, As, Bi, Cd, Co, Cr, Mo and Ni
Static leach testing	Not completed	Static leaching of 22 samples (1:20 s:l ratio) generating alkaline pH values and low EC (up to 110 µS/cm). Trace elements typically below or close to detection limits. Detectable concentrations of Al, Cr, Cu, Ni, and Zn.
Fibrous mineral assessment	Not completed	18 samples screened – unknown mineral fibres identified in one mafic dolerite sample (fresh). Mineral fibres not identified.
Tailings assessment	- TS (1.64%), sulfate-S (0.32%), sulfide-S (1.32% by calculation) - ANC (26 kg H₂SO₄/t) - NAG pH 2.8 with acidity to pH 7 of 20 kg H₂SO₄/t - NAPP 24 kg H₂SO₄/t - Classed as PAF - Enriched elements relative to average crustal abundance (Cl, Cr, Mo, S, Se)	Not completed
Supernatant	- pH 7 17,980 µS/cm (EC) - Dominant ions (Na, Cl, SO₄) - Detectable solutes B, Ba, Ca, Cl, Co, Cr, Cu, F, Fe, K, Mg, Mn, Mo, Na, Mi, P, Pb, CN (including total, weakly acid dissociable and free), SO₄, Sr, V and Zn.	Not completed

Notes: AC – acid consuming; EC – electrical conductivity; NAPP – net acid producing potential PAF-LC – potentially acid forming with low acid generation capacity.

3.3 Drill hole database review

As reported in SRK (2024b), the KGP geological database was reviewed (received in September 2024), including a total of 4,090 drill holes and a total logged in-pit drill hole length of 105,390 m (including 86,666 m of waste) within the DFS pit shells. The in-pit volume(s) of the DFS pit shells are intercepted by drilled diamond drill holes (predominantly drilled between 2017 and 2023), with a corresponding drilled total length of 3,238 m (including 2,807 m of waste-grade intervals).

Limited x-ray fluorescence (XRF) sulfur data are available for the in-pit diamond drill core (approximately 40 m length). Calcium has been assayed over 2,464 m of in-pit drilled length within the DFS pits, but similarly, only 40 m length has been assayed from diamond drill core.

For the waste rock lithologies, sulfur contents were found to be generally low and represent a low risk of acid generation – the median sulfur content is below 0.1% S in all waste rock lithologies. Ore-grade materials within the pit have sulfur contents (by XRF) ranging from <0.001% to 19.7%, with median and average values of 0.051% and 0.91%, respectively.

Inferred ANC (from the calcium content) was calculated using:

$$\text{ANC}_{\text{Ca}} \text{ (in units of kg H}_2\text{SO}_4\text{/t)} = \text{Ca (in wt\%)} \times 24.5.$$

For the waste rock lithologies the inferred ANC_{Ca} values range from <0.02 kg H₂SO₄/t to 720 kg H₂SO₄/t, with median and average values of 0.4 kg H₂SO₄/t and 13.9 kg H₂SO₄/t, respectively.

Further details can be found in the *Katanning Gold Project: supplementary sub-surface materials characterisation – data review and Sampling and Analysis Plan (SAP)* (SRK, 2024b) (Appendix A).

3.4 Sample selection

Waste rock samples have been selected to be representative of materials to be mined both proportionally (by lithology and oxidation/weathering categories) and spatially within the proposed KPG pit volumes. Sample selection also considered factors such as the material that will be exposed on the pit walls or stored in ore stockpiles.

A list of target sample intervals was prepared by SRK and subsequently reviewed by Ausgold geologists. The diamond drill core had recently been re-logged by Ausgold geologists and the target sample list was revised to reflect the updated lithological logging¹.

Following sample collection by Ausgold, the final sample list used in this assessment included 161 waste rock samples and 14 ore-grade samples (Appendix B). The samples were predominantly collected from drill core intervals but reverse circulation (RC) pulps were also collected where necessary.

¹ The final sample list is given in Appendix B. The target sample list, and some of the logged lithologies, included in Appendix A (the SAP) have been superseded.

3.4.1 Samples for geochemical characterisation

Waste rock

The waste rock tonnage to be mined is estimated to be approximately 871 Mt, and will comprise granulites (felsic, intermediate mafic, mafic, and speckled mafic), quartz monzonite, mafic dolerite and footwall granite. The waste rock generated will include oxide (12%), transitional (17%) and fresh (71%) materials.

A cut-off value of 0.3 ppm Au has been applied to delineate waste materials from ore-grade material. Table 3.1 lists the number of waste rock samples selected.

The locations of the selected waste rock samples are shown in Figure 3.1.

Ore

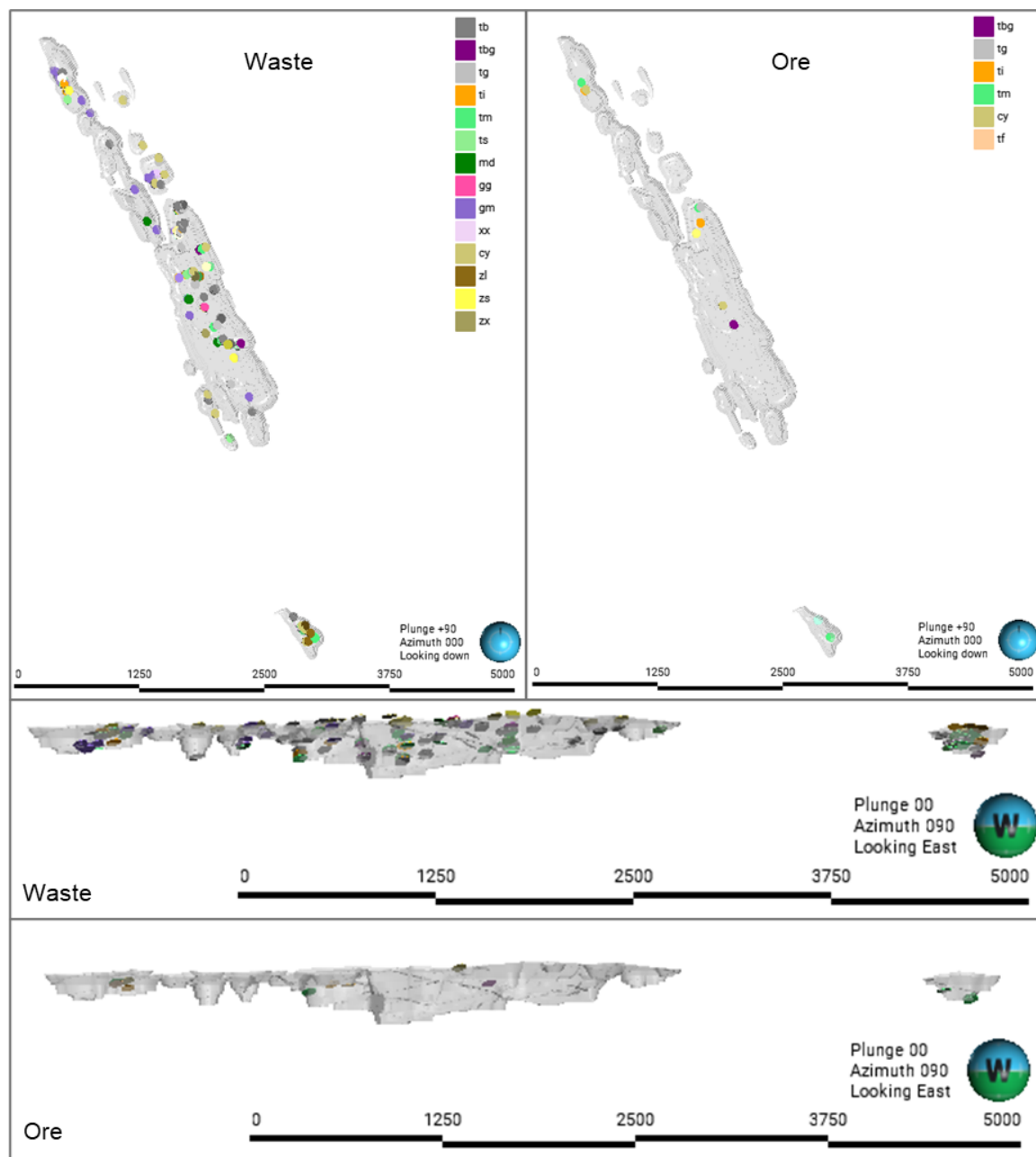
A subset of ore samples was selected to assess the characteristics of materials that may report to ore stockpiles (Table 3.1). The selected ore-grade samples have gold contents ranging between 0.3 g/t and 1.8 g/t.

Table 3.2: Selected waste rock and ore-grade samples

Lithology code	Lithology	Waste rock samples			Ore-grade samples
		Total	DD core	RC pulps	DD core
tb	Biotite (dominant) quartz granulite (gneiss)	30	18	12	-
tbg	Biotite garnet gneiss	3	3	-	1
tf	Felsic granulite (gneiss)	-	-	-	1
tg	Garnet (dominant) quartz granulite (gneiss)	30	23	7	1
ti	Intermediate granulite (gneiss)	9	9	-	3
tm	Mafic granulite (gneiss)	24	22	2	6
ts	Speckled mafic granulite (gneiss)	6	4	2	-
md	Dolerite	5	3	2	-
gg	Granite	1	1	-	-
gm	Monzogranite	18	3	15	-
xx	Calc-silicate rock	6	5	1	-
cy	Clay	20	14	6	2
zl	Lateritic duricrust	3	2	1	-
zs	Soil	3	2	1	-
zx	Exotic overburden (roadbase)	3	1	2	-
Total		161	110	51	14

Note: DD – diamond drilling.

Figure 3.2: Sample locations for waste rock and ore-grade samples



3.4.2 Samples for physical (erosion risk) assessment

A subset of samples were selected for physical testing (Table 3.3) including a range of waste rock lithologies and oxidation/weathering categories. Oxide samples (14) were selected for:

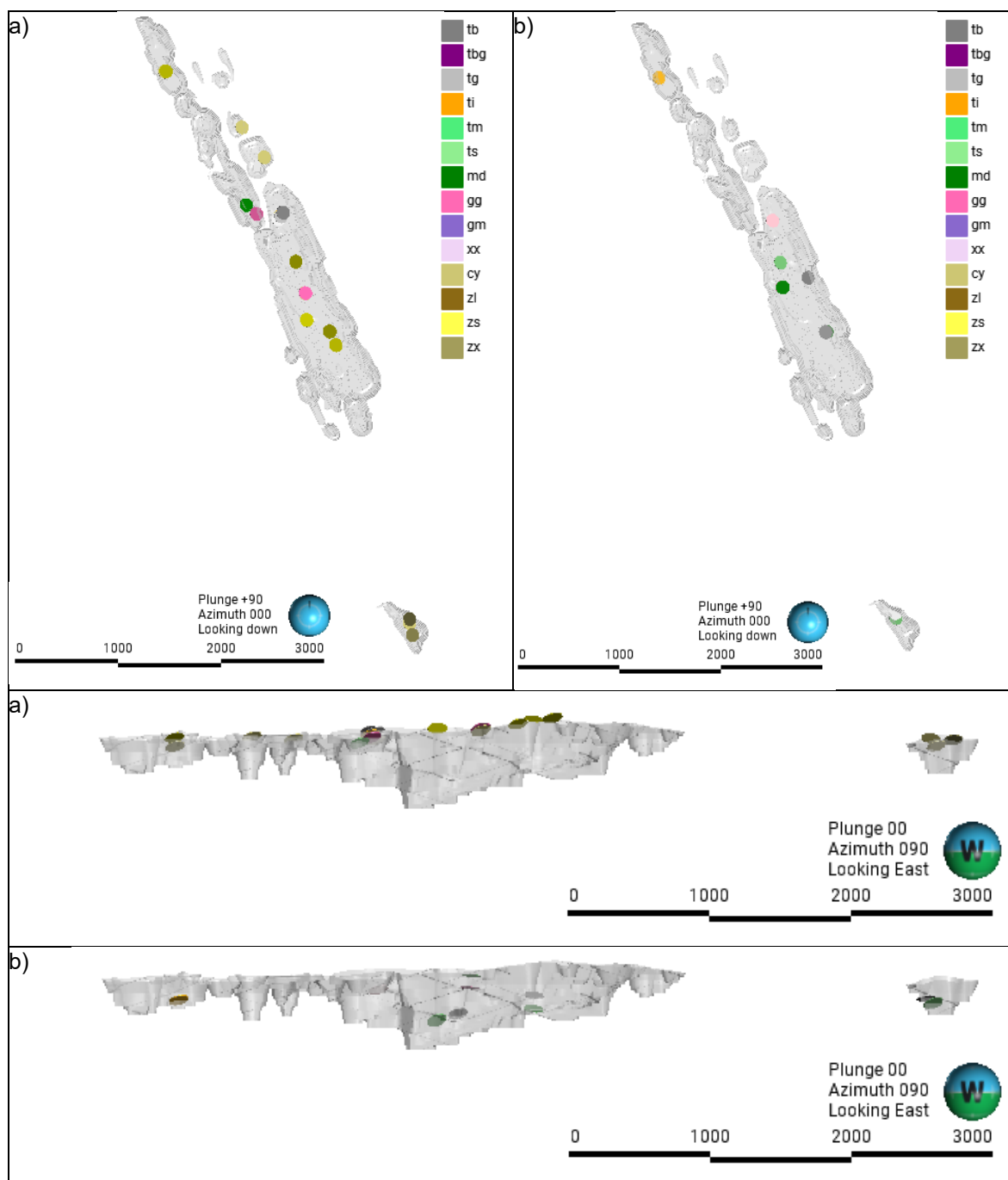
- Emerson aggregate tests to assess the propensity of the materials to disperse
- cation exchange capacity (CEC) measurements (including exchangeable sodium percentage) to determine the sodicity of the samples.

Fresh (9) and transitional (1) samples were selected for slake durability tests, to assess the materials resistance to deterioration under weathering conditions. The drill hole interval locations for the samples selected are shown in Figure 3.2.

Table 3.3: Samples selected for physical characterisation testwork

Lithology code	Lithology	Weathering class	Emerson and CEC	Slake durability
tb	Biotite (dominant) quartz granulite (gneiss)	Oxide	2	
tg	Garnet (dominant) quartz granulite (gneiss)	Oxide	1	
ti	Intermediate granulite (gneiss)	Oxide	1	
gg	Granite	Oxide	1	
cy	Clay	Oxide	4	
zl	Lateritic duricrust	Oxide	2	
zx	Exotic overburden (roadbase)	Oxide	1	
zs	Soil	Oxide	2	
md	Dolerite	Transitional		1
tb	Biotite (dominant) quartz granulite (gneiss)	Fresh		2
tg	Garnet (dominant) quartz granulite (gneiss)	Fresh		1
ti	Intermediate granulite (gneiss)	Fresh		1
tm	Mafic granulite (gneiss)	Fresh		2
ts	Speckled mafic granulite (gneiss)	Fresh		1
gm	Monzogranite	Fresh		1
xx	Calc-silicate rock	Fresh		1
Total			14	10

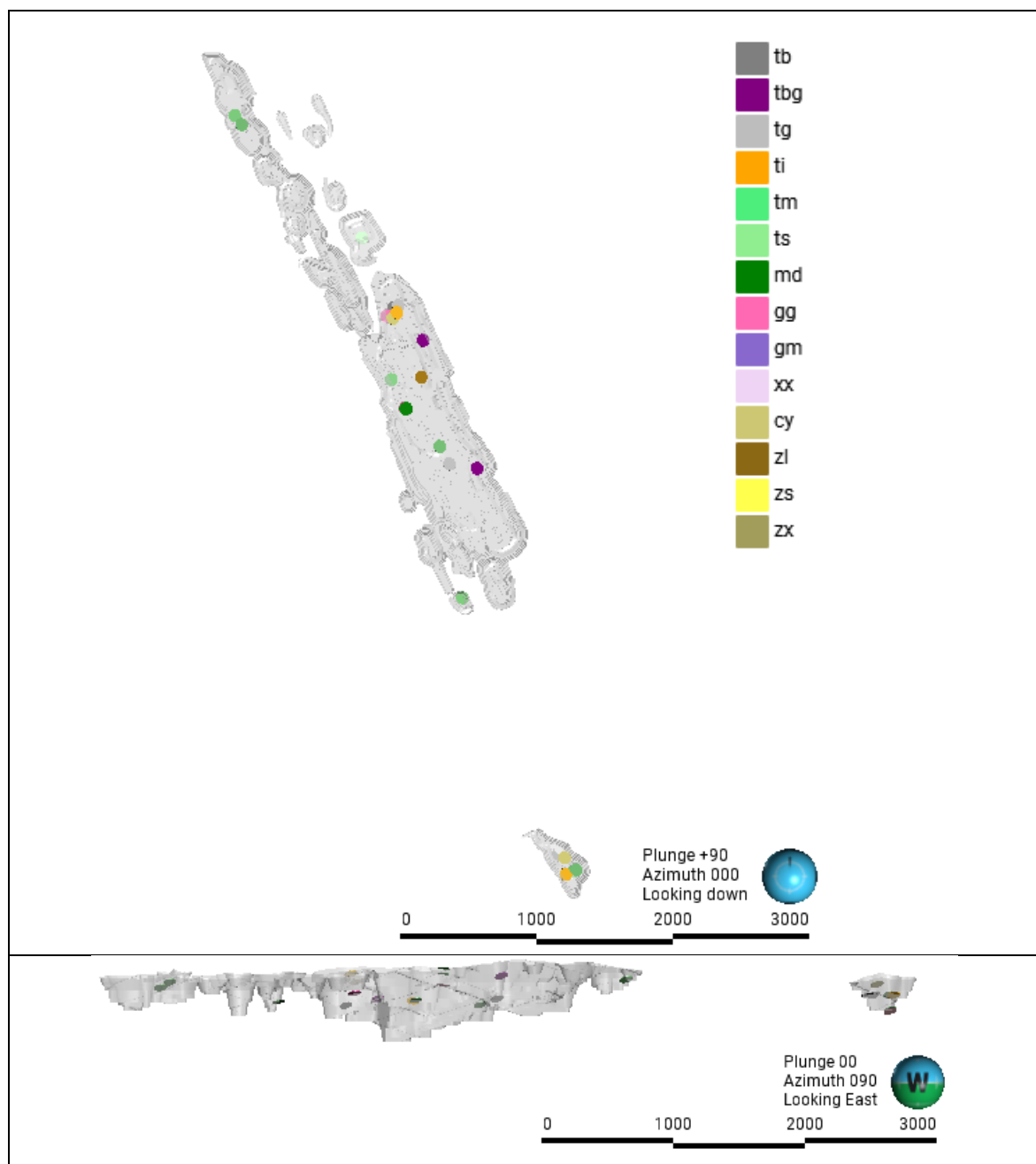
Figure 3.3: Locations of physical testing samples showing (a) oxide and (b) transitional/fresh samples



3.4.3 Samples for fibrous minerals assessment

Approximately 15% of samples, including 23 waste rock samples and 1 ore-grade sample, were screened for fibrous minerals in advance of other testwork to ensure that appropriate health and safety laboratory procedures were implemented for the laboratory program. The samples were selected from a range of lithologies, depths and locations within the proposed pit volumes (Figure 3.4).

Figure 3.4: Locations of samples selected for fibrous minerals assessment



3.5 Laboratory testing program

3.5.1 Sample handling

The samples were dispatched under chain of custody to, and analysed by, MPL Laboratories (MPL) in Myaree, Perth. Most of the testwork was conducted directly by MPL. Services that could not be provided in-house by MPL were subcontracted to appropriate National Association of Testing Authorities (NATA) accredited laboratories.

3.5.2 Sample preparation

The waste rock and ore-grade samples were rough crushed (to <10 mm) prior to geochemical testing. Sub-samples were collected and pulverised (to <75 µm) prior to acid-base accounting and multi-element testwork. Static leach tests were completed on rough crushed (<10 mm) materials. Samples were selected for the following physical assessments:

- CEC tests were completed on a <2 mm fraction
- Emerson aggregate tests were completed on 'as-received' samples, either as RC pulp samples or rough crushed (<10 mm) core samples
- slake durability tests were completed on fragments of core.

Samples submitted for fibrous mineral screening were tested on pulverised <75 µm sub-samples.

3.5.3 Laboratory program

The static testing laboratory program was developed in accordance with DMPE (DMP, 2016) guidelines and comprised two phases as outlined in Table 3.4.

The Phase 1 and Phase 2 static test methods are summarised in Appendix B and are generally consistent with the *ARD Test Handbook* (AMIRA, 2002). The static leach test methodology used is based on MEND (Price, 2009) guidelines.

Table 3.4: Laboratory program for Phase 1 and Phase 2

Testing phase/type	Test description	Number of waste rock samples	Number of ore-grade samples	Total number of samples
Phase 1	Paste pH and EC	161	14	175
	Total sulfur analysis by LECO analyser	161	14	175
	ANC (AMIRA, 2002)	161	14	175
	Single addition net acid generation tests (including NAG pH and, where TS detectable, NAG acidity to pH 4.5 and pH 7)	161	14	175
	Multi-element chemical assay (4-acid digest) ¹	161	14	175
	<i>B, Cl, F, Hg content</i> ²	82	8	90
	Fibrous mineral screening	24	1	25
Phase 2	Sulfur speciation for sulfide (chromium reducible sulfur)	58	8	66
	Sulfur speciation for sulfate (HCl digest method)	62	8	70
	Nitrogen suite (nitrite, nitrate, TKN and total nitrogen)	37	7	44
	Carbon speciation (TC, TIC and TOC)	55	6	61
	ABCC	17	2	19
	Mineralogical assessment (quantitative XRD)	15	5	20
	Short-term leach tests (DI water) ³	50	9	59
Physical testing	Emerson aggregate test (dispersivity)	14	-	14
	Cation exchange capacity and exchangeable sodium percentage	14	-	14
	Slake durability	10	-	10

Notes: ABCC – acid buffering characteristic curves; DI – deionised; NAG – net acid generation; TC – total carbon; TIC – total inorganic carbon; TKN – total Kjeldahl nitrogen; TOC – total organic carbon.

Laboratory method descriptions and common calculations are included in Appendix B.

¹ The multi-element analytical suite included the following parameters: Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, U, V, W, Y, Zn, and Zr.

² A subset of 82 waste rock and 8 ore-grade samples were selected for B, Cl, F, and Hg analysis

³ Short-term leach tests were conducted using DI water and included the following analytical suite: pH, EC, alkalinity, sulfate, Ca, Mg, Na, Al, Sb, As, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Mo, Ni, Zn, Hg, Se, Ag, U and nutrient suite (ammonia, nitrite, nitrate, TKN, total nitrogen, total phosphorous and reactive phosphorous).

To further assess solute leaching behaviour, a subset of samples will be selected for supplementary leach assessment in Phase 3 of the laboratory program. Phase 3 test methodologies may include kinetic column tests (free-draining AMIRA columns). The data obtained from these programs would be used as inputs to DFS water quality assessments and to inform the development of waste management strategies and closure planning.

3.5.4 Quality control and quality assurance

MPL employs internal quality assurance (QA) methods in line with NATA accreditation to ensure the results provided are reliable and representative of actual conditions and not influenced by external factors during analysis. A review of the quality reports provided by MPL indicated that

generally, the QA indicators reported by MPL (e.g. laboratory duplicates, method blanks, matrix spikes, and laboratory control samples) were within standard limits.

Three samples (PFL0924-45, PFL0924-04 and PFL0924-66) recorded spikes in the recovery for fluoride, nitrite, and nitrite + nitrate (NO_x) that were outside routine acceptance criteria (70% to 130%), and this may be due to suspected non-homogeneity and/or matrix interference effects. However, an acceptable recovery was achieved for the laboratory control sample (LCS).

Duplicates for sample PFL0924-95 exceed the relative per cent difference (RPD) acceptance criteria for alkalinity. The results have been accepted as it is considered that the difference in the duplicated analyses are likely to be due to the inhomogeneous nature of the sample.

4 Sub-surface materials characterisation results

4.1 Waste rock

4.1.1 Mineralogy

Mineralogical assessment by quantitative XRD was undertaken on 15 waste rock samples to identify the mineral assemblages present. The samples included granulite (gneiss – including tb, tbg, tg, ti, tm, and ts), dolerite (md), monzogranite (gm), and calc-silicate rock (xx) lithologies from the Jinkas, Dingo and Jackson deposits.

A total of 14 samples were analysed at Intertek laboratory using a full-profile Rietveld method, that relies exclusively on published crystallographic data without the use of an internal standard. As a result, total amorphous content includes true amorphous phases as well as unanalysed materials, lacking suitable crystallographic data.

Preliminary screening of one mafic granulite (tm) sample (BSRC1451, 75–76 m) indicated that asbestiform minerals may be present. The XRD analysis of this sample was conducted at Microanalysis laboratory² using a corundum internal standard, with crystalline concentrations calculated via the Hill/Howard algorithm following Rietveld refinement.

The waste rock mineralogical results are presented in Table 4.1.

Sulfur minerals

The sulfide minerals identified in the samples included pyrite and pyrrhotite. Pyrite was identified in 14 (of 15) samples and ranged from trace levels (<0.5 wt%) to 4 wt% in a monzogranite (gm) sample. Pyrrhotite was recorded in three samples: 7 wt% in a mafic granulite gneiss (tm) and <0.5 wt% in a dolerite (md) sample and a biotite garnet gneiss (tbg) sample. Figure 4.1 shows the locations of samples submitted for XRD relative to the sulfide mineral shells modelled by Ausgold. The XRD results show limited agreement with the modelled shells; of the four samples with greater than 0.5% S (calculated from the reported XRD sulfide mineral contents), only one sample (BSDD048_57_59 (ti); 3 wt% pyrite) was coincident with the corresponding sulfide wireframe shell.

Sulfate minerals jarosite (<0.5 wt% to 1 wt%) and gypsum (<0.5 wt%) were identified in two samples – intermediate granulite gneiss (ti) and monzogranite (gm). Jarosite is a hydroxysulfate mineral, which is a weathering product from sulfide mineral oxidation.

Carbonate minerals

Calcite was recorded in 11 (of 15) samples (<0.5 wt% to 32 wt%), including 28 wt% in a garnet-dominant quartz granulite gneiss (tg) sample, and between 9 wt% and 32 wt% in the calc-silicate rocks (xx). Dolomite was found in eight samples, with contents ranging between 1 wt% and 4 wt%.

² Due to health and safety protocol limitations at Intertek laboratory.

Rhodochrosite was the most consistently recorded carbonate, identified in 14 (of 15) samples, at minor quantities (≤ 1 wt%). Magnesite was present in 12 (of 15) samples, also ≤ 1 wt%. Other identified carbonates recorded included nesquehonite (1 wt% in three samples) and siderite (trace to 1 wt% in two samples).

Meionite, though classified as a silicate, contains a functional carbonate group and was identified in three waste rock samples (up to 6 wt%). These samples included one garnet-dominant quartz granulite gneiss (tg) and two calc-silicate rocks (xx).

Other minerals

Sodium calcium plagioclase was the dominant silicate mineral, present in all samples at contents ranging between 1 wt% and 40 wt%. Quartz (up to 35 wt%) and clinopyroxene (up to 22 wt%) were also commonly identified. Serpentine (14 wt%) was recorded in the mafic granulite sample with suspected asbestiform mineral content (reported in Section 4.1.13). Oxides/oxyhydroxides were present at concentrations up to 12 wt%, with ilmenite and magnetite being the most frequently identified.

All waste rock samples contained amorphous phases, ranging between 9 wt% and 30 wt%; the highest amorphous content was reported for the mafic granulite sample (tm; fresh zone) with 14 wt% serpentine content.

Table 4.1: Waste rock mineralogical assessment results (by XRD)

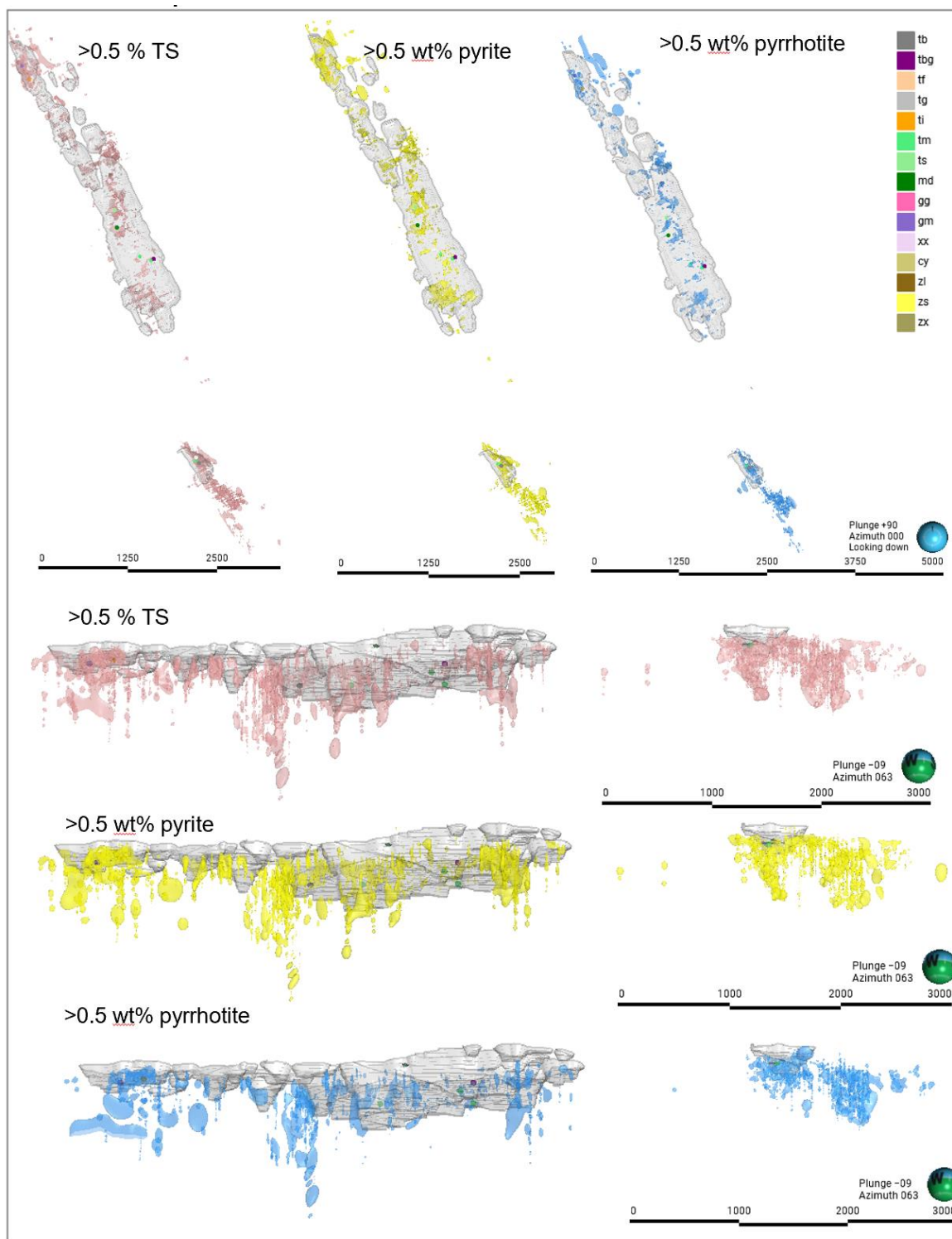
Mineral	Approximate formula	Pit	Jinkas	Dingo	Jinkas	Jinkas	Jinkas	Jack	Jinkas	Dingo	Jinkas	Olympia	Jinkas	Jinkas	Jack	Jinkas	Dingo
		Drill hole	BSDD005	BSDD033	BSDD016	BSDD001	BSDD027	BSDD048	BSDD016	BSDD044	BSDD027	BSRC1451	BSDD032	BSDD022	BSRC0130	BSDD002	BSDD008
		Depth interval (mbcl)	105–105.5	50–52	41–43.5	96–98	106.52–108.7	57–59	128–130	66–68	102.8–104.8	75–76	150–152	4.4–4.8	69–71	54–55.6	47.88–49.17
		Weathering class	fr	ww	fr	fr	fr	fr	fr	fr	fr	fr	fr	mw	fr	fr	fr
		Lithology code	tb	tb	tbg	tg	tg	ti	tm	tm	tm	tm	ts	md	gm	xx	xx
Pyrite	FeS ₂	Sulfide	0.5	1	0.5	0.5	0.5	3	1	0.5	0.5		0.5	0.5	4	0.5	0.5
Pyrrhotite	Fe _(1-x) S _x (x=0-0.2)				0.5				7					0.5			
Jarosite	KFe ₃ (SO ₄) ₂ (OH) ₆	Sulfate						0.5							1		
Gypsum	CaSO ₄ .2H ₂ O							0.5							0.5		
Calcite	CaCO ₃	Carbonate	1	1		28	1		0.5	0.5	1		0.5	1		9	32
Dolomite	Ca(Fe,Mg)(CO ₃) ₂		2	2	1				4	3	1		1	3			
Rhodochrosite	MnCO ₃		0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	1	1
Siderite	FeCO ₃							1								0.5	
Magnesite	MgCO ₃		1	1		1	0.5	0.5	0.5	1	1		0.5	1		0.5	1
Nesquehonite	MgCO ₃ .3H ₂ O					1										1	1
Serpentine	(Mg,Fe,Ni) ₃ Si ₂ O ₅ (OH) ₁₀	Phyllosilicate										14					
Chlorite ¹	(Fe,Al,Mg,Li,Ni) ₆ (Si,Al) ₄ O ₁₀ (OH) ₈		2	3	0.5		2	1	1	1	0.5	11	1	0.5	4		
Epidote	(Ca,Al) ₂ (Al,Fe) ₃ Si ₃ O ₁₂ OH							2		2			2		2		
Kaolin ¹	Al ₂ Si ₂ O ₅ (OH) ₄			0.5						0.5				1			
Mica ¹	(K,Ca,Na,Li)(Al,Mg,Fe) ₂ (Si,Al) ₄ O ₁₀ (OH) ₂		3	5	13	0.5	4	3	8	0.5	7	4	1	7	0.5	2	0.5
Talc – pyrophyllite ¹	(Fe,Al,Mg,Ni) ₃ Si ₄ O ₁₀ (OH) ₂		0.5	0.5					0.5			4	0.5	0.5	0.5		
Expanding clay ¹									0.5								
Quartz	SiO ₂	Silicate	22	22	35	3	32	9	13	1	8	1	0.5	5	14	4	8
Meionite	Ca ₄ Al ₆ Si ₆ O ₂₄ CO ₃					4										6	2
Garnet	(Mg,Fe,Ca,Mn,Li) ₃ (Al,Fe) ₂ (SiO ₄) ₃				6	8					1					5	1
Potassium feldspar	KAISi ₃ O ₈		8	2	2	13	7	2	1		14		1		5	11	4
Amphibole	e.g. (Na,Ca,Li) ₂ (Fe,Mg,Al) ₅ (Si,Al) ₈ O ₂₂ (OH) ₂		0.5	1	0.5	1		7	3	13	1	8	35	6	7	1	1
Clinopyroxene	(Ca,Mg,Fe,Na)(Fe,Al,Mg)Si ₂ O ₆		7	5	8	7	2	20	16	20	8	15	13	22	8	16	4
Wollastonite	Ca ₃ Si ₃ O ₉		1	1		14	1		1							16	33
Sodium calcium plagioclase	(Na,Ca)(Al,Si) ₂ Si ₂ O ₈		38	43	23	7	39	35	31	40	30		28	39	30	16	1
Orthopyroxene	(Ca,Fe,Mg) ₂ Si ₂ O ₆											7					
Rutile	TiO ₂	Oxides/ oxyhydroxides		0.5			0.5				1			1			
Diaspore	AlO(OH)					1											1
Goethite	FeO(OH)																
Ilmenite	FeTiO ₃		1	1	0.5	1	0.5	1	1	2	1		1	0.5	1	1	1
Magnetite	Fe ₃ O ₄		2	1	0.5	0.5	1	4		3	8	7	2	2	12		0.5
Apatite	(Ca,Mn,Ba,Pb,REE) ₅ (PO ₄) ₃ (OH,F,Cl)	Phosphate	0.5	0.5			0.5		0.5		1			0.5	1	0.5	
Amorphous content ²			12	11	11	10	10	12	13	13	17	30	15	12	11	11	9
Total			100	100	99	100	99	100	100	99	100	101	100	100	100	100	100

Notes: Values shown in grey italicised text were reported as below the analytical detection limit.

¹ For confirmation of the clay mineralogy, a clay separation followed by analysis of oriented clay mounts would be required.

² The amorphous content may contain some of the more poorly crystalline clay phases.

Figure 4.1: XRD sample locations relative to sulfur model shells



4.1.2 Paste pH and electrical conductivity

Paste tests were carried out at a 1:2 solid to liquid ratio. An acidic paste pH (pH <5) may indicate the presence of acidic reaction products generated by sulfide oxidation. A neutral or alkaline pH (pH 7 or above) suggests the presence of reactive neutralising minerals or, if categorised as PAF, that the sample has not yet oxidised sufficiently to become acidic.

Paste EC provides an indication of the readily soluble oxidation products and salts that may be dissolved when the material is contacted by water. The results may also be used to infer the state of oxidation or weathering (higher EC values usually suggest a more advanced state of oxidation/weathering), provided the sampling method, sample storage, and geochemical properties are known. For example, where the sample originates from a naturally saline environment, an elevated paste EC may simply indicate the presence of residual salts in the sample. The potential for the release of salts from materials has implications for the seepage quality that may be discharged from the materials tested, and may be used to infer solute release from future landforms (containing the materials) and potential requirements for rehabilitation.

Table 4.2 provides a comparison of the average paste results for each lithology. A full statistical summary and complete results are available in Appendix E.

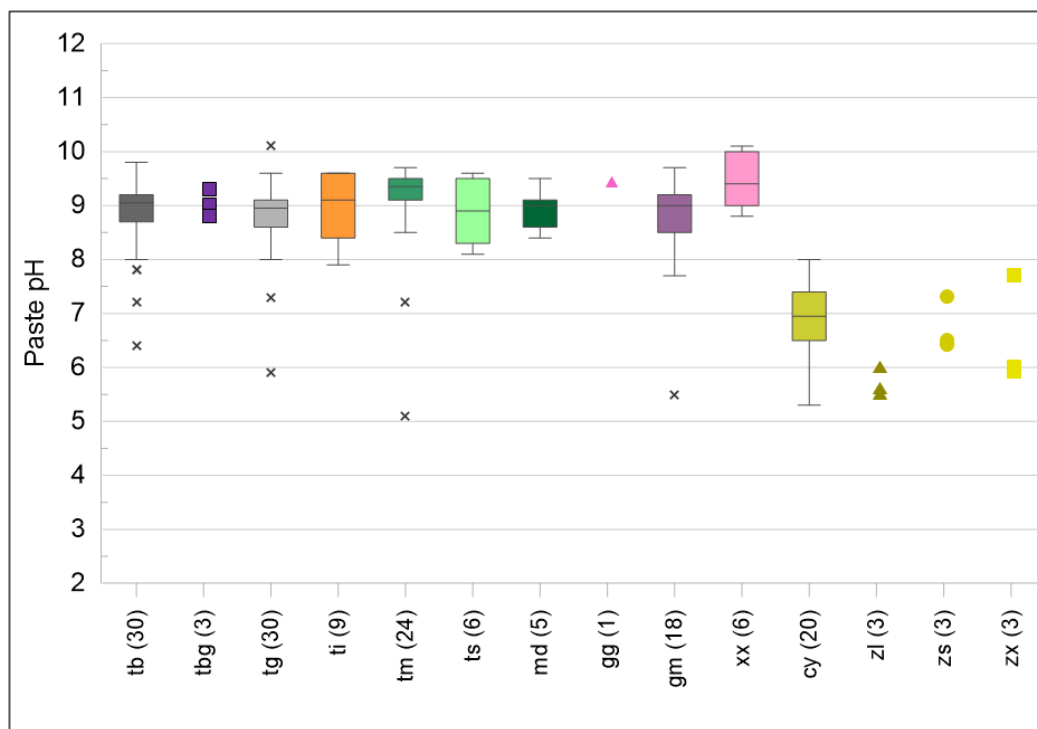
Paste pH values generated ranged from acidic (pH 5.1) from a mafic granulite gneiss (tm) sample to alkaline (pH 10.1) from garnet-dominant quartz granulite gneiss (tg) and calc-silicate rock (xx) samples (Figure 4.2). Most waste rock samples (122 of 161) produced alkaline paste pH results above pH 8. Exceptions included two samples (tm, gm) that generated mildly acidic paste pH values of pH 5.1 and pH 5.5. These samples were older RC pulp samples from the fresh zone with higher sulfur contents (2.7% to 3.4% TS) that are likely to be partially oxidised. Slightly acidic to near-neutral paste pH values were generated from the clay (cy), lateritic duricrust (zl), soil (zs), and exotic overburden (roadbase) (zx) lithologies, with average values between pH 5.7 and pH 6.8.

Figure 4.3 presents paste pH values for waste rock samples as a function of total sulfur (LECO). A moderate negative correlation was observed for clay (cy) samples, with paste pH decreasing as sulfur content increased (Pearson $r = -0.64$). This may reflect increasing amounts of stored acidity within the clay samples (e.g. the presence of hydroxysulfate minerals). No consistent relationships were identified for the other lithologies. This indicates that typically samples containing sulfides have not yet been oxidised sufficiently to become acidic.

Paste EC values ranged from fresh (160 $\mu\text{S}/\text{cm}$) in mafic granulite gneiss (tm) to saline (5,300 $\mu\text{S}/\text{cm}$) in clay (cy). The majority of samples (137 of 161) recorded EC below 1,000 $\mu\text{S}/\text{cm}$. Only the clay (cy) samples had an average paste EC value above 1,000 $\mu\text{S}/\text{cm}$ (average 1,500 $\mu\text{S}/\text{cm}$). The two partially oxidised higher sulfur samples with acidic paste pH values generated paste EC values of 3,600 $\mu\text{S}/\text{cm}$ (tm) and 2,800 $\mu\text{S}/\text{cm}$ (gm).

Figure 4.5 shows the paste EC of the waste rock samples plotted as a function of total sulfur (LECO). No clear trends are observed between sulfur content and the paste EC values recorded.

Figure 4.2: Paste pH results (waste rock)



Notes: The sample count for each lithology is shown in brackets. The horizontal lines shown in the box-and-whisker 'boxes' equate to the median value within the series, and the upper and lower limits of the boxes equate to the 75th and 25th percentiles of the data, respectively. Whiskers are defined by 1.5-times the interquartile range. The 'x' indicates outliers. Lithologies with fewer than six samples are plotted as individual data points rather than boxes and whiskers.

Figure 4.3: Paste pH as a function of total sulfur (LECO) (waste rock)

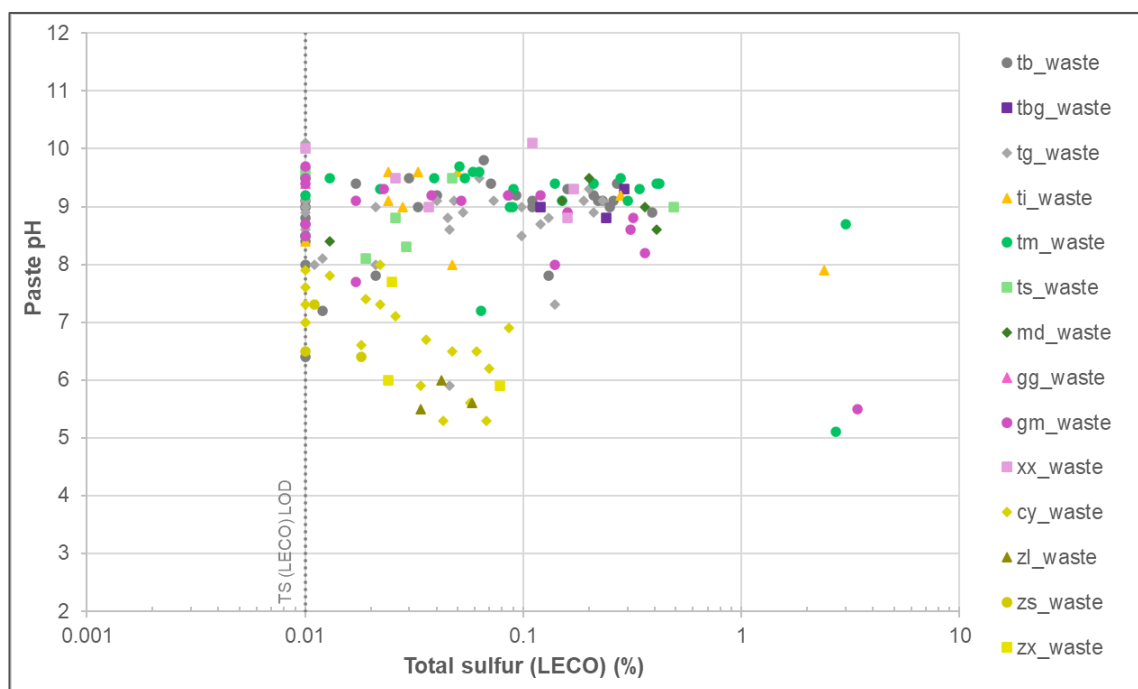
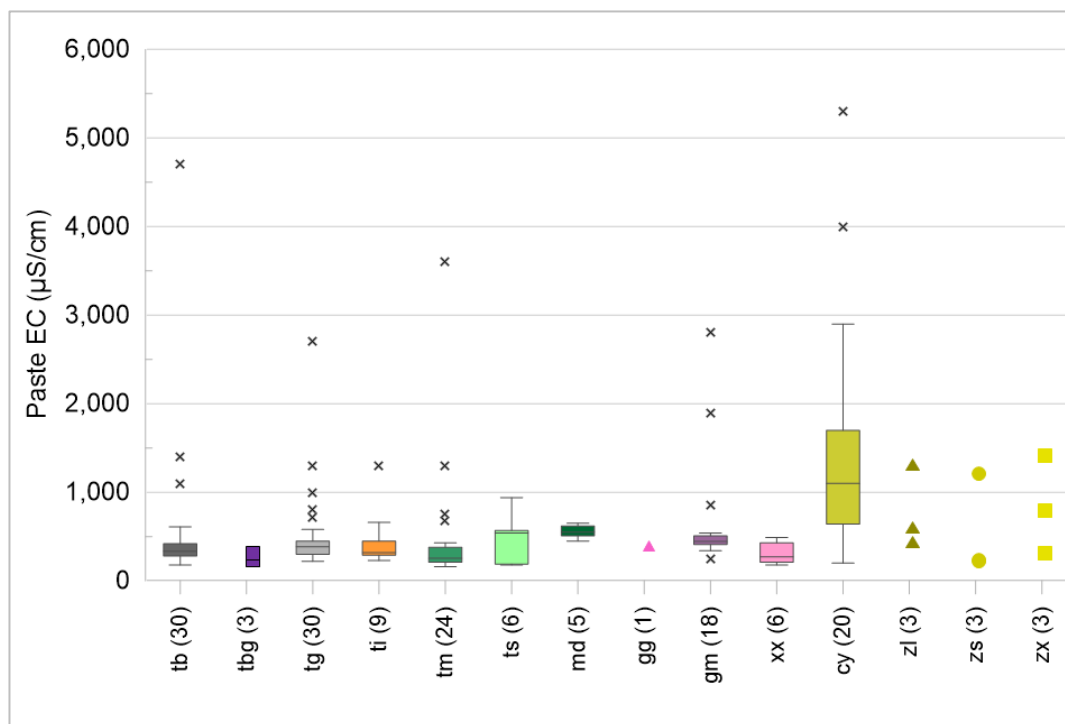


Figure 4.4: Paste EC results (waste rock)



Note: Refer to Figure 4.2 for box and whisker plot definitions.

Figure 4.5: Paste EC as a function of total sulfur (LECO) (waste rock)

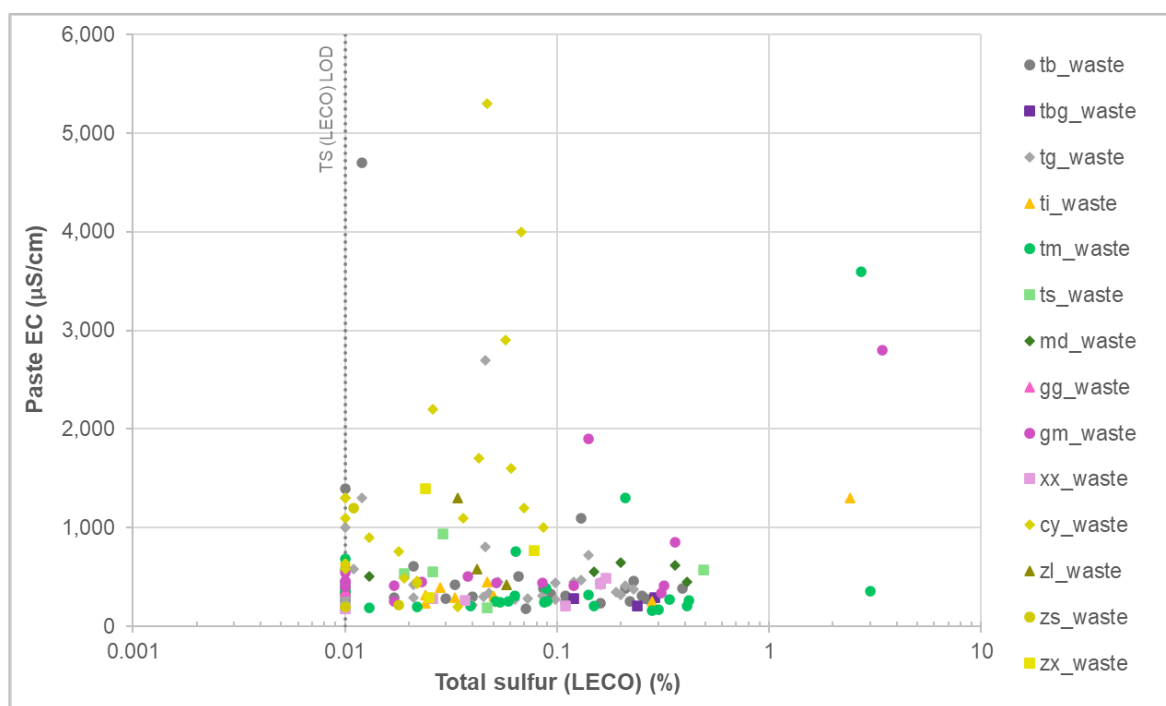


Table 4.2: Waste rock summary of ABA results (average values)

Lithology code	Lithology	Sample count	Paste pH	Paste EC	Total S	NAG pH	NAG to pH 4.5	NAG to pH 7.5	ANC	MPA	NAPP
			s.u.	µS/cm	%	s.u.	kg H ₂ SO ₄ /t				
tb	Biotite (dominant) quartz granulite (gneiss)	30	8.8	550	0.097	7.3	<0.5	0.68	18	3	-15
tbg	Biotite garnet gneiss	3	9	260	0.22	5.5	0.83	1.6	17	6.6	-10
tg	Garnet (dominant) quartz granulite (gneiss)	30	8.8	520	0.074	7	<0.5	0.68	28	2.3	-26
ti	Intermediate granulite (gneiss)	9	8.9	470	0.32	7.1	4.2	5.7	21	9.9	-11
tm	Mafic granulite (gneiss)	24	9	480	0.36	6.6	4.9	6.2	27	11	-16
ts	Speckled mafic granulite (gneiss)	6	8.9	490	0.1	7.2	<0.5	0.82	18	3.2	-15
md	Dolerite	5	8.9	560	0.23	6.2	<0.5	1.1	25	6.9	-18
gm	Monzogranite	18	8.7	660	0.28	6.2	2.4	3.3	12	8.7	-3.3
gg	Granite	1	9.4	360	<0.01	7.5	<0.5	<0.5	9.5	0.31	-9.2
xx	Calc-silicate rock	6	9.5	310	0.086	9.4	<0.5	<0.5	200	2.6	-197
cy	Clay	20	6.8	1,500	0.034	6.6	<0.5	1.8	3.7	1	-2.7
zl	Lateritic duricrust	3	5.7	770	0.045	5.5	<0.5	2.5	1.1	1.4	0.3
zs	Soil	3	6.7	540	0.013	6.1	<0.5	1.5	2.7	0.4	-2.3
zx	Exotic overburden (roadbase) dump material	3	6.5	820	0.042	6.1	<0.5	1.7	2	1.3	-0.7

Notes: MPA – maximum potential acidity.

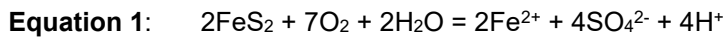
Where there is only one sample, the reported value is given. Average values given for paste pH and NAG pH have been calculated from the average hydrogen ion concentrations for each lithology.

4.1.3 Acid-base accounting overview

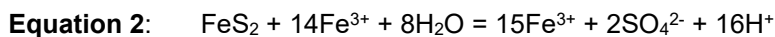
Commonly, the major source of acidity associated with mine wastes is the oxidation of sulfide minerals, particularly iron sulfides such as pyrite or pyrrhotite.

Equations 1 and 2 show the principal acid-generating reactions involving pyrite (where the hydrogen ions released is a measure of the free acid generated).

Pyrite oxidation by oxygen:

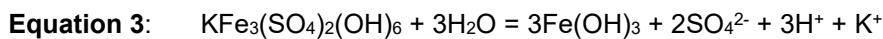


Pyrite oxidation by ferric iron:



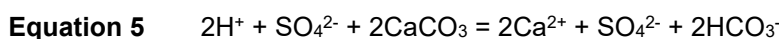
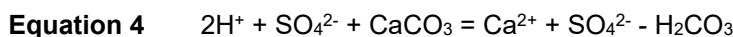
Pyrrhotite may form transitional oxidation products, such as elemental sulfur, with the result that the acid generating potential of pyrrhotite is uncertain (Belzile et al., 2004).

Hydrosulfate minerals such as jarosite and alunite can also release acid under certain conditions, as shown in Equation 3. This occurs when dissolution is coincident with precipitation of hydroxides (Linklater et al., 2012). However, the low solubility of the hydroxysulfate places an upper bound on the acidity that would be released.



Some minerals can neutralise acidity. The calcium and magnesium carbonate minerals (e.g. calcite and dolomite) are of greatest importance in terms of neutralising acidity as they react rapidly and buffer in the near-neutral pH range.

The calcium carbonate dissolution reaction, which is part of the process that neutralises acidity, is as follows:



(Note: the equations are balanced for different dissolved reaction product carbonate species.)

Iron-bearing carbonates such as siderite do not contribute to the net neutralising capacity because, under oxidising conditions, ferrous (Fe^{2+}) is converted to ferric (Fe^{3+}). At neutral pH conditions the ferric reacts with water and precipitates as $\text{Fe}(\text{OH})_3$ and releases acid (3H^+), resulting in no net neutralisation.

Silicate minerals can contribute to neutralising capacity, although reaction rates are generally slow relative to carbonate minerals. Similarly, the magnesium carbonate mineral magnesite is known to have slow reaction times, around four orders of magnitude slower than calcite (Price, 2009).

In combination, results from ABA, NAG, and elemental and mineralogical analysis are used to assess the relative proportions of acid-generating and acid consuming materials.

Summary results from the ABA and NAG testing for the lithology groups are presented in Table 4.2. The results are discussed further in the following sections. Full analytical results are included in Appendix E, along with additional summary statistics.

4.1.4 Acid potential

Sulfur content and distribution

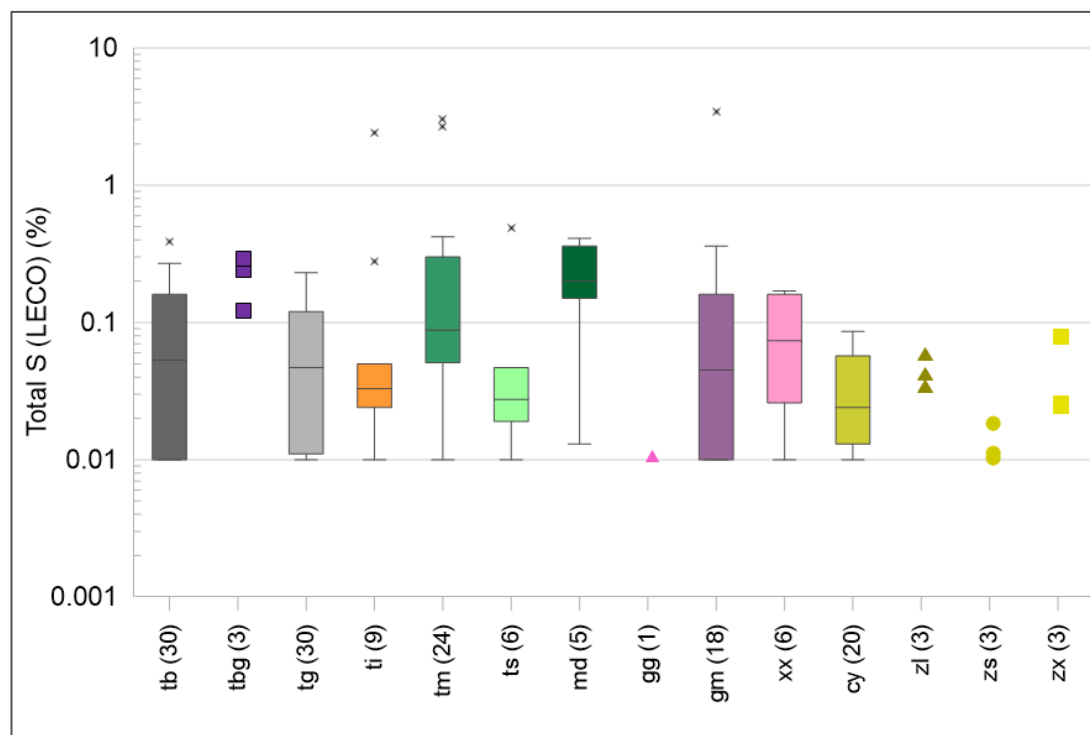
Sulfur content is used to indicate the potential for a sample to generate acid from the oxidation of sulfide minerals (see Equation 1). Figure 4.6 shows the range and distribution of sulfur content (measured by LECO analysis) for each lithology.

The TS content ranged from <0.01% to 3.4% (in a monzogranite (gm) sample), with an average of 0.14% TS. Most samples had low sulfur contents; 70% of samples (112 of 161) contained less than 0.1% TS, and 53% of samples (85) had contents below 0.05% TS.

The highest sulfur contents (above 1% TS) were present in four samples including intermediate granulite gneiss (ti; 2.4% TS), mafic granulite gneiss (tm; 2.7% to 3% TS), and monzogranite (gm; 3.4% TS). Fourteen samples (9% of samples) had sulfur contents above 0.3% TS, including samples from the gm, md, tb, ti, tm and ts lithologies.

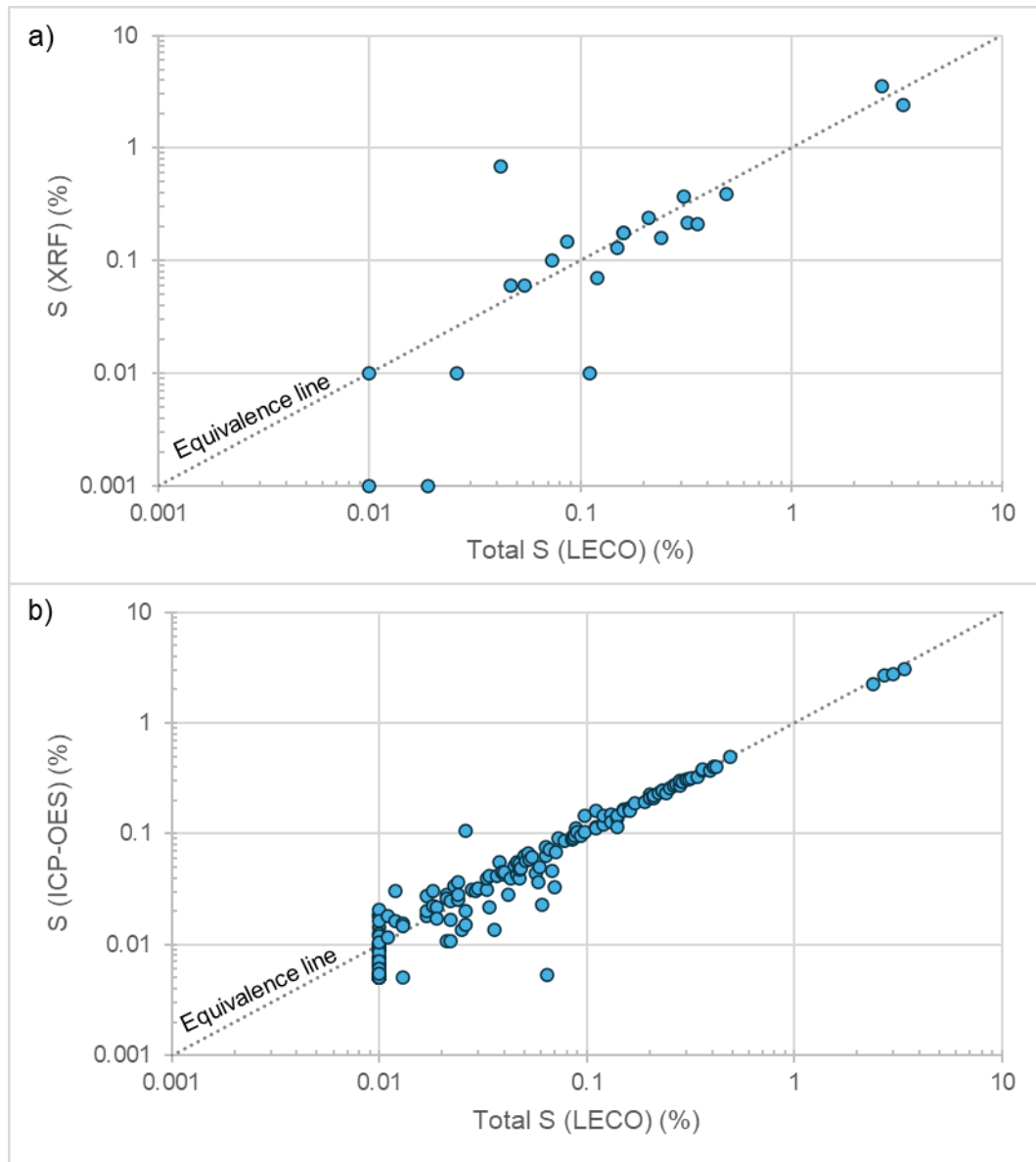
LECO sulfur results were compared to values measured by XRF (using available drill hole assay data) and inductively coupled plasma optical emissions spectroscopy (ICP-OES) following a four-acid digest (Section 4.1.9. Noting that some of the available assay (XRF) intervals only represented part of the geochemical sample intervals, both methods generated results that agreed well with the LECO sulfur results (Figure 4.7). The most notable deviations occur at low sulfur contents (close to or at the limits of detection) and are likely to be due to a greater degree of measurement uncertainty when close to detection limits.

Figure 4.6: Total sulfur by rock type (waste rock)



Notes: Refer to Figure 4.2 for box and whisker plot definitions

Figure 4.7: Comparison of total sulfur (by LECO) against a) sulfur (XRF) and b) sulfur (ICP-OES)



Notes: Plots include results for (a) 22 samples and (b) 161 samples. Some of the S (XRF) assay data only represent a sub-interval of the geochemical sample intervals (analysed by LECO).

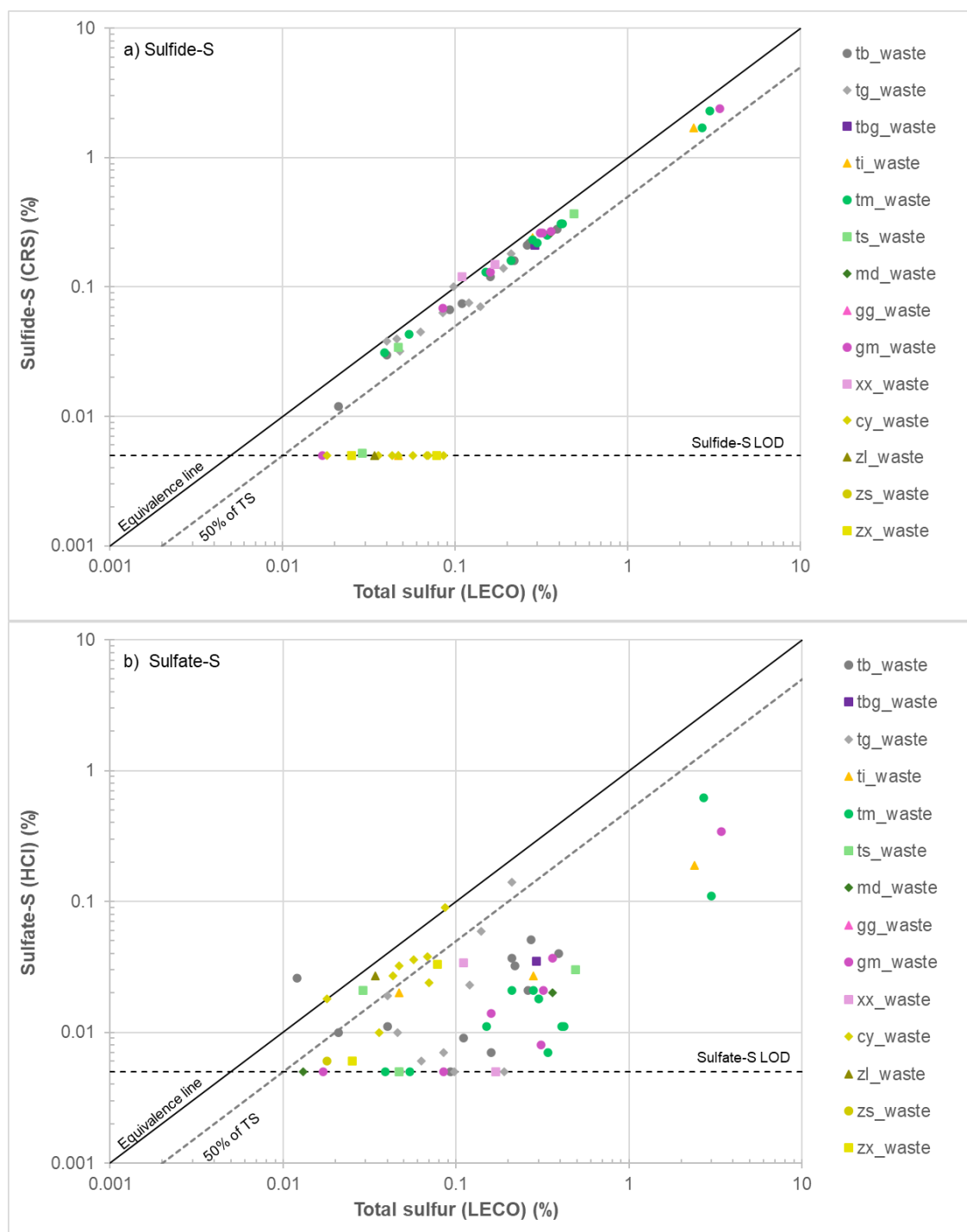
Sulfur speciation

Sulfur speciation testwork was conducted on a subset of waste rock samples (62) representing a range of total sulfur content above the detection limit for the LECO method. The testwork comprised:

- chromium reducible sulfur (CRS) (59 samples) to assess sulfide-S content
- sulfur by HCl extraction (62 samples) to assess acid soluble sulfate-S content.

The results are compared against total sulfur content in Figure 4.8. Complete results are provided in Appendix E.

Figure 4.8: Waste rock samples sulfur speciation plots (a) sulfide-S (CRS) (b) sulfate-S (HCl)



Note: the plots show lines of equivalence and 50% of TS.

The sulfide-S content of the waste rock samples ranged from <0.005% to 2.4% (a monzogranite-gm sample). The sulfate-S content of the waste rock samples assessed ranged from <0.005% to 0.62% (mafic granulite gneiss (tm) sample).

For most bedrock lithologies, sulfide-S dominated sulfur speciation; in Figure 4.8a, the data generally plot close to the equivalence line. Exceptions included three partially (gm, ti) or moderately (ts) weathered samples that had low TS content.

For the regolith lithology samples (11) analysed – clay (cy), lateritic duricrust (zl), exotic overburden roadbase (zx) – sulfate-S often represented a significant proportion of sulfur present (50% or more; Figure 4.8b). Recorded sulfide-S contents were below the analytical detection limit (<0.005% CRS).

Unaccounted sulfur content (based on the summed sulfide-S and sulfate-S contents relative to TS) was typically low (<0.1% S in samples with less than 0.5% TS, or on average 20% of TS). The unaccounted sulfur in the regolith and weathered bedrock samples may be in the form of hydroxysulfate minerals (such as alunite or jarosite) which can be resistant to digestion by HCl (i.e. the sulfate-S content would be underestimated). For samples from the fresh zones, the unaccounted sulfur is most likely to be present in sulfide minerals not fully recovered by the CRS method.

A summary of the sulfur speciation results and sulfur-bearing mineralogy results (from XRD analysis) is given in Table 4.3. The total sulfur contents calculated from the sulfide mineral contents recorded by XRD are in reasonable agreement with the TS (by LECO) measurements – subject to the XRD limit of detection (typically 0.5% by mineral abundance). Further assessment of the mineralogy of unaccounted sulfur (based on the CRS and S-HCl results) in the waste rock samples would require methods that have lower limits of detection (such as QEMSCAN³) to verify the sulfur speciation and identify the form of unaccounted sulfur.

³ QEMSCAN – quantitative evaluation of minerals by scanning electron microscopy

Table 4.3: Sulfur speciation results – waste rock

SRK ID	Pit	Weathering class	Lithology code	LECO	CRS	SHCI	XRD			Sulfur-bearing minerals identified by XRD	Pyrite	Pyrrhotite	Jarosite	Gypsum
				Total S	Sulfide-S	Sulfate-S	Total S	Sulfide-S	Sulfate-S		FeS ₂	Fe _(1-x) S _x (x=0-0.2)	KFe ₃ (SO ₄) ₂ (OH) ₆	CaSO ₄ .2H ₂ O
				%	%	%	%	%	%		Sulfide mineral (wt%)		Sulfate mineral (wt%)	
BSDD005_105_105.5	Jinkas	f	tb	0.11	0.074	0.009	0.27	0.27	nd	Pyrite	0.5			
BSDD033_50_52	Dingo	ww	tb	0.39	0.28	0.04	0.53	0.53	nd	Pyrite	1			
BSDD016_41_43.5	Jinkas	f	tbg	0.29	0.21	0.035	0.47	0.47	nd	Pyrite, pyrrhotite	0.5	0.5		
BSDD001_96_98	Jinkas	f	tg	0.01	-	-	0.27	0.27	nd	Pyrite	0.5			
BSDD027_106.52_108.7	Jinkas	f	tg	0.063	0.045	0.006	0.27	0.27	nd	Pyrite	0.5			
BSDD048_57_59	Jackson	f	ti	2.4	1.7	0.19	1.8	1.6	0.18	Pyrite, jarosite, gypsum	3		0.5	0.5
BSDD016_128_130	Jinkas	f	tm	3	2.3	0.11	3.3	3.3	nd	Pyrite, pyrrhotite	1	7		
BSDD044_66_68	Dingo	f	tm	0.42	0.31	0.011	0.27	0.27	nd	Pyrite	0.5			
BSDD027_102.8_104.8	Jinkas	f	tm	0.34	0.25	0.007	0.27	0.27	nd	Pyrite	0.5			
BSDD008_67_69	Dingo	f	tm	0.3	0.22	0.02	-	-	-	-	-	-	-	-
BSDD033_70_72	Dingo	f	tm	0.41	0.31	0.01	-	-	-	-	-	-	-	-
BSRC0233_69_71	Jackson	f	tm	2.7	1.7	0.62	-	-	-	-	-	-	-	-
BSDD032_150_152	Jinkas	f	ts	0.047	0.034	0.005	0.27	0.27	nd	Pyrite	0.5			
BSRC0187_66_68	Dingo	f	ts	0.49	0.37	0.03	-	-	-	-	-	-	-	-
BSDD022_4.4_4.8	Jinkas	mw	md	0.36	0.26	0.02	0.47	0.47	nd	Pyrite, pyrrhotite	0.5	0.5		
BSRC0995_97_99	Jinkas	f	md	0.41	-	-	-	-	-	-	-	-	-	-
BSRC0130_69_71	Jackson	f	gm	3.4	2.4	0.34	2.38	2.1	0.25	Pyrite, jarosite, gypsum	4		1	0.5
BSRC0131_56_58	Jackson	f	gm	0.31	0.26	0.01	-	-	-	-	-	-	-	-
BSRC0124_77_78_79_80	Jackson	f	gm	0.32	0.26	0.02	-	-	-	-	-	-	-	-
BSRC0234_56_58	Jackson	f	gm	0.36	0.27	0.04	-	-	-	-	-	-	-	-
BSDD002_54_55.6	Jinkas	f	xx	0.11	0.12	0.034	0.27	0.27	nd	Pyrite	0.5			
BSDD008_47.88_49.17	Dingo	f	xx	0.01	-	-	0.27	0.27	nd	Pyrite	0.5			

Notes: nd – not detected; results reported below the analytical LOD are shown in grey italicised font. Weathering classes include fresh (f), weakly weathered (ww) and moderately weathered (mw).

Maximum acid potential

The maximum potential acidity (MPA) is calculated based on the total sulfur content and assumes that all the sulfur present will oxidise to form sulfuric acid (as outlined in Section 4.1.3, Equation 1 and Equation 2).

The MPA calculation is as follows:

Equation 6: $\text{MPA (kg H}_2\text{SO}_4\text{/t)} = \text{total S (\%)} \times 30.625$

The sulfur speciation results have shown that sulfide-S accounts for the greater proportion of total sulfur in most of the waste rock samples. It is considered reasonable (and conservative) to assess the acid generation potential using Equation 6. It is acknowledged that this is likely to overestimate the acid generating potential due to the presence of pyrrhotite in some samples (which may produce less acid than pyrite due to formation of transitional oxidation phases e.g. elemental sulfur), and possible presence of non-acid-generating sulfate minerals such as gypsum (not recorded in mineralogical studies to date but may be present at low levels, below detection).

Using this approach, the MPA values of the waste rock samples range from <0.3 kg H₂SO₄/t to 104 kg H₂SO₄/t (median 1.4 kg H₂SO₄/t; average 4.9 kg H₂SO₄/t).

4.1.5 Acid neutralising capacity

Measurement of acid neutralising capacity

The ANC measurement is carried out under aggressive acidic conditions (addition of excess strong acid to achieve a low pH) (AMIRA, 2002). The solution is then titrated with a strong base to a pH of 8.3 to measure the total acid consumed by the sample. The measurement provides a measure of the total neutralising capacity i.e. all minerals that may react with a strong acid at a low pH within the timeframe of the test (contribution from carbonates and silicates is possible).

The ABCC method involves the slow addition of a strong acid to the material over a period of time. Chemical conditions are not as aggressive as is the case in an ANC test. The acid addition and pH are measured continuously during the test, yielding a plot of acid consumed as a function of pH. Typically, buffering within certain pH ranges can be attributed to neutralisation by specific minerals. For example, buffering at around pH 7 and above is indicative of neutralisation by carbonate minerals such as calcite, while dolomite buffers the pH between pH 6 and pH 7. Buffering by aluminium and iron hydroxide minerals may occur below pH 4.5.

ABCCs are interpreted to estimate the proportion of readily reactive ANC in the sample.

The ANC values of the waste rock samples ranged from below detection (<0.5 kg H₂SO₄/t) to 650 kg H₂SO₄/t.

Most samples (148 of 161; 92% of samples) recorded low ANC (<30 kg H₂SO₄/t), and all the waste lithologies have average ANC values below 30 kg H₂SO₄/t, except for the calc-silicates (average 200 kg H₂SO₄/t).

High ANC values (>100 kg H₂SO₄/t) were recorded in a small subset of five samples including:

- one mafic granulite gneiss (tm) sample (170 kg H₂SO₄/t)

- three (of six) calc-silicate (xx) samples (230–650 kg H₂SO₄/t)
- one garnet dominant quartz granulite (tg) sample (400 kg H₂SO₄/t) (of thirty tg samples).

These samples were not localised and were collected from the Jinkas (tg and two xx samples), Dingo (xx) and Olympia (tm) deposits.

Readily available/reactive acid neutralising capacity

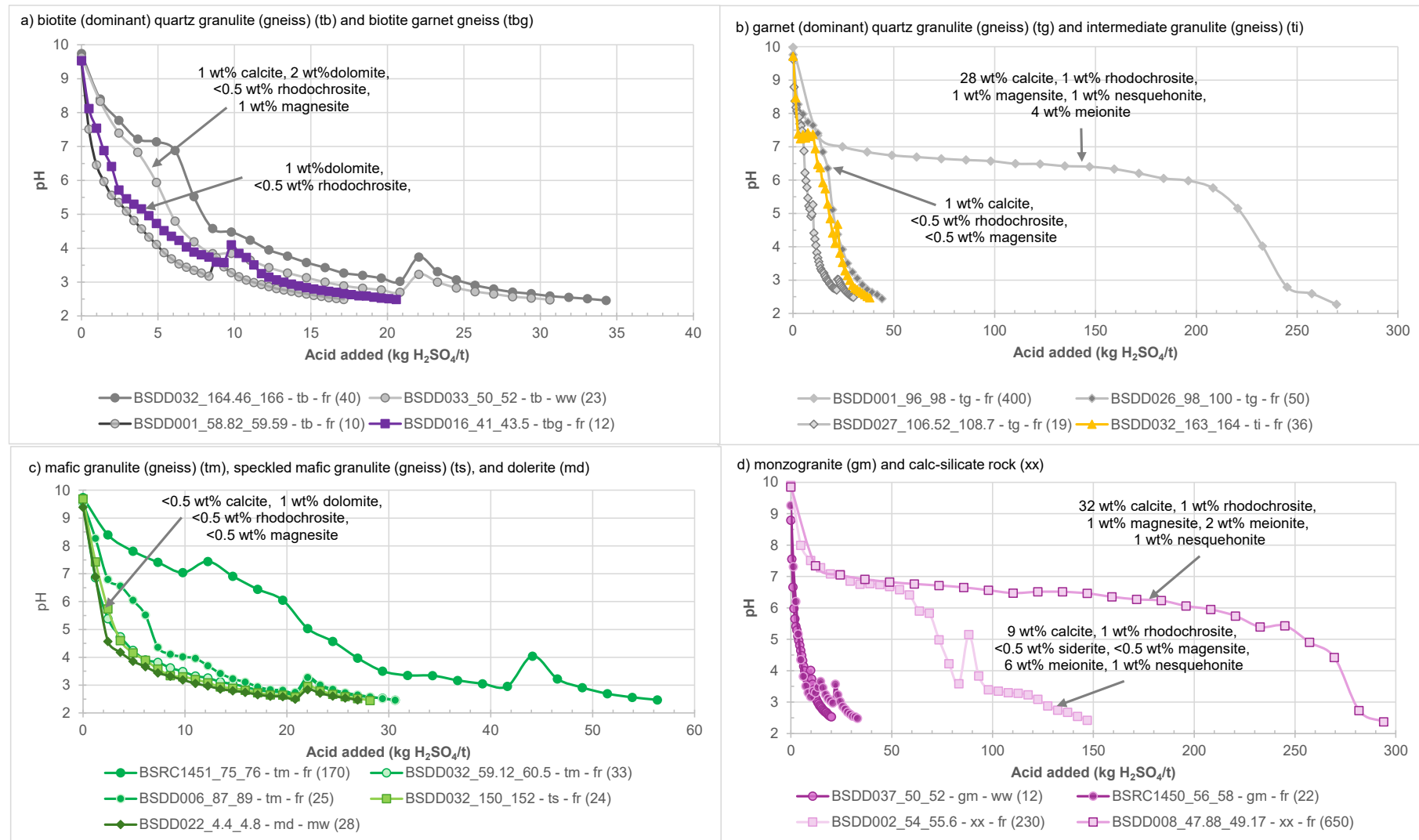
ABCCs were generated for a subset of waste rock samples with varying ANC values.

The ABCC plots for the waste rock samples shown in Figure 4.9 demonstrate limited buffering capacity above pH 4.5, consistent with the generally low ANC values (<30 kg H₂SO₄/t). Notable exceptions whereby buffering was evident included:

- The ABCC for two calc-silicate (xx) samples with high ANC values (230 kg H₂SO₄/t and 650 kg H₂SO₄/t) and calcite content (9 wt% and 32 wt%, respectively) confirmed by XRD. The ABCC plots generated for these samples show buffering around pH 7 which is consistent with neutralisation by calcite.
- The ABCC for a garnet-dominant quartz granulite gneiss (tg) (ANC: 400 kg H₂SO₄/t) shows a pronounced plateau at close to pH 7, which is indicative of buffering by calcite. This is corroborated by XRD with 28 wt% calcite recorded.
- The ABCC for a mafic granulite gneiss (tm) sample with an ANC of 170 kg H₂SO₄/t shows some buffering between pH 9 and pH 7. No carbonates (or sulfur minerals) were identified in this sample. The XRD analysis recorded 8 wt% amphibole, 14 wt% serpentine, 11 wt% chlorite and 30 wt% amorphous content. There may be some contribution to acid neutralisation from reactive silicate content.

Other carbonate minerals identified in the samples by XRD (including magnesite, rhodochrosite, siderite) do not appear to have contributed to acid neutralisation. There was no evidence either that the silicate meionite – which contains a carbonate functional group – contributed to neutralisation.

Figure 4.9: Acid buffering characteristic curve plots (waste rock)



Notes: Legend format indicates drill hole ID, depth range, grade, lithology code, weathering code and total measured ANC is given in brackets. Where available, XRD mineralogy results have been annotated on the plots. Small 'steps' evident on some curves are due to the ABCC test being suspended overnight in the laboratory.

Evaluation of analytical surrogates for acid neutralising capacity

Typical analytical surrogates for readily available ANC include calcium, or calcium + magnesium, or TIC to represent reactive carbonates. The approach assumes that calcium and/or magnesium is contained predominantly in carbonate minerals. Similarly, TIC is assumed to be present mainly as calcite or dolomite. The purpose for using surrogates is to enable the use of the broader drill hole database to estimate AMD properties for materials without the need to complete ANC determination on a large number of drill core intervals to ensure an adequate dataset for planning and waste management.

Figure 4.10 shows the ANC inferred from these surrogates as ANC(Ca), ANC(Mg) and ANC(Ca+Mg) calculated from XRF assay and multi-element (4-acid digest) data for Ca and Mg, plotted against total ANC values determined in the current program.

The inferred ANC using ANC(Ca), ANC(Mg) and ANC(Ca+Mg) exceeds the total ANC. This is most likely due to the presence of other non-carbonate calcium-bearing minerals (such as wollastonite and sodium calcium plagioclase) and magnesium-bearing minerals (such as mica, pyroxene and other silicates), which are not readily available contributors to ANC.

Carbon speciation and carbonate neutralising potential

To further investigate the carbonate component of ANC, a subset of 54 waste rock samples were submitted for carbon speciation testing (including samples with ANC values ranging from 1.1 kg H₂SO₄/t to 650 kg H₂SO₄/t).

TC content ranged from 0.011% to 3.8% but in general was low, being less than 0.5% for 48 of the 54 samples tested.

TIC contents ranged from <0.01% to 3.7% (average of 0.25%). For most lithologies, TIC was the dominant form of carbon in most samples tested (33 of 54) (Figure 4.11a). The highest TIC contents (0.9% to 3.7%) corresponded to samples with high ANC values (230 kg H₂SO₄/t to 650 kg H₂SO₄/t).

TOC content ranged from <0.01% to 0.68% (Figure 4.11b). Most samples had TOC below 0.1% (50 of 54 samples). In the case of the tbg, cy, zl, zs and zx lithologies, TOC was the dominant carbon form (Figure 4.9b). The highest TOC values were recorded for a suspected roadbase sample (zx; 0.68%) and a soil sample (zs; 0.48%).

Figure 4.10: Comparison of ANC and ANC inferred from Ca, Mg and Ca+Mg

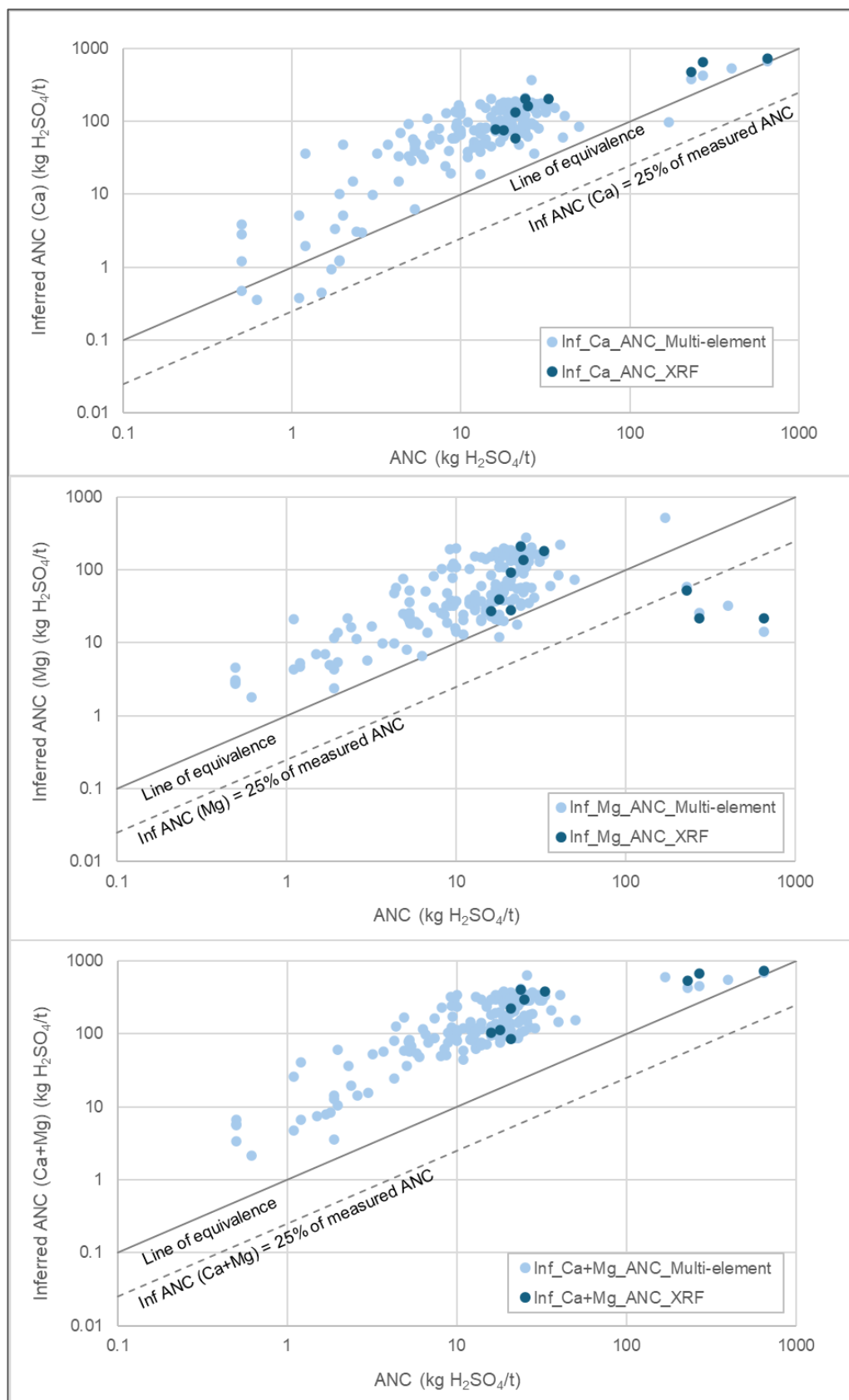
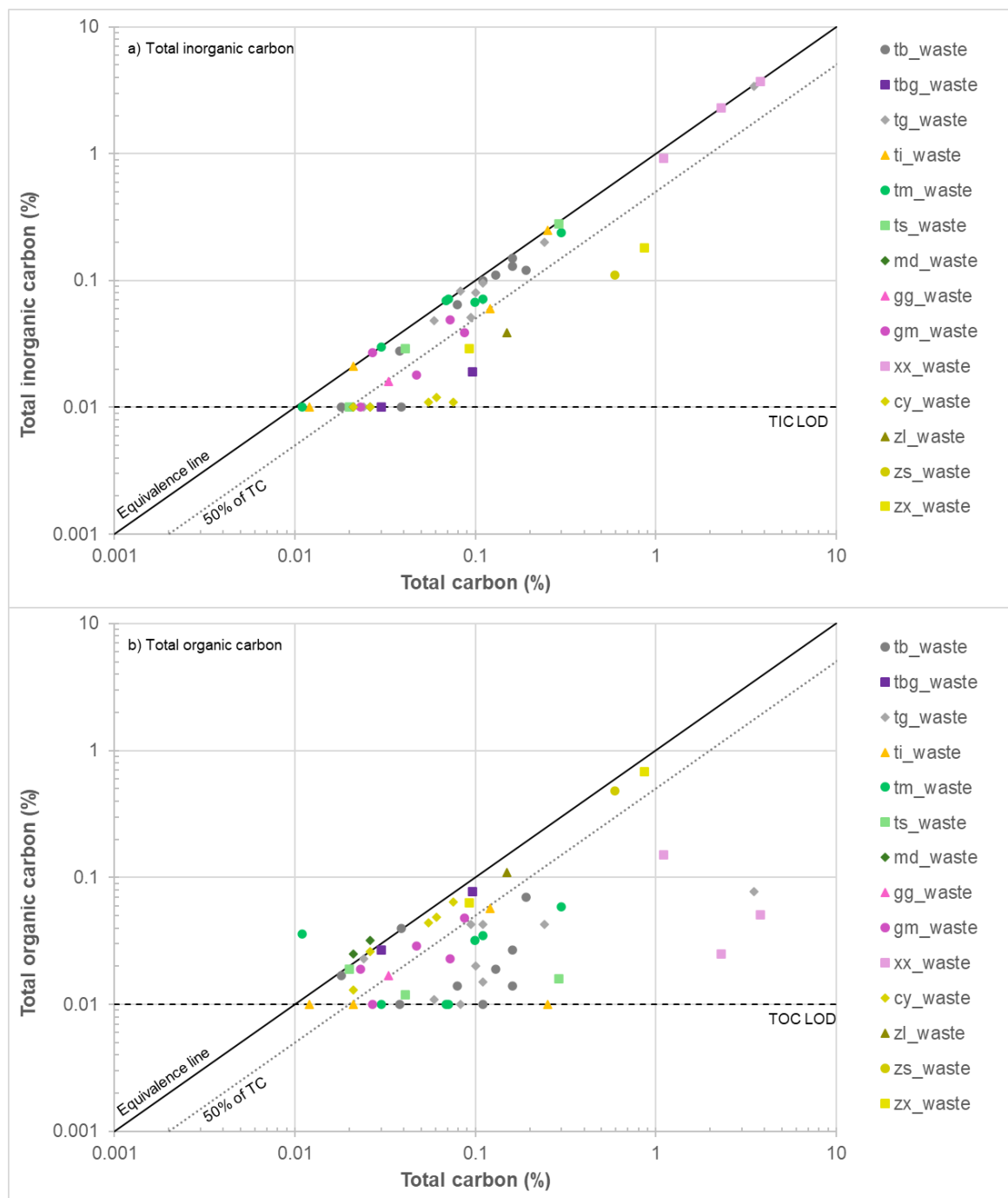


Figure 4.11: Waste rock samples speciated carbon results (a) TIC (b) TOC



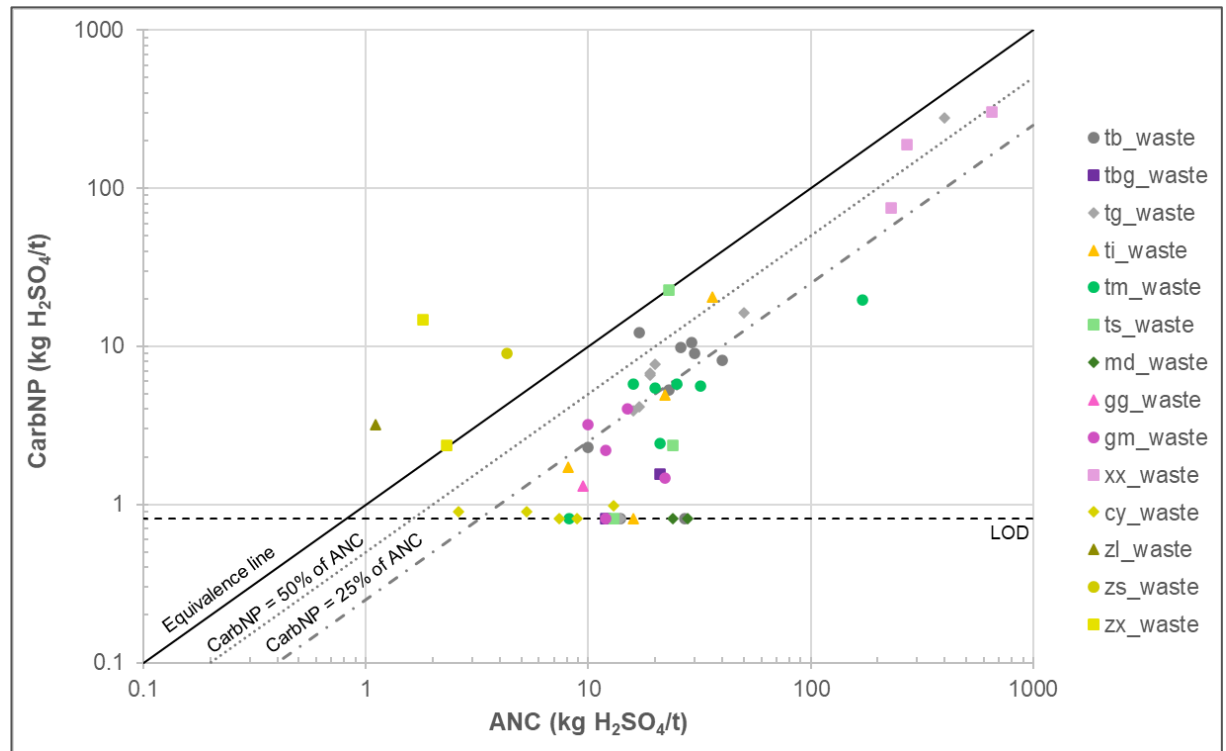
Carbonate neutralisation potential (CarbNP) values were calculated from TIC and expressed in kilograms of sulfuric acid per tonne for comparison with ANC results. The calculated CarbNP values ranged from <0.82 kg H₂SO₄/t to 302 kg H₂SO₄/t (Figure 4.12).

As shown in Figure 4.12 there is generally poor agreement between the CarbNP (TIC) and the total (measured) ANC. Most samples have CarbNP values below 50% of the total ANC.

Several samples (12) with no CarbNP (TIC <0.01%) have measured ANC values (ranging from 7.4 kg H₂SO₄/t to 28 kg H₂SO₄/t). Values below the equivalence line often indicate ANC contributions from reactive silicates.

CarbNP exceeded total (measured) ANC for three samples from overburden lithologies (zs, zl, and zx), possibly indicating the presence of iron-bearing carbonates (such as siderite) that may be ineffective in neutralisation under oxic conditions.

Figure 4.12: Comparison of CarbNP (TIC) with total ANC



Effective acid neutralising capacity

Table 4.4 summarises the measured ANC values, ABCC-derived available ANC (or 'effective ANC'), and calculated CarbNP from TIC and mineralogy. Complete results are provided in Appendix H.

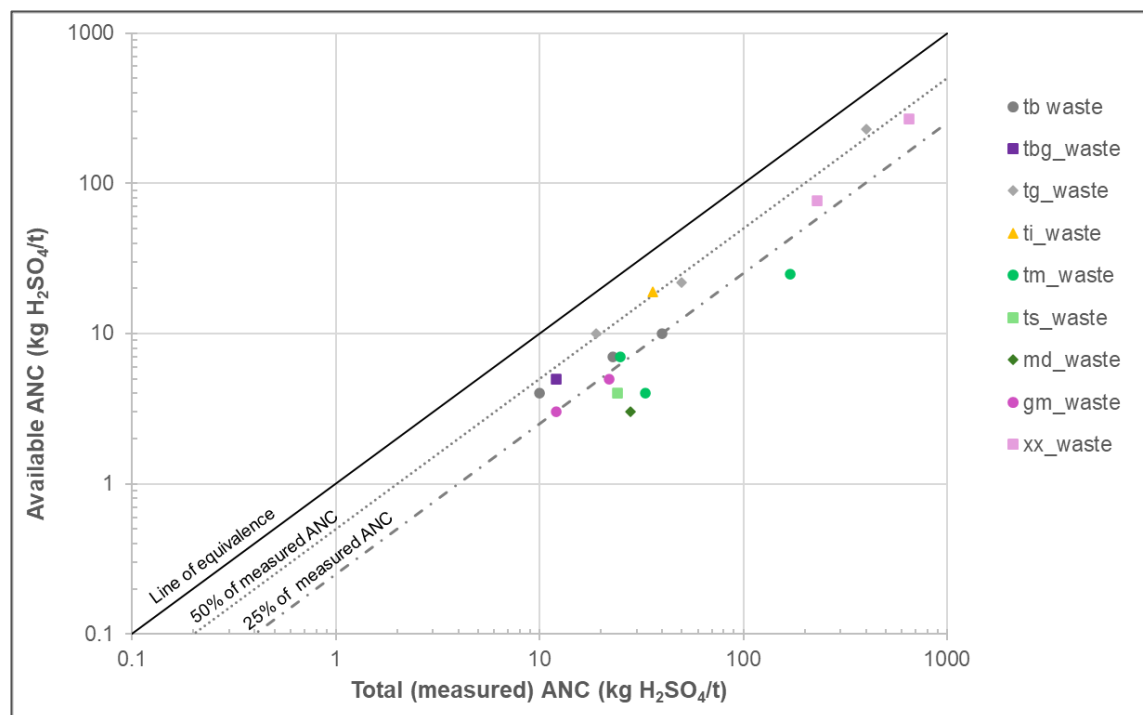
The ABCC tests indicated that for most waste rock samples, the readily available ANC (inferred from ABCC to pH 4.5) is lower than indicated by the total ANC measurement (Figure 4.13). Most samples (13 of 16) recorded an ANC availability based on an ABCC to pH 4.5 of less than 50% of the total ANC (Figure 4.13; Table 4.4).

Table 4.4: Summary of carbonate neutralisation potential results (waste rock)

SRK ID	Pit	Weathering class	Lithology code	Measured	TIC	TIC	ABCC		XRD	Carbonate minerals (wt%)	
				ANC		CarbNP	ANC to pH 4.5	ANC to pH 4.5	CarbNP	CaCO ₃	Ca(Fe,Mg)(CO ₃) ₂
				kg H ₂ SO ₄ /t	%	kg H ₂ SO ₄ /t	kg H ₂ SO ₄ /t	% of ANC (effective ANC)	kg H ₂ SO ₄ /t	Calcite	Dolomite
BSDD033_50_52	Dingo	Weakly weathered	tb	23	0.065	5.3	7	30%	31	1	2
BSDD001_58.82_59.59	Jinkas	Fresh	tb	10	0.028	2.3	4	40%	-	-	-
BSDD032_164.46_166	Jinkas	Fresh	tb	40	0.1	8.2	10	25%	-	-	-
BSDD016_41_43.5	Jinkas	Fresh	tb _g	12	0.01	0.8	5	42%	11	-	1
BSDD001_96_98	Jinkas	Fresh	tg	400	3.4	278	228	57%	274	28	-
BSDD027_106.52_108.7	Jinkas	Fresh	tg	19	0.08	6.5	10	53%	9.8	1	-
BSDD026_98_100	Jinkas	Fresh	tg	50	0.2	16	22	44%	-	-	-
BSDD032_163_164	Jinkas	Fresh	ti	36	0.25	20	19	53%	-	-	-
BSDD006_87_89	Jinkas	Fresh	tm	25	0.071	5.8	7	28%	-	-	-
BSRC1451_75_76	Olympia	Fresh	tm	170	0.24	20	25	15%	-	-	-
BSDD032_150_152	Jinkas	Fresh	ts	24	0.029	2.4	4	17%	16	<0.5	1
BSDD022_4.4_4.8	Jinkas	Moderately weathered	md	28	0.01	0.8	3	11%	42	1	3
BSDD037_50_52	Jinkas	Weakly weathered	gm	12	0.027	2.2	5	42%	-	-	-
BSRC1450_56_58	Olympia	Fresh	gm	22	0.018	1.5	5	23%	-	-	-
BSDD002_54_55.6	Jinkas	Fresh	xx	230	0.92	75	77	33%	88	9	-
BSDD008_47.88_49.17	Dingo	Fresh	xx	650	3.7	302	267	41%	313	32	-

Note: CarbNP values calculated from XRD results have been calculated based on reported calcite and dolomite contents only.

Figure 4.13: Available ANC determined from ABCC

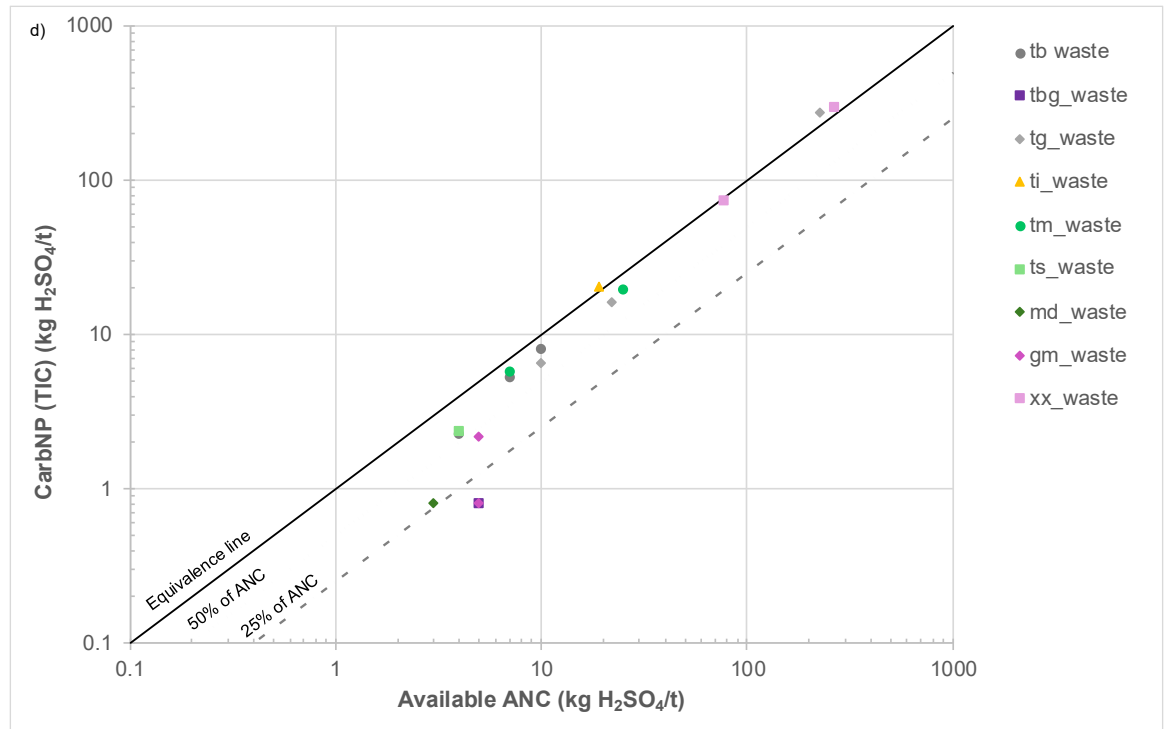


The differences between the total and available ANC measurements are likely explained by reactive silicate mineral content contributing to the total ANC (at low pH due to the more aggressive conditions of ANC test). However, it is noted there may also be some contribution to available ANC from serpentine or amorphous silicates in some samples.

CarbNP appears to be a reliable indicator of available ANC; Figure 4.14 shows a comparison of the CarbNP (TIC) with the available ANC calculated from the ABCC (buffering to pH 4.5). Where the sample contains appreciable available ANC (greater than 10 kg H₂SO₄/t), datapoints plot close to the equivalence line. This outcome is consistent with available mineralogical data, that suggest carbonate mineral assemblages are dominated by calcite, which provides effective pH buffering.

For comparison purposes, a conservative effective ANC calculated as 25% of the total measured ANC has been discussed in the following sections.

Figure 4.14: Comparison of CarbNP (TIC) with available ANC (ABCC to pH 4.5)



4.1.6 Net acid producing potential

The net acid producing potential (NAPP) of the samples is a balance of MPA and ANC (i.e. NAPP = MPA minus ANC). A negative NAPP indicates an overall excess of neutralising capacity, while a positive NAPP indicates an excess of acidity. NAPP results are summarised in Table 4.2 and full results are provided in Appendix E.

Calculated NAPP values for waste rock samples ranged from -650 kg H₂SO₄/t to 99 kg H₂SO₄/t (average -23 kg H₂SO₄/t). Negative NAPP values were calculated for most samples (149 of 161), indicating an excess of neutralising capacity (based on the total ANC results). NAPP values above 10 kg H₂SO₄/t were recorded for four samples including a monzogranite (gm) (99.2 kg H₂SO₄/t) sample, an intermediate granulite gneiss (ti) (58.5 kg H₂SO₄/t) sample, and two mafic granulite gneiss (tm) (72.9 kg H₂SO₄/t and 73.5 kg H₂SO₄/t) samples.

When taking account of an effective ANC estimated at 25% of the measured ANC (following Section 4.3.3), adjusted NAPP ranges between -162 kg H₂SO₄/t and 103 kg H₂SO₄/t (average -2.7 kg H₂SO₄/t). Most samples (101 of 161) maintained a negative effective NAPP.

4.1.7 Net acid generation tests

During the NAG test, the samples are contacted with the strong oxidant, hydrogen peroxide, to oxidise the sulfide minerals contained in the sample. Concurrently, neutralising minerals present in the sample consume the acidity generated until either the ANC or sulfide is depleted. Should the ANC be depleted first, excess acidity is generated, and the sample pH decreases. Following a predetermined contact time, the solution pH (NAG pH) is recorded, and the acidity of the sample is quantified by titration with a base (sodium hydroxide). The acidity generated at pH 4.5 and below is

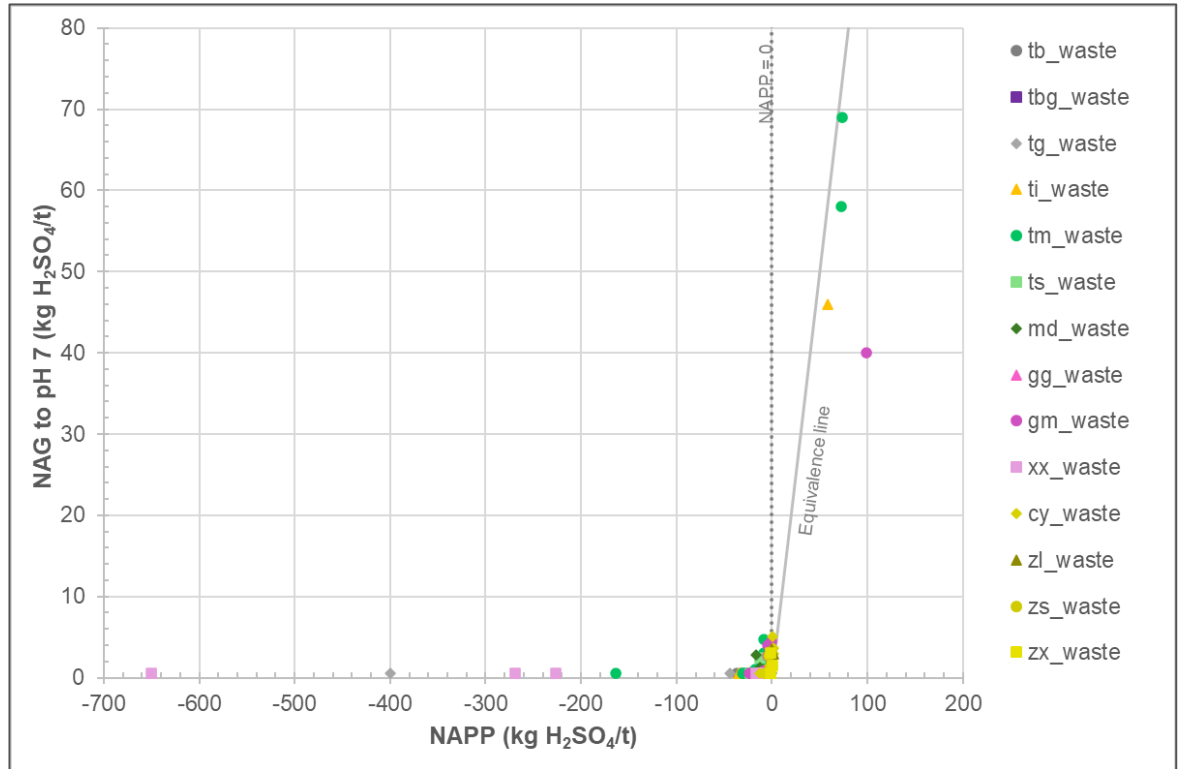
generally attributed to free sulfuric acid and ferric iron resulting from the oxidation of sulfide minerals after the consumption of any neutralising mineral phases. The acidity generated between pH 4.5 and pH 7 includes a contribution from metals, such as copper, that are soluble at pH 4.5 but insoluble at pH 7.

Single-addition NAG tests were conducted on all samples to assess the net amount of acid generated by the samples. In general, the results supported the findings of the ABA and sulfur speciation testwork, with good agreement between the NAG and the NAPP results for most of the samples (Figure 4.15).

In summary:

- Of the 149 (of 161) waste rock samples with negative NAPP values, most samples (132) generated NAG solutions with NAG pH values above pH 5 and little (up to 3.5 kg H₂SO₄/t) to no acidity. This indicates that for most samples, the acid generation potential is low.
- Seventeen waste rock samples with negative NAPP values recorded NAG pH values between pH 3.4 and pH 5 and generated up to 4.5 kg H₂SO₄/t acidity. It is possible that the calculated negative NAPP values are due to an overestimation of ANC. NAPP values adjusted based on effective ANC at 25% of the total ANC are positive and low, indicating the samples could have a low capacity to generate acidity.
- Positive NAPP values were recorded for 12 waste rock samples with generated NAG pH values between pH 2.3 and pH 6.2 and NAG acidities (to pH 7) up to 69 kg H₂SO₄/t.
- For samples with sulfur contents above 2%, NAG acidities are significantly less than calculated NAPP values, suggesting that incomplete oxidation of the sulfide minerals has occurred in the NAG test. For example, a monzogranite (gm) sample recorded a NAPP value (99 kg H₂SO₄/t) greater than the NAG acidity (to pH 7) generated (40 kg H₂SO₄/t). Total sulfur for this sample was 3.4% (MPA = 104 kg H₂SO₄/t).

Figure 4.15: Plot of NAG acidities by NAPP values for waste rock samples



4.1.8 Sample classification

The waste AMD classification criteria most commonly adopted are those proposed by AMIRA (AMIRA, 2002) and MEND (Price, 2009). The AMIRA approach, using a combination of ABA and NAG data to classify the material AMD type, is widely adopted in Australia, and is included in the key regulatory guidance documents (DMP, 2016; DITR, 2016). The MEND approach, based solely on neutralisation potential ratio (NPR) values (the ratio of ANC/MPA), is commonly used in Canada and the USA. Both approaches classify materials into PAF, NAF and UC categories. A further subdivision of UC samples into UC(NAF) or UC(PAF) is often identified within the AMIRA criteria (Table 4.5). A further AMIRA classification is potentially acid forming with a low acid generation capacity (PAF-LC). In addition, sulfur cut-offs are frequently used for rapid screening of low-risk material (INAP, 2012; DMP, 2016; DITR, 2016). Appropriate cut-off values need to be determined based on site-specific assessments, but are typically in the 0.1 wt% to 0.3 wt% range.

Table 4.5: AMIRA and MEND classification schemes

Category		AMIRA (2002)		MEND (Price, 2009)
		NAPP	NAG pH	NPR
NAF-Barren		< 0	≥ 4.5 (with ANC values < 5 kg H ₂ SO ₄ /t)	-
NAF		< 0	≥ 4.5	≥ 3
PAF		> 0	< 4.5	< 1
PAF-LC		> 0	< 4.5 (with NAG acidity to pH 7 of < 5 kg H ₂ SO ₄ /t)	-
UC	UC(NAF) ¹	< 0	≥ 4.5	Between 1 and 3
	UC(PAF) ¹	> 0	< 4.5	

Notes:

¹ Additional UC categories for the AMIRA scheme only.

The results of the AMIRA and MEND classification approaches are illustrated in Figure 4.16 and the geochemical classifications by sample location are shown in Figure 4.17. A summary of the geochemical classifications is given in Table 4.6.

Most waste rock samples (137 out of 161) are classified as NAF based on the AMIRA classification criteria, including 19 samples classed as NAF-Barren. There is generally good agreement between the AMIRA and MEND classifications, with 117 of the AMIRA NAF classed samples (including 8 NAF-Barren samples) also classed as NAF under the MEND approach using NPR. However, there are 20 samples classified as NAF (including 11 NAF-Barren) under AMIRA that class as UC based on MEND.

Eight waste rock samples are classed as uncertain UC(NAF), with NAG pH values above pH 4.5 and low positive NAPP values. However, these samples are all shallow oxide zone samples (cy, zl, zx), and the sulfur present may be in a form that does not generate acidity (e.g. gypsum). None of these samples underwent mineralogical assessment and therefore this cannot be confirmed.

Four waste rock samples are classified as PAF using both the AMIRA and MEND classification schemes, with high sulfur contents (2.4% to 3.6% S). These are all fresh samples, from the Jackson and Jinkas deposits (Figure 4.17), including two mafic granulite gneiss (tm) samples, a monzogranite (gm) sample and an intermediate granulite gneiss (ti) sample.

Twelve samples are classified as UC(PAF) (or UC based on NPR). These samples have negative NAPP values but generated acidic NAG pH values with low NAG acidities (to pH 7) below 5 kg H₂SO₄/t. Taking account of effective ANC (25% total ANC), these samples would be reclassified as PAF-LC. These were moderately weathered to fresh samples with sulfur contents that range from 0.26% S to 0.49% S, dominated by sulfide-S.

Figure 4.16: Waste rock classification according to a) AMIRA and b) MEND by lithology

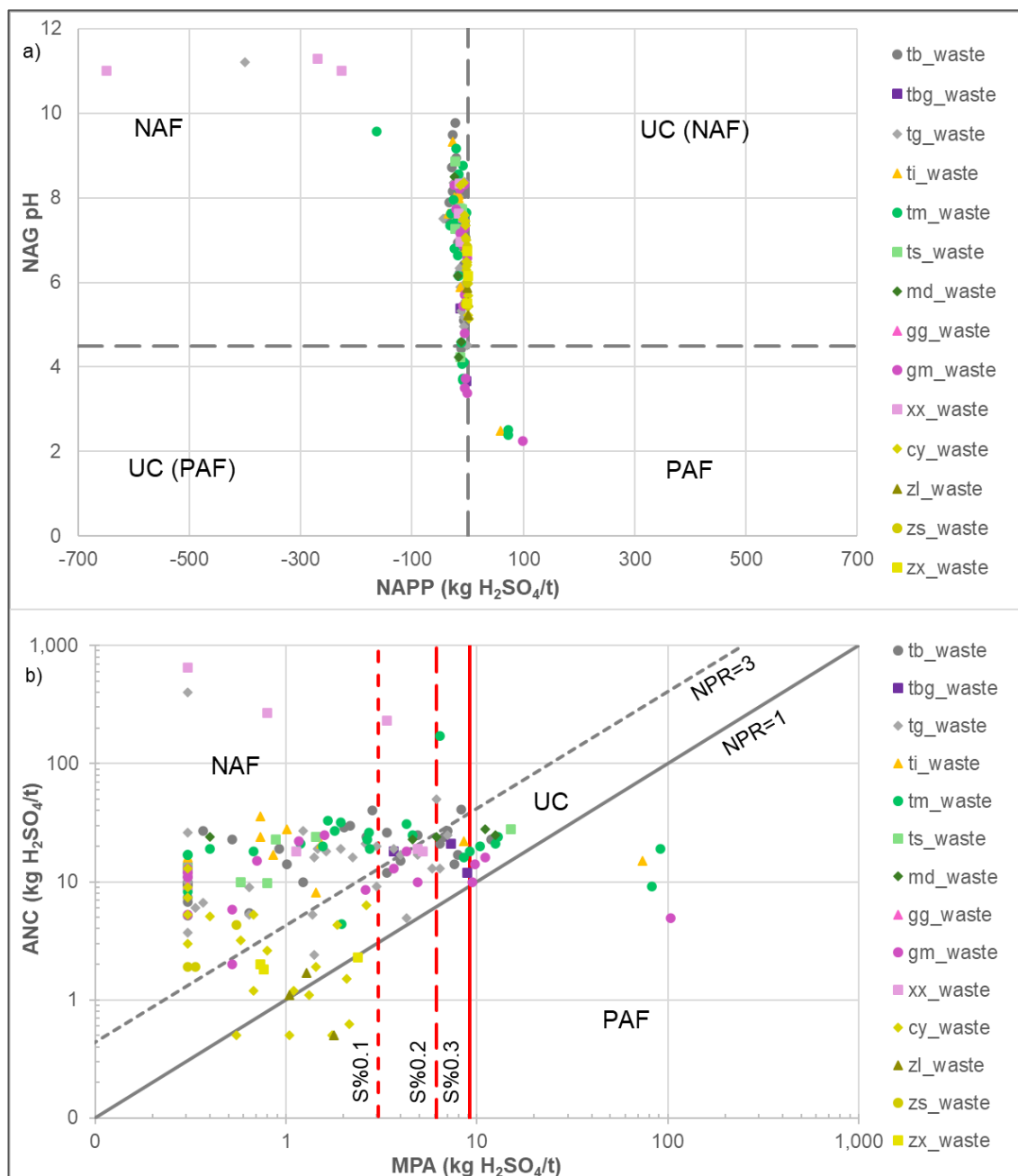


Table 4.6: Geochemical classification summary – waste rock samples

Rock type	Description	No. of samples	AMIRA						MEND		
			NAF-Barren	NAF	UC(NAF)	UC(PAF)	PAF-LC	PAF	NAF	UC	PAF
tb	biotite (dominant) quartz granulite (gneiss)	30	-	28	-	2	-	-	27	3	-
tbg	biotite garnet gneiss	3	-	2	-	1	-	-	1	2	-
tg	garnet (dominant) quartz granulite (gneiss)	30	3	27	-	0	-	-	26	4	-
ti	intermediate granulite (gneiss)	9	-	8	-	0	-	1	7	1	1
tm	mafic granulite (gneiss)	24	1	17	-	4	-	2	16	6	2
ts	speckled mafic granulite (gneiss)	6	-	5	-	1	-	-	5	1	-
md	dolerite	5	-	4	-	1	-	-	3	2	-
gg	granite	1	-	1	-	0	-	-	1	-	-
gm	monzogranite	18	1	13	-	3	-	1	13	4	1
xx	calc-silicate rock	6	-	6	-	0	-	-	6	-	-
cy	clay	20	7	7	6	0	-	-	9	5	6
zl	lateritic duricrust	3	2	-	1	0	-	-	-	2	1
zs	soil	3	3	-	-	0	-	-	3	-	-
zx	exotic overburden (roadbase)	3	2	-	1	0	-	-	0	2	1
Total		161	19	118	8	12	0	4	117	32	12

Figure 4.17: Location plan of the AMIRA classifications for waste rock materials

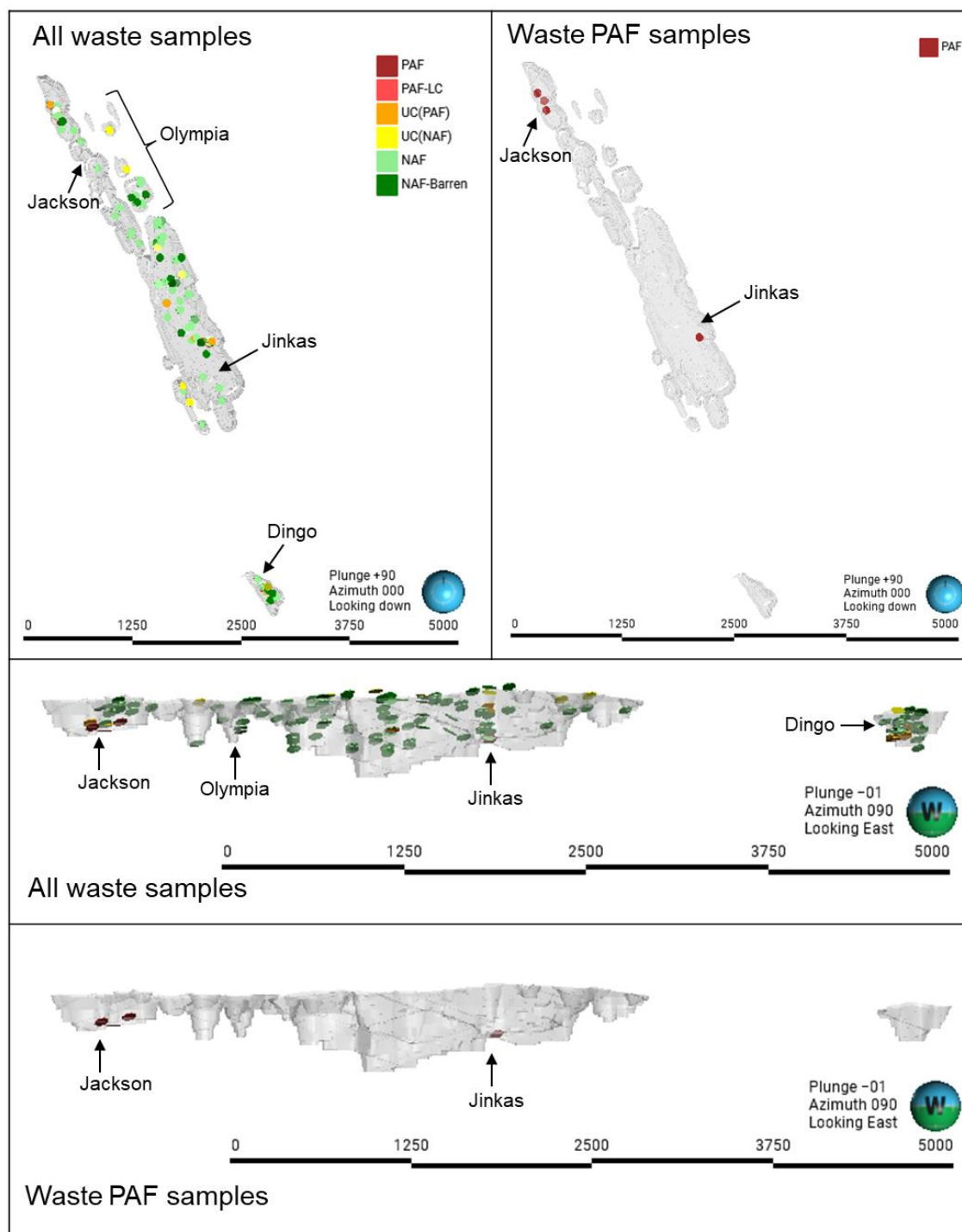
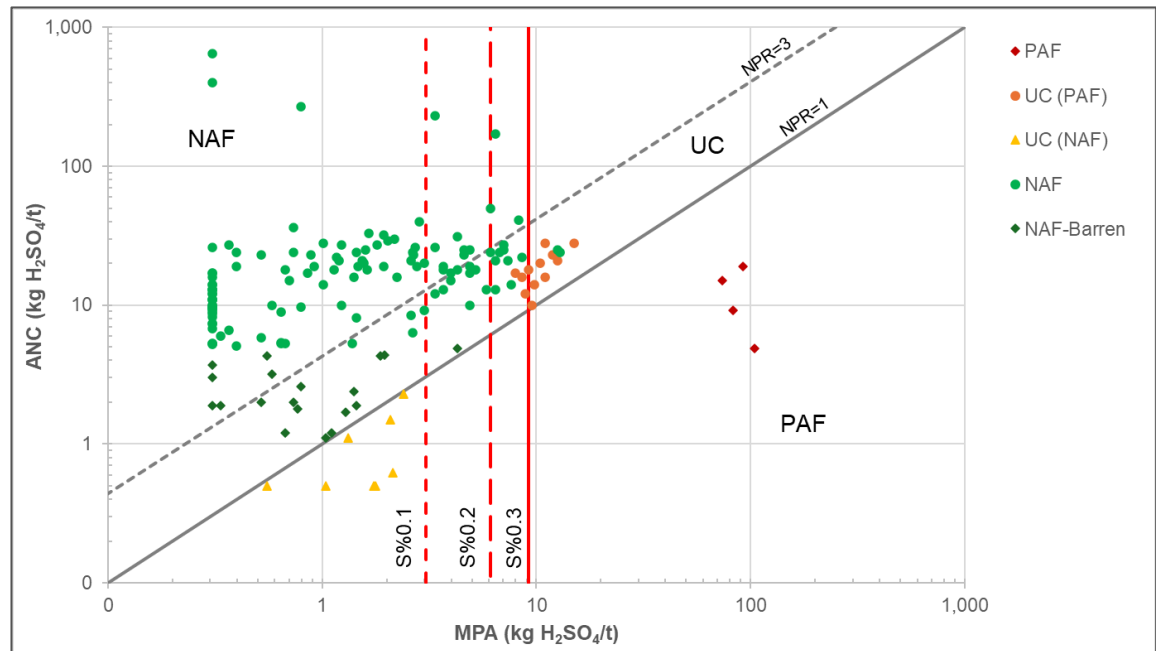


Figure 4.18: MEND classification plot showing AMIRA classifications

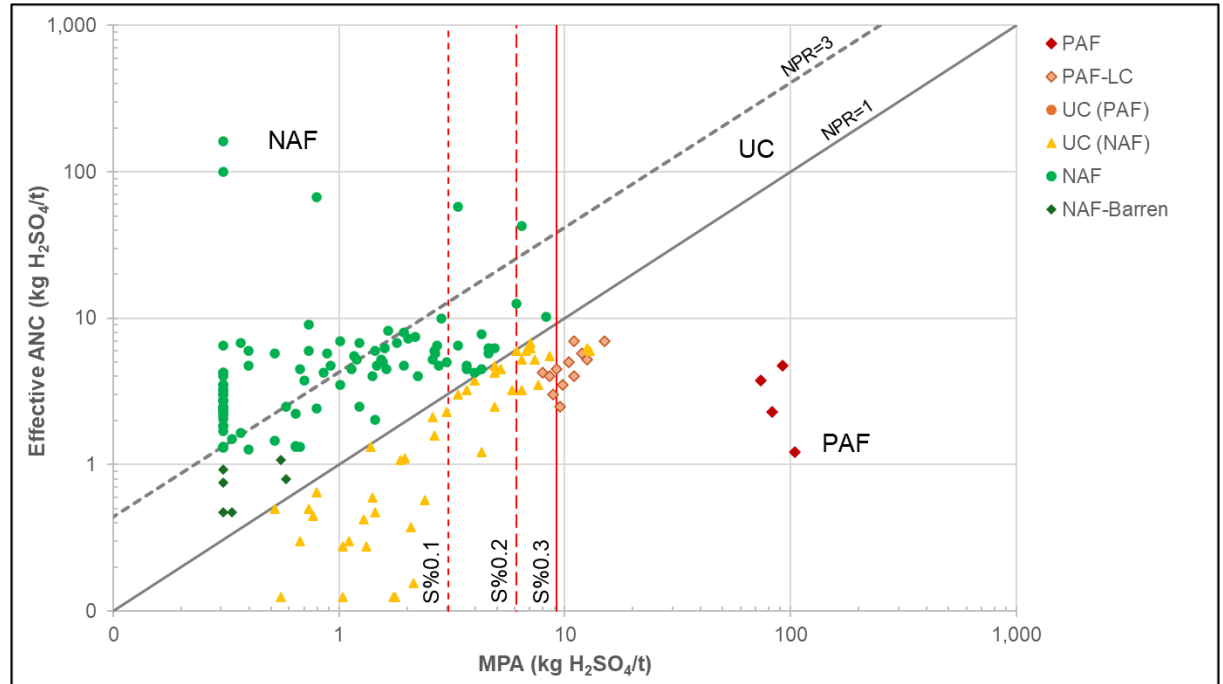


Note: The ANC values are the total (measured) ANC.

Figure 4.18 shows a MEND geochemical classification plot with the datapoints differentiated on the basis of AMIRA classification. The plot also includes lines representing sulfur cut-off thresholds of 0.1% TS, 0.2% TS and 0.3% TS. The UC(PAF) and PAF samples all plot with MPA values above the 0.2% TS line. This suggests that a preliminary sulfur cut-off threshold of 0.2% TS could be adopted to identify materials that may present an acid generation risk. The UC(NAF) classed datapoints that plot within the PAF region of the MEND plot are all regolith samples that have low sulfur contents (<0.1% TS) and are not considered to represent an acid generation risk.

If the classifications are plotted based on the effective ANC (25% of total ANC), as shown in Figure 4.19, some NAF and NAF-Barren samples reclassify as UC(NAF) in the PAF region of the plot and the UC(PAF) samples reclassify as PAF-LC. This suggests that a more conservative sulfur cut-off threshold may be advisable. The NAG pH values associated with the UC(NAF) samples with >0.1% S range from NAG pH 4.5 to 8.3 and have (adjusted) NAPP values up to 6.9 kg H₂SO₄/t. While these results are considered to present a limited acid generation risk, along with the PAF-LC samples, further assessment would be recommended (e.g. long-term kinetic testwork) to evaluate the acid generation and solute release behaviour associated with these materials.

Figure 4.19: MEND classification plot showing AMIRA classifications (25% ANC)



4.1.9 Multi-element chemical assays

Multi-element analyses were conducted on all waste rock samples.

The Global (or Geochemical) Abundance Index (GAI) is a tool that provides a measure of geochemical enrichment relative to average crustal abundance (Bowen, 1979). The GAI (based on a log-2 scale) is expressed in seven integer increments (0 to 6). A GAI of 0 indicates that the content of the element is less than, or similar to, the average crustal abundance. A GAI of 3 corresponds to a 12-fold enrichment above the average crustal abundance, and a GAI of 6 corresponds to a 96-fold, or greater, enrichment. Elements with a GAI value of 3 or more are generally considered to be enriched. GAI values have been calculated, and the number of samples with GAI values of 4 or more for given elements is shown in Table 4.7, with full results in Appendix F.

Elements considered to be present in enriched concentrations in more than 10% of samples for one or more waste lithologies include: Ag, As, Cl, S, Se, Te, W and N.

All samples indicated enrichment of Te, however, for most (155) samples, this was due to analytical constraints where the LOD value (<0.2 ppm) exceeded the GAI 3 threshold (0.06 mg/kg). Six waste samples recorded a detectable Te concentration ranging from 0.2 ppm to 0.4 ppm (tm, gm, ti, ts).

Selenium (Se) was enriched in 42% (68 of 161) of waste rock samples from all rock types except for granite (gg) while tungsten (W) was enriched in 19% of waste rock samples (30) across all rock types except for biotite garnet gneiss (tbg), dolerite (md), and granite (gg).

Nitrogen (N) was enriched in 73% (27 of 37) waste rock samples submitted for analysis, including samples from all rock types except for biotite garnet gneiss (tbg) and dolerite (md). The reported total nitrogen concentrations (110 mg/kg to 1,900 mg/kg), inferred to be TKN⁴, appear high and these results have been queried with the laboratory.

⁴ Summed nitrogen content in the form of organic nitrogen and ammonium/ammonia.

Table 4.7: Summary of multi-element results and element enrichment (waste rock)

Element		Ag	As	Bi	Cl	Co	Cr	Mo	Ni	Re	S	Sb	Se	Te ⁽¹⁾	W	Total nitrogen
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Average crustal abundance		0.07	1.5	0.048	130	20	100	1.5	80	0.0004	260	0.2	0.05	0.005	1	25
GAI = 3 threshold		0.84	18	0.58	1,560	240	1,200	18	960	0.0048	3,120	2.4	0.6	0.06	12	300
Sample Count		161	161	161	82	161	161	161	161	161	161	161	161	161	161	37 ⁽²⁾
Statistics for all waste samples	Minimum	<i>0.05</i>	<i>0.5</i>	<i>0.01</i>	11	1.1	2	0.3	3.7	<i>0.002</i>	<i>50</i>	<i>0.05</i>	<i>0.5</i>	<i>0.2</i>	<i>0.1</i>	110
	Median	0.08	1.4	0.06	115	20	69	1.4	50	<i>0.002</i>	451	0.07	<i>0.5</i>	<i>0.2</i>	3	560
	Average	0.41	3.8	0.09	280	33	151	2.2	103	0.0022	1,565	0.18	0.67	0.2	13	588
	Maximum	9.7	61	0.99	4,300	407	3,274	20	2,540	0.014	30,660	3	3.9	0.4	796	1,900
Lithology	Sample count by lithology	Count of samples with GAI ≥3 per lithology														
tb	30	1	0	1	0	1	1	0	1	0	1	0	13	30	2	3
tbg	3	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0
tg	30	1	0	1	0	0	0	0	0	0	0	0	8	30	3	4
ti	9	1	0	0	0	0	0	0	0	0	1	0	2	9 (1)	2	3
tm	24	1	1	1	0	0	1	1	1	1	5	0	12	24 (2)	3	3
ts	6	0	0	0	0	0	0	0	0	0	1	0	2	6 (1)	1	2
md	5	0	0	0	0	0	0	0	0	0	2	0	4	5	0	0
gg	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
gm	18	0	0	0	0	0	0	0	0	0	3	0	2	18 (2)	2	1
xx	6	0	1	0	0	0	0	0	0	0	0	0	1	6	2	2
cy	20	7	3	0	2	0	0	0	0	1	0	1	12	20	9	4
zl	3	1	0	0	0	0	0	0	0	0	0	0	3	3	2	2
zs	3	2	1	0	0	0	0	0	0	0	0	0	3	3	1	1
zx	3	0	0	0	0	0	0	0	0	0	0	0	3	3	3	1
Count of waste samples with GAI≥3		15	6	3	2	1	2	1	2	2	13	1	68	161 (110)	30	27
Proportion of waste samples with GAI≥3		9%	4%	2%	2%	1%	1%	1%	1%	1%	8%	1%	42%	100% (68%)	19%	73%

Notes: Light orange highlighting indicates concentrations above GAI = 3 threshold; light blue highlight indicates elements enriched in more than 10% of samples (relative to number of samples per lithology); grey italicised text indicates concentrations at LOD.

¹ The number of samples where enrichment indicated is based on detectable concentrations of Te is given in brackets.

² A subset of 37 waste rock samples underwent analysis for total nitrogen.

4.1.10 Radioactive material assessment

Uranium and thorium concentrations (as milligrams per kilogram) were included within the multi-element analysis suite undertaken on the waste rock samples. Concentrations of uranium in the waste rock samples ranged from 0.07 ppm to 7.7 ppm (average 0.83 ppm) and thorium ranged from 0.18 ppm to 33 ppm (average 4.9 ppm) (Table 4.8).

Mass-based uranium can be combined with specific activities (in becquerels per gram) to calculate U-238 activity (the most abundant radionuclide in natural materials). The calculated U-238 activities ranged from 0.0009 Bq/g to 0.096 Bq/g – well below the definition of a radioactive material as given in DMP guidance (DMP, 2010), i.e. material containing more than 1 Bq/g U-238.

Similarly, the specific activity of Th-232 has been used to calculate Th-232 activity of the waste rock, and was 0.00074 Bq/g to 0.14 Bq/g, also below 1 Bq/g.

It is not considered necessary to conduct any further radioactivity assessments.

Table 4.8: Radioactive materials summary – waste rock samples

No. of samples	Statistic	U (ppm)	U-238 (Bq/g)	Th (ppm)	Th-232 (Bq/g)
161	Minimum	0.07	0.00088	0.18	0.00074
	Median	0.61	0.0076	3.2	0.013
	Average	0.83	0.010	4.9	0.020
	Maximum	7.7	0.096	33	0.14

4.1.11 Element leachability

Static DI water leach extraction tests were undertaken to provide an indication of the readily leachable elements that may be present within waste rock. Note the test results reflect the condition of the samples at the time they were tested and may not represent the materials behaviour following weathering.

Short-term static DI leach tests were carried out on 50 waste rock samples. The samples obtained from diamond drill hole core (39 of the waste rock samples) were rough crushed (<10 mm) in advance of the leach tests. The remaining waste rock samples (11) were pulverised (RC pulp) material. The leach tests were conducted at a 1:3 solid to liquid ratio with a 24-hour contact time (during which the sample was agitated). The leach solutions were filtered using 0.2 µm filters prior to analysis to limit the presence of colloids⁵ within the solutions.

The leach test laboratory results are provided in Appendix G.

A summary of the leach test laboratory results for key parameters is shown in Table 4.9. The ANZECC guideline trigger values for 95% species-level protection (SLP) in aquatic ecosystems and for livestock drinking water are also listed for reference purposes. The laboratory results

⁵ A colloid is a mixture in which one substance of microscopically dispersed insoluble particles is suspended throughout another substance. Colloids occur within the size range from 0.01 µm to 10 µm and colloidal-sized materials can include metal oxyhydroxides and clay particles (Stumm and Morgan, 1981). Filtering leachates prior to analysis (using either 0.2 µm or 0.45 µm filters) may not remove all colloid material.

cannot be directly used to represent the leachate quality expected to be associated with, for example, a waste rock dump. Depending on field conditions, seepage water quality might be better or worse than indicated by these leach tests. While comparison with the guidelines may help to identify parameters of concern, it does not necessarily mean that parameters that remain below the guidelines would not be of concern in the field-scale system.

Of the 50 waste rock leachates, 3 produced insufficient sample volume to allow full-suite analysis.

The final pH of leachates ranged between pH 4.2 and pH 9.3. Most samples (25; 50%) resulted in alkaline leach solutions with a pH above 8; only seven samples generated acidic solutions (below pH 6). The most acidic leach solutions (pH <5) were generated from five samples (including cy, tg, ti, tm and gm) with variable sulfur contents (0.07% to 2.7% TS). The average waste rock leachate pH was 5.3 (calculated from the average hydrogen ion concentration).

Most leachates had a low salinity, with 31 samples (66%) recording an EC of less than 500 $\mu\text{S}/\text{cm}$. The average EC for waste rock leachates was 754 $\mu\text{S}/\text{cm}$. Five waste rock leachates recorded a saline leachate above 2,000 $\mu\text{S}/\text{cm}$. The maximum EC (5,300 $\mu\text{S}/\text{cm}$) was recorded for a leachate from a clay (cy) sample.

Concentrations of Hf, In, Nb, Re, and Te, were below the LOD for all leachates. Readily detectable trace elements included Al, Ba, B, Cd, Cu, Fe, Li, Mn, Ni, Rb, Sr, and Zn, which were above the LOD in more than 20% of the leachates.

Of the trace elements that were enriched in more than 10% of the waste rock samples (Ag, As, Cl, S, Se, and W, Section 4.7):

- Ag was detectable in only 4 leachates, with a maximum concentration of 0.012 mg/L recorded for a clay (cy) leachate.
- As was detectable in 23 (47%) tests. A maximum leachate As concentration of 0.018 mg/L was recorded for a calc-silicate rock (xx) sample, followed by dolerite (md) and biotite garnet gneiss (tbg) leachates that each recorded 0.016 mg/L.
- Cl was enriched in 2 clay (cy) samples, 1 of which underwent leach testing and recorded a leachate Cl concentration of 1,400 mg/L.
- The average sulfate leachate concentrations from the waste rock lithologies ranged from 3.3 mg/L to 361 mg/L and was highest for the mafic granulite (tm) lithology. The maximum sulfate concentration (1,700 mg/L) was in an acidic leachate (pH 4.7) generated from a tm sample with a high sulfur content (2.7% TS).
- Se was detectable in 14 (29%) leachates, recording a maximum concentration of 0.007 mg/L for a mafic granulite (gneiss) (tm) leachate.
- W was detectable in 10 (21%) leachates, recording a maximum concentration of 0.21 mg/L for a biotite (dominant) quartz granulite (gneiss) (tb) leachate.

Total nitrogen analysis was undertaken on 47 waste rock leachates with concentrations ranging from 0.18 mg/L to 7.3 mg/L (average 1.4 mg/L). A subset of 37 leachates underwent further analysis for nitrogen species, including ammonia (NH_3 as N), nitrate (NO_3 as N), and nitrite (NO_2 as N). Nitrate-N or ammonia-N were the dominant nitrogen species present in the leachates with concentrations up to 5.6 mg/L (0.4 mg/L average) and 2.2 mg/L (0.21 mg/L average), respectively.

Table 4.9: Summary of leach analysis results for selected parameters – waste rock (average values)

Lithology code			tb	tbg	tg	ti	tm	ts	md	gg	gm	xx	cy	zl	zs	zx	ANZECC	
Lithology			Biotite (dominant) quartz granulite (gneiss)	Biotite garnet gneiss	Garnet (dominant) quartz granulite (gneiss)	Intermediate granulite (gneiss)	Mafic granulite (gneiss)	Speckled mafic granulite (gneiss)	Dolerite	Granite	Monzogranite	Calc-silicate rock	Clay	Lateritic duricrust	Soil	Exotic overburden (roadbase) dump material	Species limit of protection (95% SLP)	Livestock drinking water
Sample count			n = 6	n = 3	n = 7	n = 4	n = 5	n = 2	n = 3	n = 1	n = 6	n = 1	n = 6	n = 2	n = 1	n = 2		
Parameter	Units	LOD	Average	Average	Average	Average	Average	Average	Average	-	Average	-	Average	Average	-	Average		
pH ¹	pH units		7.6	8.3	5.0	5.0	5.3	8.5	8.3	8.7	5.0	9.3	5.1	5.3	7.1	6.4	6.5–8.5 ²	6.5–8.5 ²
EC	µS/cm	2	395	187	623	425	813	550	317	88	743	200	2,396	940	1,000	760		
Total alkalinity	mg/L	5	51	50	48	36	37	72	81	53	56	33	10	6	26	40		
Acidity	mg/L	5	5.02	<5	7.7	41	11	<5	<5	<5	53	<5	6.9	7.2	<5	8.2		
Ca	mg/L	0.5	4.6	4.7	6.1	10	63	11	1.6	1.4	52	16	4.4	0.6	6.3	4.9		1,000
Mg	mg/L	0.5	3.4	1.8	7.3	10	51	11	6.9	5.4	22	0.8	21	4.4	12	6.7		500
K	mg/L	0.5	6.7	5.9	8.2	8.3	7.3	2.7	2.4	1.4	8.1	2.3	7.3	1.2	3.3	3.6		
Na	mg/L	0.5	52	15	83	21	32	78	55	16	39	10	353	137	150	117		
Cl	mg/L	1	58	11	123	23	24	33	6.1	3.6	32	7.4	495	209	260	176		
SO ₄	mg/L	1	34	10	66	131	361	126	58	3.3	297	44	253	77	41	28		500
F	mg/L	0.1	0.61	0.27	1.02	0.47	0.24	0.46	1.5	0.48	1.02	0.2	0.48	0.2	0.45	0.2		2
Al	mg/L	0.01	0.85	0.14	2	0.58	2.04	0.23	4.8	4.8	1.5	0.18	0.081	<0.01	0.55	2.8	0.055 ³	5
Sb	mg/L	0.001	<0.002	<0.001	<0.001	0.0011	0.0011	<0.001	<0.001	<0.001	<0.001	0.0024	<0.001	<0.001	<0.001	<0.001	0.009 ³	
As	mg/L	0.001	0.0033	0.0066	0.0021	0.0031	0.0019	0.0013	0.0073	0.0039	0.0011	0.018	0.0011	<0.001	0.0012	0.0023	0.013	0.025
Be	mg/L	0.0005	0.0005	0.0014	0.0012	0.0009	0.0009	0.0007	0.00092	<0.0005	0.0008	0.00054	0.0006	<0.0005	0.00053	<0.0005		0.06
B	mg/L	0.02	0.045	0.023	0.064	0.046	0.043	0.055	0.097	0.078	0.033	0.036	0.14	0.11	0.22	0.24	0.94	5
Cd	mg/L	0.0001	0.00021	0.0011	0.0004	0.001	0.00089	0.00059	0.00037	0.00049	0.00051	0.0005	0.00044	0.0003	0.0005	<0.0001	0.0002	0.01
Cr	mg/L	0.001	0.0017	0.0019	0.005	0.0011	0.007	0.0016	0.012	0.016	0.0019	0.0012	0.002	<0.001	0.0017	0.008	0.001	0.05
Co	mg/L	0.001	0.0046	0.0018	0.054	0.21	0.13	0.0011	0.024	0.016	0.071	<0.001	0.003	0.0014	0.0013	0.0023	0.0014 ³	1
Cu	mg/L	0.001	0.0056	0.0035	0.15	0.098	0.014	0.0027	0.012	0.16	0.0074	0.006	0.0053	0.0032	0.017	0.017	0.0014	1
Fe	mg/L	0.01	1.5	0.041	3	3.5	3.9	0.18	8.8	10	11	0.36	0.19	0.01	0.57	1.3	0.3	
Pb	mg/L	0.001	0.0015	0.0017	0.001	<0.001	<0.001	<0.001	0.0042	0.0055	0.0023	<0.001	0.001	<0.001	0.0013	0.0041	0.0034	0.1
Mn	mg/L	0.001	0.19	0.026	2.2	4.8	11	0.058	0.42	0.34	12	0.0058	0.16	0.023	0.0055	0.24	1.9	10
Hg	mg/L	0.00005	<0.00006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000063	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0006	0.002
Mo	mg/L	0.001	0.025	0.021	0.059	0.015	0.018	0.025	0.026	0.067	0.047	0.012	0.003	<0.001	0.26	0.0012	0.034 ³	0.01
Ni	mg/L	0.001	0.013	0.003	0.15	3.8	3	0.004	0.046	0.034	0.16	0.003	0.023	0.0026	0.0053	0.0045	0.011 ³	1
Se	mg/L	0.001	0.0011	0.0017	0.001	0.0012	0.0023	0.0026	<0.001	<0.001	0.0013	<0.001	0.0013	<0.001	0.003	0.0012	0.011	0.02
Ag	mg/L	0.001	<0.002	<0.001	0.002	<0.001	0.0014	<0.001	<0.001	0.012	<0.001	<0.001	<0.001	<0.001	0.0011	<0.001	0.00005 ³	
Tl	mg/L	0.001	<0.001	0.0014	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.00003 ³	
U	mg/L	0.001	0.001	<0.001	<0.001	0.0012	0.0011	<0.001	<0.001	<0.001	0.0012	<0.001	<0.001	<0.001	<0.001	<0.001	0.0005 ³	0.2
V	mg/L	0.001	0.021	0.011	0.01	0.0041	0.012	0.0053	0.073	0.04	0.0044	0.014	0.0022	<0.001	0.016	0.017	0.006 ³	0.1
Zn	mg/L	0.001	0.0083	0.0062	0.16	0.16	0.17	0.0067	0.041	0.062	0.204	0.004	0.043	0.19	0.0051	0.023	0.008	20
Si	mg/L	0.1	9.8	5.4	17	21	122	7.4	18	100	9.2	12	17	6.8	37	32		
NH ₃ as N	mg/L	0.005	0.026	0.023	0.5	0.14	0.075	0.32	0.03	0.064	0.09	0.039	0.46	0.28	0.37	0.24	0.9	
NO ₃ as N	mg/L	0.005	0.067	0.38	0.26	0.17	0.1	0.053	0.06	<0.05	0.058	0.27	1.5	1	0.65	<0.05	2.4 ⁴	23
NO ₂ as N	mg/L	0.005	0.016	0.0081	0.028	0.018	0.0072	<0.005	0.04	<0.05	<0.005	0.0065	0.088	<0.005	0.12	<0.05	10.6	3.1
Total N	mg/L	0.1	0.56	1.02	1.6	1.31	0.94	1.1	0.56	1.3	0.43	0.88	3.1	2.2	4	3.2		
Total P	mg/L	0.01	0.13	0.051	0.16	0.089	0.032	0.11	0.67	0.43	0.21	0.017	0.2	0.011	0.09	0.13		

Notes: Blue shading indicates values that exceed the ANZECC 95% SLP guideline value; bold type indicates values that exceed the livestock drinking water guideline value. Statistics have been calculated using LOD values.

¹ Hydrogen ion concentrations were used to calculate statistical summaries involving pH measurements.

² pH values outside the indicated range are considered exceedances of the guideline value.

³ Low reliability guideline value (ANZECC and AMRCANZ, 2000)

⁴ Based on SLP grading values of nitrogen following NIWA (2013) and ANZECC and ARMCANZ (2000).

Leaching as a function of pH

Solution pH is often a primary influence on the solubility of contaminants. Many minerals are more soluble under acidic conditions, and mineral dissolution results in higher dissolved concentrations of constituent elements. Other pH-dependent processes include sorption onto mineral surfaces. Many metals sorb less strongly under acidic conditions. Therefore contact with acidic water may result in the release of adsorbed solutes and an increase in dissolved concentrations.

Plots of DI water leachate concentrations for selected key parameters as a function of pH are shown in Figure 4.20 to Figure 4.22.

The highest dissolved concentrations of Co, Mn, Ni, Zn, and SO₄ occurred in acidic leach solutions (pH <5). Maximum concentrations were recorded in leachates from one of four lithologies (ti, tm, gm, and tg) that tend to cluster together on plots (Figure 4.15). These leachates typically involved fresh samples with the highest total sulfur (LECO) contents (2.4% to 3.4%), except for one leachate from a partially weathered garnet (dominant) quartz granulite (gneiss) (tg) sample with relatively low total sulfur (0.14% TS).

While EC was typically higher in acidic leachates compared with alkaline leachates (Figure 4.20f), the maximum EC values occurred in near-neutral leachates from clay (cy) samples.

Maximum concentrations of As, Mo, Ti, and V were greatest in alkaline leachates with pH values above 7 (Figure 4.21). Trace elements such as As, Mo, and V often form oxyanions that are negatively charged, resulting in stronger sorption at acidic pH (as mineral surfaces, such as iron oxides/hydroxides tend to be positively charged). Higher concentrations of Ti in alkaline leach solutions may reflect dissolution of silicates at higher alkaline pH (Ti can replace Si within silicate structures).

Maximum concentrations of Al, Cd, Cu, and Fe were recorded in both acidic and alkaline leachates. Concentrations for these trace elements were comparatively lower in near-neutral conditions (Figure 4.22).

It would be expected that the highest dissolved concentrations of most minor and trace elements would occur in acidic leach solutions (pH <5). However, high concentrations of Al, Fe, Cu and As occur in solutions in the near-neutral to alkaline pH range (pH 6 to pH 9). At this pH range, it is possible that the concentrations are attributable to the presence of colloids within the solutions.

Figure 4.20: Leachate Co, Mn, Ni, Zn, SO₄, and EC concentrations/values as a function of solution pH

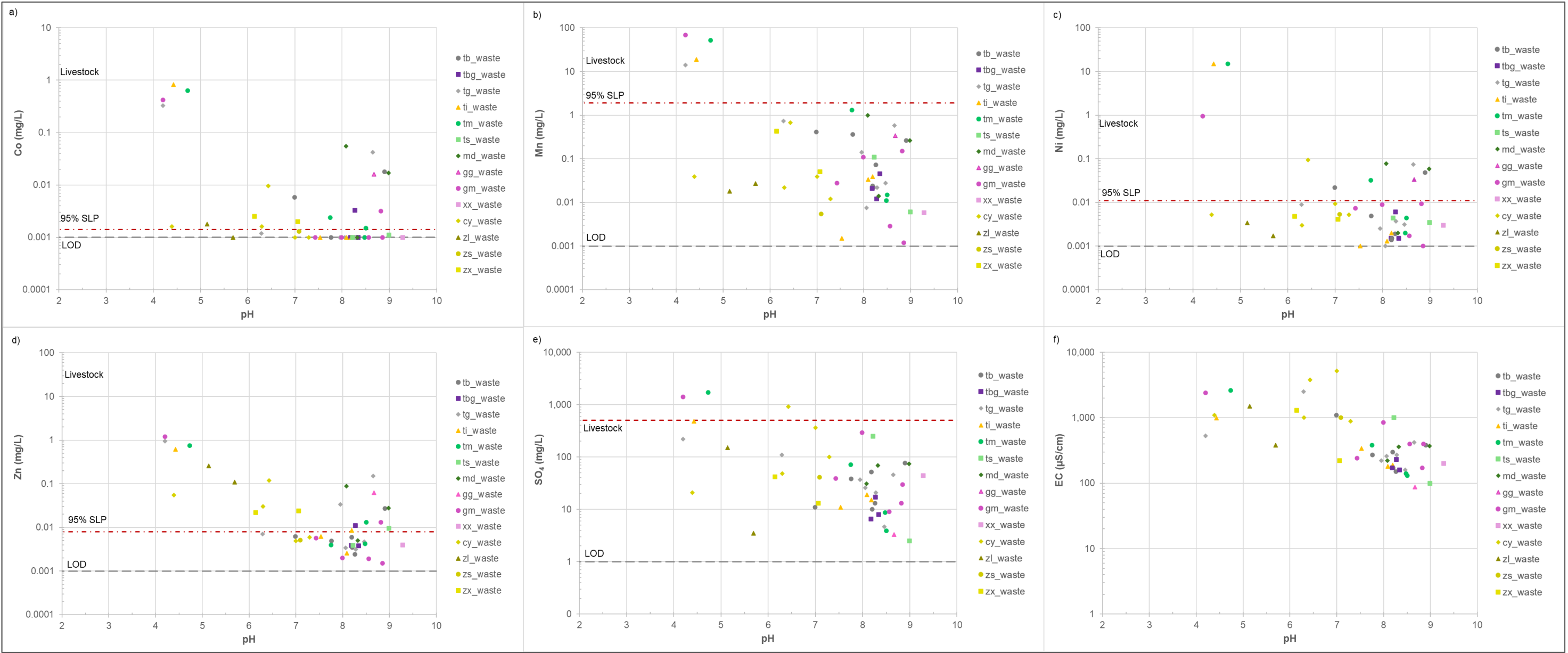


Figure 4.21: Leachate As, Mo, Ti, and V concentrations as a function of solution pH

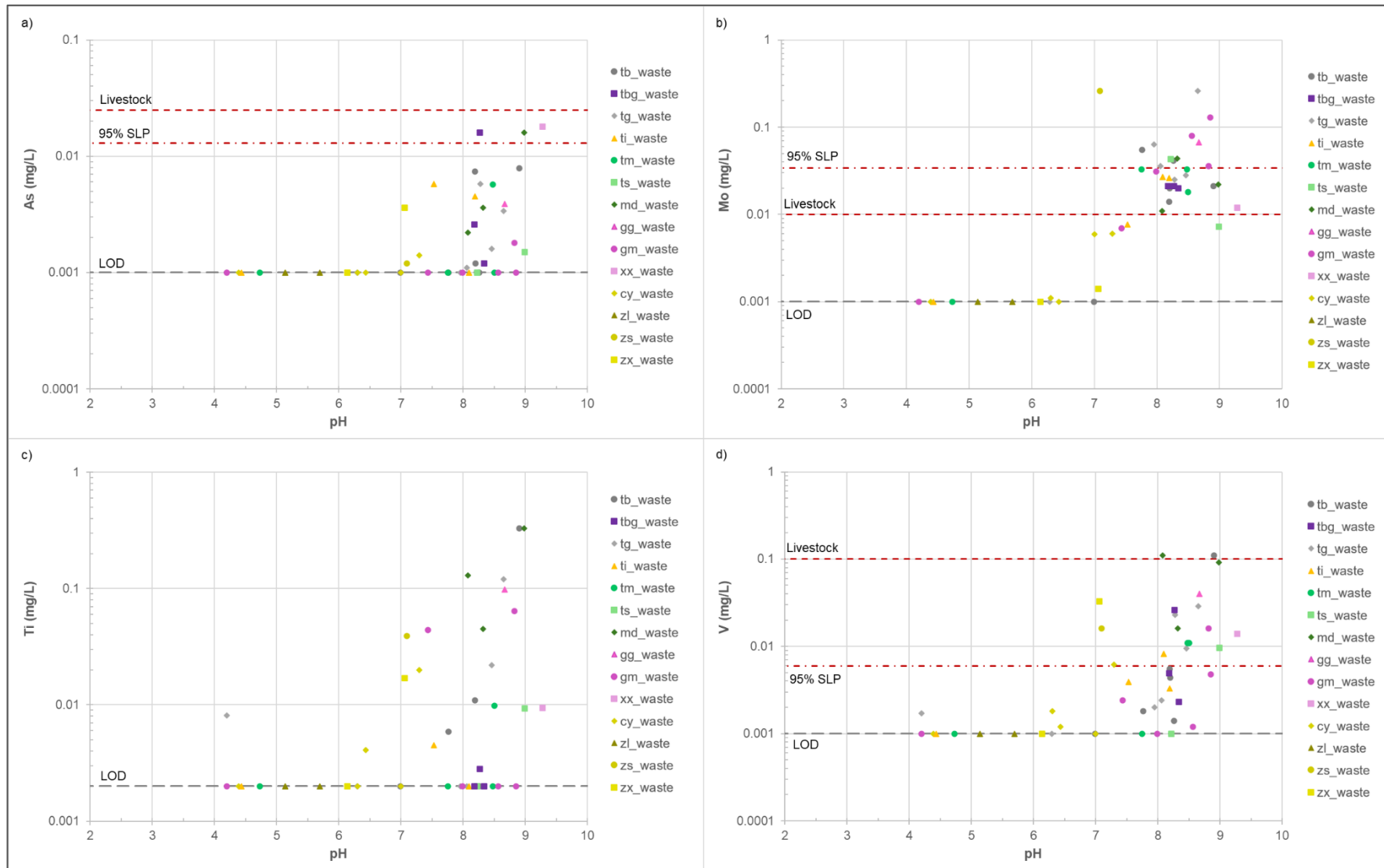
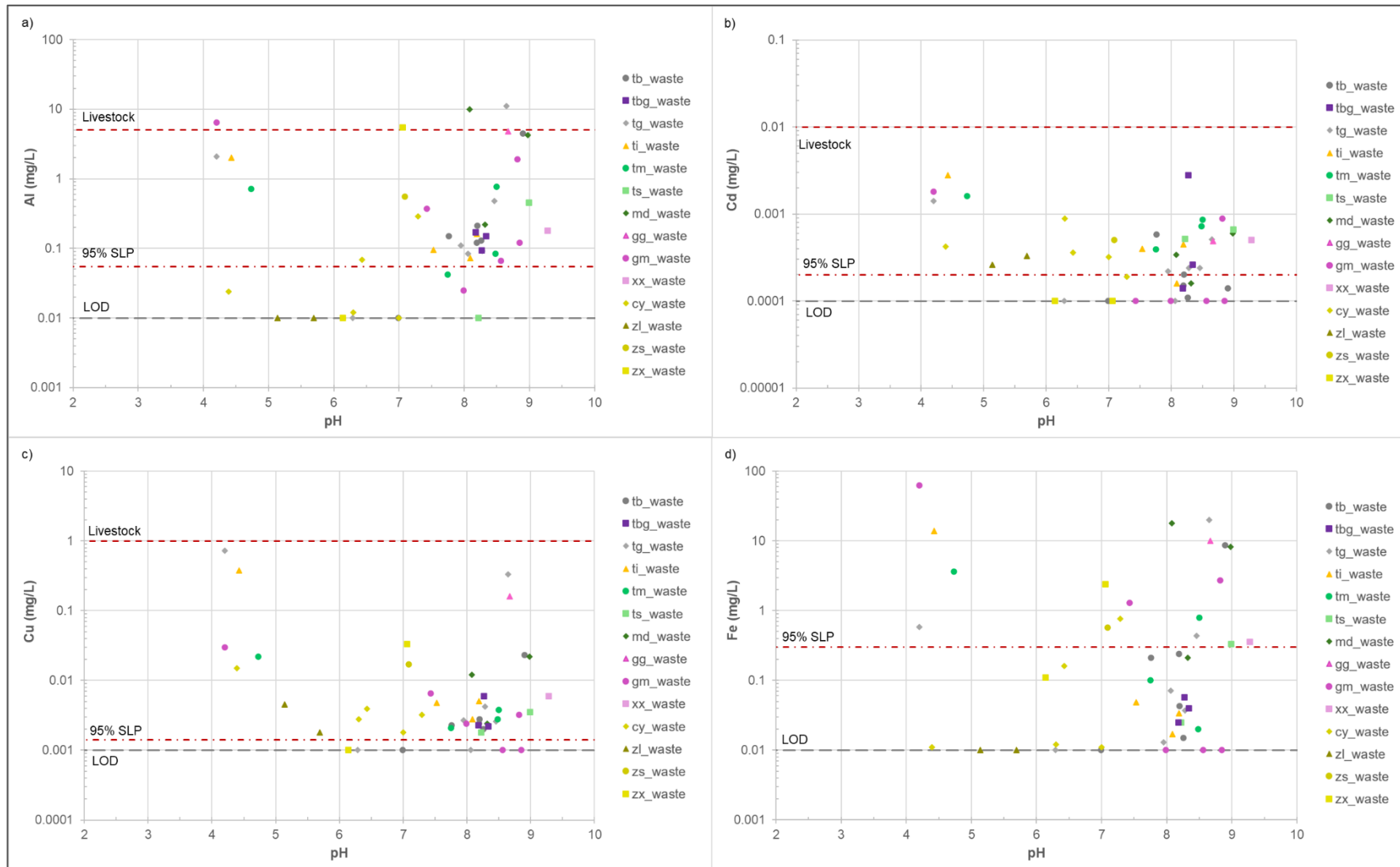


Figure 4.22: Leachate Al, Cd, Cu, and Fe concentrations as a function of solution pH



Solubility controls

To assess the role of solubility controls, the leachate chemistries were examined using PHREEQC⁶. The measured solute concentrations in the leachates were input into PHREEQC so that saturation indices for key mineral phases could be calculated. The focus of the calculations was to identify minerals close to equilibrium (a saturation index – SI – close to zero). Such minerals may have dissolved to attain equilibrium with the leachate and therefore may be used to infer solubility controls or limitations within the tests.

Some possible solubility controls that were identified are as follows:

- Iron oxides and hydroxides – ferrihydrite, goethite and hematite were oversaturated or close to saturation in most leach solutions.
- Aluminium oxides and hydroxides – gibbsite was close to saturation in acidic solutions (pH <6) and oversaturated in near-neutral and alkaline solutions; diaspore and boehmite were typically close to saturation or oversaturated in leach solutions with pH above pH 6.
- Hydroxysulfates – jarosite and alunite were typically oversaturated or close to saturation in acidic solutions (pH <6) and in some leachates generated from clay or regolith samples at circum-neutral pH (some of these solutions had higher sulfate concentrations).
- Sulfates – barite was close to equilibrium in approximately 40% of solutions, while gypsum was undersaturated in all but a few acidic solutions (pH <5).
- Carbonates – were undersaturated in most solutions, other than a few of the most alkaline solutions (>pH 8), in which calcite and dolomite were oversaturated.
- Carbonates – were unsaturated in all solutions below pH 8. In the more alkaline solutions (above pH 8), dolomite was close to equilibrium in around 20 (of 30) solutions and calcite was close to equilibrium in 11 (of 30) solutions.

These findings generally align well with the mineralogical assessment (Section 4.1); calcite, dolomite and jarosite were identified by XRD.

4.1.12 Weathering and erosion potential

To determine the weathering and erosion potential of the waste rock materials, the following test methods were undertaken on a subset of 24 waste rock samples:

- Emerson aggregate test
- CEC including exchangeable sodium percentage (ESP)
- slake durability.

⁶ All geochemical modelling calculations were undertaken using PHREEQC Interactive, Version 3.7.3-15968 (Parkhurst and Appelo, 1999). Unless otherwise indicated, the thermodynamic data used were those contained in the HATCHES thermodynamic database (Bond et al., 1997), NEA v20, released in 2013.

Exchangeable cations held on clay surfaces and organic matter can influence the physical properties of soil. In general, if Ca, Mg and K are dominant on the clay exchange surfaces, the soil will display increased physical structure. If Na occurs at >6% on exchange surfaces, the soil can be considered sodic, which can lead to degradation of physical properties, i.e. dispersion, hard setting, and erosion in clay-rich soils.

Sodic soils are prone to erosion by the process of dispersion of the clay fraction in the presence of water. Rapid erosion of such materials can cause tunnel erosion and gully in waste rock dumps, affecting their long-term stability and sustainability. The ESP can be used to indicate the susceptibility of soil to dispersion. Soils with an ESP >6% are generally classified as sodic, and soils with ESP >14% are classified as strongly sodic (Northcote and Skene, 1972).

The slake durability test is designed to assess the durability of rocks when subjected to repeated cycles of wetting and drying, akin to the natural weathering processes in the field. The slake durability index (SDI) can be used to describe how resistant a rock is to disintegration, where a weak rock, with low durability, is classified as having a low SDI (below 85%) (Gamble, 1971).

No particle size distribution (PSD) analysis was undertaken as only drilled materials were available for assessment.

It should be noted that these tests are based on schemes designed to assess and classify soils according to their weathering and erosion potential. Because no equivalent schemes exist for the classification of waste rock, the soil-based scheme has been adopted herein. It should be also noted that the physical characteristics (grain size fractions) of the samples reflect the sampling method employed (e.g. diamond drilling and core drilling sample preparation/crushing) and are not representative of run-of-mine materials.

The results are summarised below and in Table 4.10 (full results available in Appendix I).

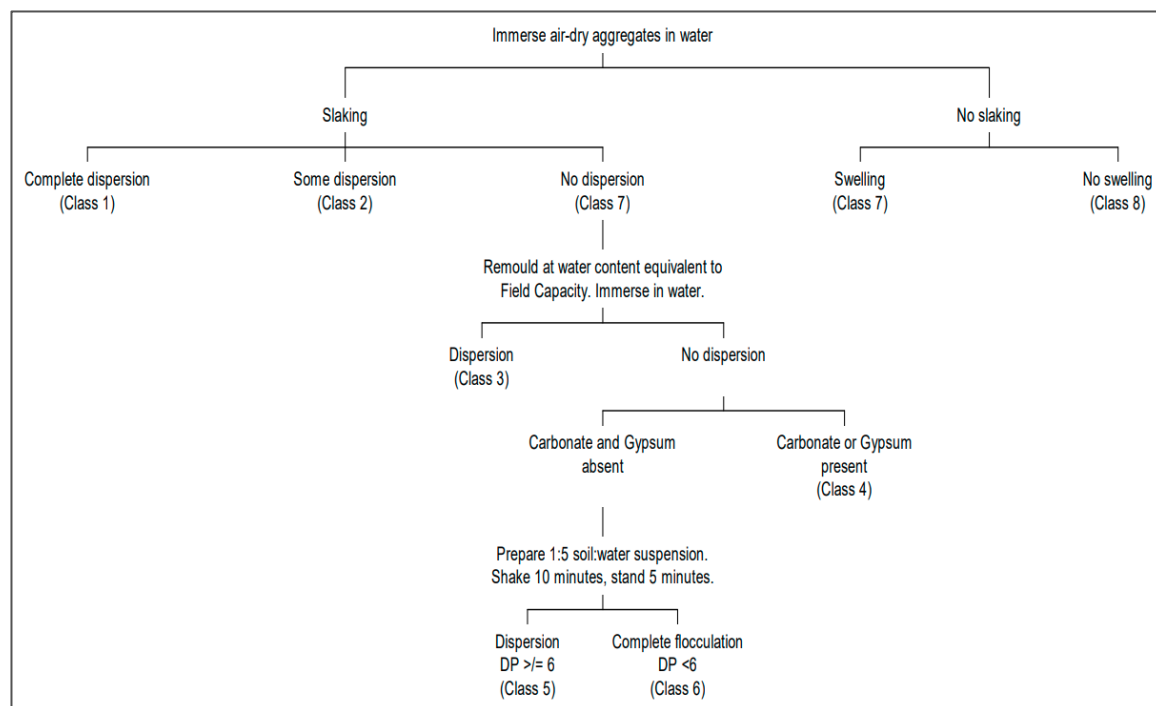
Emerson aggregate test results

The Emerson class was determined on 14 oxide samples using the methodology shown in Figure 4.23:

- 3 (of 12) samples (tb, tg, ti – strongly weathered) were classified as Class 8, indicating no swelling and no dispersive behaviour, and are considered to have a negligible dispersion risk.
- 6 (of 12) samples (including tb, gg cy, zs) were classified as Class 5, indicating that these materials pose a slight dispersion risk based on the rating scale presented in Hazelton and Murphy (2007)⁷. The Emerson Class 5 is indicative of soils that may be prone to minor clay dispersion and slaking following severe disturbance (particularly when wet) (Figure 4.23). For example, the breakdown of soils due to exposure to water turbulence could result in dispersion.
- 2 samples (zl – completely weathered) were classified as Class 6, reflecting negligible dispersibility, based on the rating scale presented in Hazelton and Murphy (2007).
- 3 (of 12) samples (zs (sw), cy (cw) and zx (cw)) were classified as Class 2 (some or moderate dispersion), suggesting potentially dispersive material and therefore a risk of erosion.

⁷ The Hazelton and Murphy (2007) dispersibility risk ratings include negligible/aggregated, slight, moderate, high to moderate, high, and very high.

Figure 4.23: Overview of the Emerson aggregate test methodology and classes



Sources: Department of Sustainable Natural Resources (undated)

Sodicity and cation exchange capacity results

The ESP and CEC were determined for 20 oxide waste rock samples to assess the likelihood that this material would be dispersive if placed on the outer surface of a waste rock landform. Results are shown in Table 4.10.

CEC ranged from very low (2.6 meq/100 g – zs) to moderate (20 meq/100 g – clay), with most samples (16 out of 20) recording low CEC (<12 meq/100 g). The results were used to calculate the sample ESP.

ESP values ranged from 7% to 53%. Based on the ESP percentage, 17 samples (including tb, tg, md, gg, gm, cl, zl, zs, zx) classify as strongly sodic (>14 % ESP) and 3 samples (tb, ti, zs) classify as marginally sodic to sodic (6% to 14% ESP), based on Northcote and Skene (1972) ratings.

Based on the findings from the preliminary physical (soils) testwork, the assessed oxide samples are considered to have variable dispersion risk and typically are strongly sodic. Further assessment of bulk-mined materials (representative of run-of-mine waste rock PSDs) should be completed when possible.

Table 4.10: CEC, ESP and Emerson aggregate test results

SRK ID	Lithology	Pit	Weathering class	Ca	K	Mg	Na	CEC	ESP	Emerson class	Emerson soil description	ESP rating
				Meq/100 g					%			
BSDD004_4_5.8	tb	Jinkas	sw	3.7	0.81	2.5	0.6	7.6	7.9	8	Rock	Marginally sodic to sodic
BSDD024_19.5_22	tb	Jinkas	cw	0.39	0.76	1.5	2	4.7	43	5	Silty sand with gravel	Strongly sodic
BSDD002_8_10	tg	Jinkas	sw	0.93	0.49	2.1	2.2	5.7	38	8	Rock	
BSDD004_15_17	ti	Jinkas	sw	9.2	0.61	1.6	0.86	12	7	8	Crushed rock	Marginally sodic to sodic
BSRC0494_18_20	md	Jackson	sw	2.8	0.36	8	7.7	19	41	-	-	Strongly sodic
BSDD041_1_2	gg	Jinkas	sw	2.3	0.54	1.7	1.9	6.5	30	5	Gravel	Strongly sodic
BSRC1064_10_12	gm	Jackson	sw	1.6	0.57	0.9	1.8	4.8	37		-	Strongly sodic
BSDD002_31_33	cy	Jinkas	cw	0.66	0.81	3.1	2.6	7.2	37	5	Silty sand with gravel	Strongly sodic
BSDD033_22_24	cy	Dingo	sw	0.41	0.3	2.9	2.3	5.9	39	5	Silty sand with gravel	Strongly sodic
BSDD041_8_10	cy	Jinkas	cw	2	0.6	2.8	2.1	7.5	28	2	Sandy clay with gravel	Strongly sodic
BSDD048_23_25	cy	Jackson	sw	0.4	0.3	7.5	7.9	16	49	5	Sandy silt with gravel	Strongly sodic
BSRC0948_13_15	cy	Olympia	cw	0.64	0.91	6.7	7.1	15	46	-	-	Strongly sodic
BSRC1357_6_8	cy	Olympia	sw	0.22	0.73	8.5	10	20	53	-	-	Strongly sodic
BSDD034_0.8_1.5	zl	Dingo	cw	0.31	0.13	2	0.78	3.2	24	6	Silty sand with gravel	Strongly sodic
BSDD035_1.5_3	zl	Dingo	cw	0.27	0.26	4	3.9	8.4	46	6	Silty sand with gravel	Strongly sodic
BSDD036_0_0.1	zs	Jinkas	cw	0.94	0.4	0.72	0.56	2.6	21	5	Silty sand	Strongly sodic
BSDD048_0_0.28	zs	Jackson	sw	1.7	0.45	3.7	1.1	7	16	2	Sandy clay	Strongly sodic
BSRC0765_0_2	zs	Jinkas	cw	2.5	0.32	1.5	0.34	4.7	7.2	-	-	Marginally sodic to sodic
BSDD038_0_1	zx	Jinkas	cw	2.4	0.46	3.4	1.4	7.7	19	2	Silty sand with gravel	Strongly sodic
BSRC1018_5_7	zx	Jinkas	pw	0.94	0.25	1.6	1.3	4.1	32	-	-	Strongly sodic

Slake durability results

Slake durability tests were performed on nine waste rock samples from the fresh zone. As summarised in Table 4.11, all samples exhibited a retained mass greater than 99% after the second wetting-drying cycle, with a very high durability class for extremely durable rocks according to the classification proposed by Gamble (1971).

Table 4.11: Slake durability results for waste rock samples

SRK ID	Lithology	Pit	1st cycle (%)	2nd cycle (%)	Appearance of fragments in the drum	Appearance of material passing through the drum	Slake durability class
BSDD008_44.7_46	tb	Dingo	99.9	99.8	Retained specimens remain virtually unchanged	Slight silt appearance	Extremely durable
BSDD018_129_131	tb	Jinkas	99.2	99.1			
BSDD036_87_89	tg	Jinkas	99.7	99.6			
BSDD048_57_59	ti	Jackson	99.8	99.7			
BSDD036_121_123	tm	Jinkas	99.4	99.1			
BSDD044_66_68	tm	Dingo	99.8	99.7			
BSDD032_150_152	ts	Jinkas	99.8	99.6			
BSDD022_47.3_47.8	gm	Jinkas	100.4	100.3			
BSDD002_54_55.6	xx	Jinkas	99.6	99.5			

Notes: Slacking fluid: tap water, at 21°C. All results shown correspond to fresh samples. Sample BSDD022_47.3_47.8 could not be tested due to insufficient material.

4.1.13 Fibrous minerals

Background information on asbestiform minerals and management of fibrous minerals in mining operations can be found in the DMPE (formerly DMP) guidance document, *Management of fibrous minerals in Western Australian mining operations – guideline* (DMP, 2015). Asbestiform⁸ minerals are routinely encountered within geological sequences in Western Australia, including mafic and ultramafic rocks within the ‘greenstone belts’ and banded iron formations of the Hamersley Basin (DMP, 2015).

Asbestiform minerals can be weathered to produce harmless secondary minerals (e.g. talc, chlorite, clay, iron oxides and hydroxides, and various silicates). They may not be present in near-surface materials due to weathering to secondary minerals (DMP, 2015). The probability of encountering asbestiform minerals in a deposit typically increases with depth. A countable fibre is defined as any object having a maximum width of 1 µm or less, and a length exceeding 5 µm (DMP, 2015).

A total of 25 samples (24 waste rock samples and 1 ore sample) were selected for mineral fibre screening across the range of pits, depths, and lithologies. Unknown mineral fibres were identified in only one sample, and this was subsequently submitted to SEM analysis to evaluate the mineralogy and morphology of the fibres. The study of fibres using SEM is not quantitative. A

⁸ The word ‘asbestiform’ is used to describe minerals that form long fibres that are flexible, of high tensile strength, and form in fibrous aggregates of thin crystals that readily separate (<https://www.mindat.org/glossary/asbestiform>).

subsample of the bulk material is mounted for analysis and examined in numerous fields to identify respirable (or countable) fibres meeting the criteria of $>5\ \mu\text{m}$ in length and $<1\ \mu\text{m}$ in width.

The results are summarised in Table 4.12 and laboratory certificates are provided in Appendix H.

Asbestiform mineral fibres were not identified in 24 of the 25 samples.

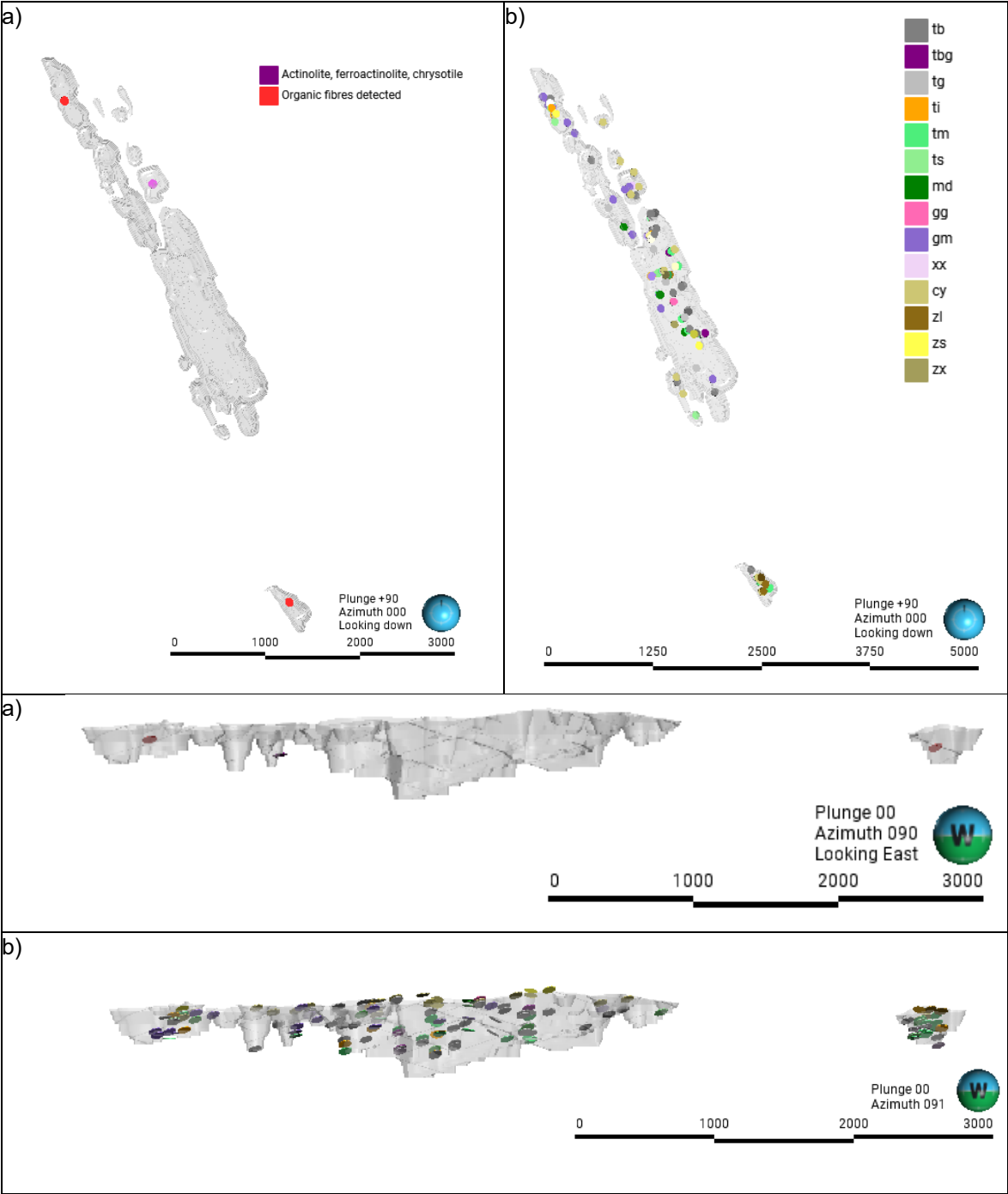
Countable asbestiform mineral fibres were identified in one mafic granulite (gneiss) (tm) sample (BSRC1451_75_76) from the Olympia pit and included actinolite, ferroactinolite and chrysotile (Figure 4.19). XRD results for this sample are also presented in Section 4.1.1.

Table 4.12: Fibrous mineral assessment results – waste rock

Sample ID	Lithology code	Lithology	Pit	Weathering class	Fibrous mineral assessment result
BSDD008_44.7_46	tb	Biotite (dominant) quartz granulite (gneiss)	Dingo	Fresh	nd
BSDD005_105_105.5	tb	Biotite (dominant) quartz granulite (gneiss)	Jinkas	Fresh	nd
BSDD006_96_98	tbg	Biotite garnet gneiss	Jinkas	Fresh	nd
BSDD016_41_43.5	tbg	Biotite garnet gneiss	Jinkas	Fresh	nd
BSDD044_52.83_54.2	tg	Garnet (dominant) quartz granulite gneiss	Dingo	Moderately weathered	Organic fibres detected
BSDD027_106.52_108.7	tg	Garnet (dominant) quartz granulite gneiss	Jinkas	Fresh	nd
BSDD005_33.8_34	tg	Garnet (dominant) quartz granulite gneiss	Jinkas	Partially weathered	nd
BSDD035_48_49.74	ti	Intermediate granulite (gneiss)	Dingo	Partially weathered	nd
BSDD038_96.6_97.8	ti	Intermediate granulite (gneiss)	Jinkas	Fresh	nd
BSDD004_15_17	ti	Intermediate granulite (gneiss)	Jinkas	Strongly weathered	nd
BSDD009_55.3_55.6	tm	Mafic granulite (gneiss)	Dingo	Partially weathered	nd
BSDD048_16_18	tm	Mafic granulite (gneiss)	Jackson	Moderately weathered	nd
BSDD031_112_114	tm	Mafic granulite (gneiss)	Jinkas	Fresh	nd
BSDD037_83.4_84	tm	Mafic granulite (gneiss)	Jinkas	Fresh	nd
BSRC1451_75_76	tm	Mafic granulite (gneiss)	Olympia	Fresh	Actinolite, ferroactinolite, chrysotile
BSDD047_30.82_32.89	ts	Speckled mafic granulite (gneiss)	Jackson	Moderately weathered	Organic fibres detected
BSDD042_28_30	ts	Speckled mafic granulite (gneiss)	Jinkas	Partially weathered	nd
BSDD022_4.4_4.8	md	Dolerite	Jinkas	Moderately weathered	nd
BSDD022_18_18.5	md	Dolerite	Jinkas	Weakly weathered	nd
BSDD022_47.3_47.8	gm	Monzogranite	Jinkas	Fresh	nd
BSDD040_64_66	gm	Monzogranite	Jinkas	Fresh	nd
BSDD009_103.5_103.8	xx	Calc-silicate rock	Dingo	Fresh	nd
BSDD033_22_24	cy	Clay	Dingo	Strongly weathered	nd
BSDD002_40_42	cy	Clay	Jinkas	Completely weathered	nd

Note: nd – not detected.

Figure 4.24: Fibrous mineral sample locations by (a) results (b) screened samples



4.2 Ore-grade materials

Fourteen ore-grade samples were selected for materials characterisation, described previously in Section 3.4.1. The results are given in the following subsections.

4.2.1 Mineralogy

Five ore-grade samples were selected for XRD analysis to identify the mineral assemblages present. These included samples from biotite garnet gneiss (tbg), mafic granulite (gneiss) (tm), and intermediate granulite (gneiss) (ti) lithologies within the Jinkas, Jackson and Dingo pits. The mineralogical results are presented in Table 4.13.

The ore-grade samples exhibited mineralogical assemblages similar to those of waste samples with comparable lithology. Pyrite was present all samples and pyrite contents ranged from <0.5 wt% to 1 wt%, with the exception of the mafic granulite (tm) sample (13 wt%). Pyrrhotite was detected in three mafic granulite (tm) samples (1 wt% to 4 wt%).

Minor sulfate minerals were identified, including gypsum (up to 1 wt% in two samples) and jarosite (1 wt%) in a mafic granulite (tm) sample.

Carbonate minerals were recorded in four of the five ore samples. Calcite (<0.5 wt% to 1 wt%) was identified in three samples (tm, tbg, ti) and dolomite was identified in one tbg sample (<0.5%). Other trace carbonates identified included rhodochrosite (<0.5 wt% to 1 wt%), siderite (0.5 wt% to 1 wt%) and magnesite (<0.5 wt%).

Phyllosilicate minerals recorded included chlorite, epidote, kaolin, mica, talc, typically in contents from <0.5 wt% to 4 wt%. Amphibole was identified in four samples (up to 4 wt%). Quartz was the dominant silicate mineral, occurring in all samples with contents ranging from 12 wt% to 43 wt%. Sodium calcium plagioclase contents ranged from 15 wt% to 33 wt%. Ilmenite and magnetite were the most prevalent oxides with contents ranging between <0.5 wt% and 5 wt%.

Amorphous content ranged between 9 wt% and 17 wt%.

Table 4.13: Mineralogical assessment results (by XRD) – ore grade

Mineral	Approximate formula	Pit	Jinkas	Jinkas	Dingo	Jackson	Jackson
		Drill hole	BSDD031	BSDD001	BSDD009	BSDD047	BSDD048
		Depth interval (mbcl)	66.87–67.87	80–81.5	89–89.5	27.69–28.47	51.81–52.37
		Weathering class	fr	fr	fr	mw	fr
		Lithology code	tbg	tm	tm	tm	ti
Pyrite	FeS ₂	Sulfide	0.5	1	0.5	13	0.5
Pyrrhotite	Fe _(1-x) S _x (x=0-0.2)			1	4		1
Jarosite	KFe ₃ (SO ₄) ₂ (OH) ₆	Sulfate				1	
Gypsum	CaSO ₄ .2H ₂ O			0.5		1	
Calcite	CaCO ₃	Carbonate	0.5		1		0.5
Dolomite	Ca(Fe,Mg)(CO ₃) ₂		0.5				
Rhodochrosite	MnCO ₃		0.5	1	1		0.5
Siderite	FeCO ₃			0.5			1
Magnesite	MgCO ₃			0.5			
Chlorite ¹	(Fe,Al,Mg,Li,Ni) ₆ (Si,Al) ₄ O ₁₀ (OH) ₈	Phyllosilicates	1	1	2		1
Epidote	(Ca,Al) ₂ (Al,Fe) ₃ Si ₃ O ₁₂ OH			2			1
Kaolin ¹	Al ₂ Si ₂ O ₅ (OH) ₄						1
Mica ¹	(K,Ca,Na,Li)(Al,Mg,Fe) ₂ (Si,Al) ₄ O ₁₀ (OH) ₂		4	1		0.5	0.5
Talc ¹	(Fe,Al,Mg,Ni) ₃ Si ₄ O ₁₀ (OH) ₂			0.5		0.5	
Amphibole	e.g.(Na,Ca,Li) ₂ (Fe,Mg,Al) ₅ (Si,Al) ₈ O ₂₂ (OH) ₂	Silicate		3	4	3	0.5
Quartz	SiO ₂		32	17	43	12	15
Meionite	Ca ₄ Al ₆ Si ₆ O ₂₄ CO ₃			3			1
Garnet	(Mg,Fe,Ca,Mn,Li) ₃ (Al,Fe) ₂ (SiO ₄) ₃		2		2		5
Potassium feldspar	KAlSi ₃ O ₈		18	2	1	1	18
Clinopyroxene	(Ca,Mg,Fe,Na)(Fe,Al,Mg)Si ₂ O ₆			12	8	17	14
Wollastonite	Ca ₃ Si ₃ O ₉		1		1		
Sodium calcium plagioclase	(Na,Ca)(Al,Si) ₂ Si ₂ O ₈		28	33	15	17	24
Orthopyroxene	(Ca,Fe,Mg) ₂ Si ₂ O ₆		4	9	5		
Goethite	FeO(OH)	Oxides/oxyhydroxides				1	
Ilmenite	FeTiO ₃		0.5	2	1	0.5	0.5
Magnetite	Fe ₃ O ₄		0.5	1	3	5	2
Apatite	(Ca,Mn,Ba,Pb,REE) ₅ (PO ₄) ₃ (OH,F,Cl)	Phosphate		0.5		1	0.5
Amorphous content ²				11	9	28	16
Total				100	100	100	100

Notes:

¹ For confirmation of the clay mineralogy, a clay separation followed by analysis of oriented clay mounts would be required.

² The amorphous content may contain some of the more poorly crystalline clay phases.

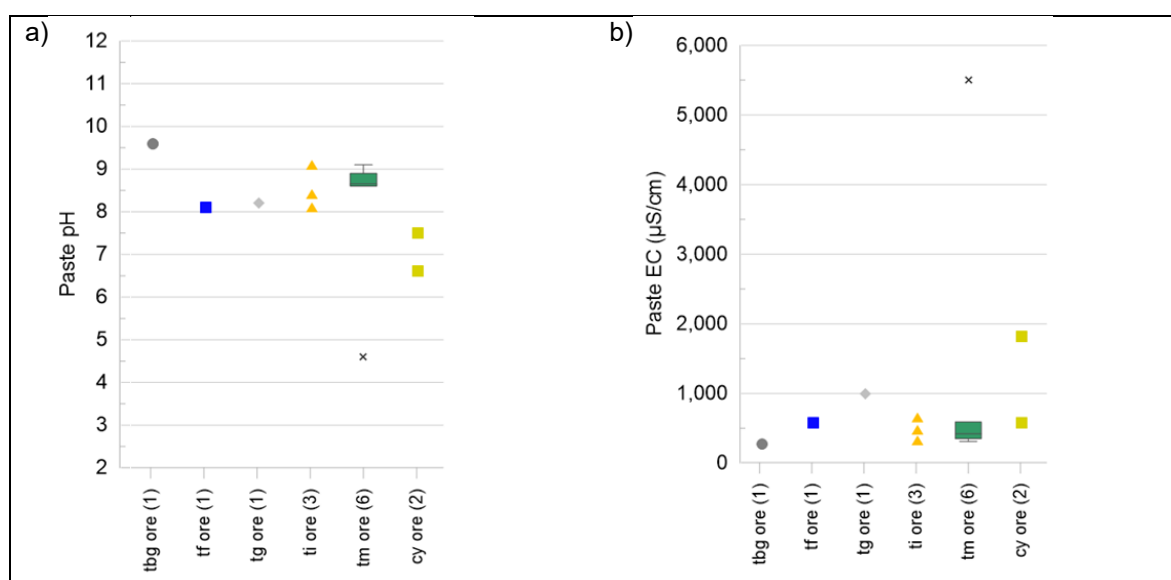
4.2.2 Paste pH and electrical conductivity

A full statistical summary and complete results are available in Appendix E.

The paste pH of the ore-grade samples ranged from pH 4.6 (tm) to pH 9.6 (tbg) (Figure 4.25a). Most ore-grade samples (11 of 14) recorded alkaline paste pH values above pH 8.

Paste EC values ranged from 250 $\mu\text{S}/\text{cm}$ (tbg) to 5,500 $\mu\text{S}/\text{cm}$ (tm). Most samples (12 of 14) recorded EC values below 1,000 $\mu\text{S}/\text{cm}$ (Figure 4.25b). The highest EC values (above 1,000 $\mu\text{S}/\text{cm}$) were observed for mafic granulite gneiss (tm) and clay (cy) lithologies (Table 4.14).

Figure 4.25: Paste pH and paste EC results – ore-grade



Notes: The sample count for each lithology is shown in brackets. The horizontal lines shown in the box-and-whisker 'boxes' equate to the median value within the series, and the upper and lower limits of the boxes equate to the 75th and 25th percentiles of the data, respectively. Whiskers are defined by 1.5-times the interquartile range. The 'x' indicates outliers. Lithologies with fewer than six samples are plotted as individual data points rather than boxes and whiskers.

Table 4.14: Summary of ABA results (average values) – ore-grade samples

Lithology code	Lithology	Sample count	Paste pH	Paste EC	Total S	NAG pH	NAG to pH 4.5	NAG to pH 7.5	ANC	MPA	NAPP
			s.u.	µS/cm	%	s.u.	kg H ₂ SO ₄ /t				
tbg	Biotite garnet gneiss	1	9.6	250	0.2	4.2	<0.5	2.1	13	6.1	-6.9
tf	Felsic granulite (gneiss)	1	8.1	560	0.21	4.7	<0.5	1	8.6	6.4	-2.2
tg	Garnet (dominant) quartz granulite (gneiss)	1	8.2	980	0.23	5.7	<0.5	1.1	10	7	-3
ti	Intermediate granulite (gneiss)	3	8.5	460	0.6	3.4	4.2	9.5	12	18	6
tm	Mafic granulite (gneiss)	6	8.1	1,300	3.2	2.6	55	68	16	97	81
cy	Clay	2	7.1	1,200	0.12	5.4	0.53	2.1	1.8	3.6	1.8

Note: where there is only one sample, the reported value is given.

4.2.3 Acid and metalliferous drainage potential

Summary results from ABA and the NAG testing for the lithology groups are presented in Table 4.14. The results are discussed further in the following section. Full analytical results and additional statistics are included in Appendix E.

Acid potential

Total sulfur (by LECO) content ranged from 0.037% TS in a clay (cy) sample to 8.8% TS in a mafic granulite gneiss (tm) sample. The TS contents were higher in the ore-grade samples (relative to the waste rock) as expected due to the higher degree of sulfide mineralisation.

Total sulfur content above 0.1% was recorded for 6 of 14 ore-grade samples. The highest sulfur contents were recorded in 6 mafic granulite gneiss (tm) samples (1% to 8.8% TS).

Sulfur speciation testwork was conducted on 8 of 14 ore-grade samples (Table 4.15; Figure 4.26):

- Sulfide-S was the dominant sulfur species for all samples tested, with content ranging from 0.084 wt% to 5.5 wt%, and most datapoints plotting close to the equivalence line.
- Sulfate-S content ranged from 0.015% to 1.1% and was generally a low proportion of the total sulfur (2% to 33%). An exception was a tbg sample where the sulfate-S was calculated to be 0.16% (75% of TS), in apparent conflict with the outcome of CRS testing for this sample which suggested that 80% of the sulfur was sulfide-S. These results are interpreted as the possible presence of pyrrhotite, which can be dissolved in HCl. It is acknowledged however that no pyrrhotite was recorded by XRD (with a detection limit of <0.5 wt%).
- Calculated MPA values range from 1.1 kg H₂SO₄/t to 270 kg H₂SO₄/t (average 47.7 kg H₂SO₄/t).

Table 4.15 includes calculated sulfide-S, sulfate-S, and total sulfur content calculated from the sulfur-bearing minerals identified by XRD analysis (Section 4.2.1) – the results indicate reasonable agreement between the assessment methods (given the differences in detection limits and analytical limitations, discussed previously in Section 4.1.4).

Figure 4.26: Ore-grade samples sulfur speciation plots (a) sulfide-S (CRS) (b) sulfate-S (HCl)

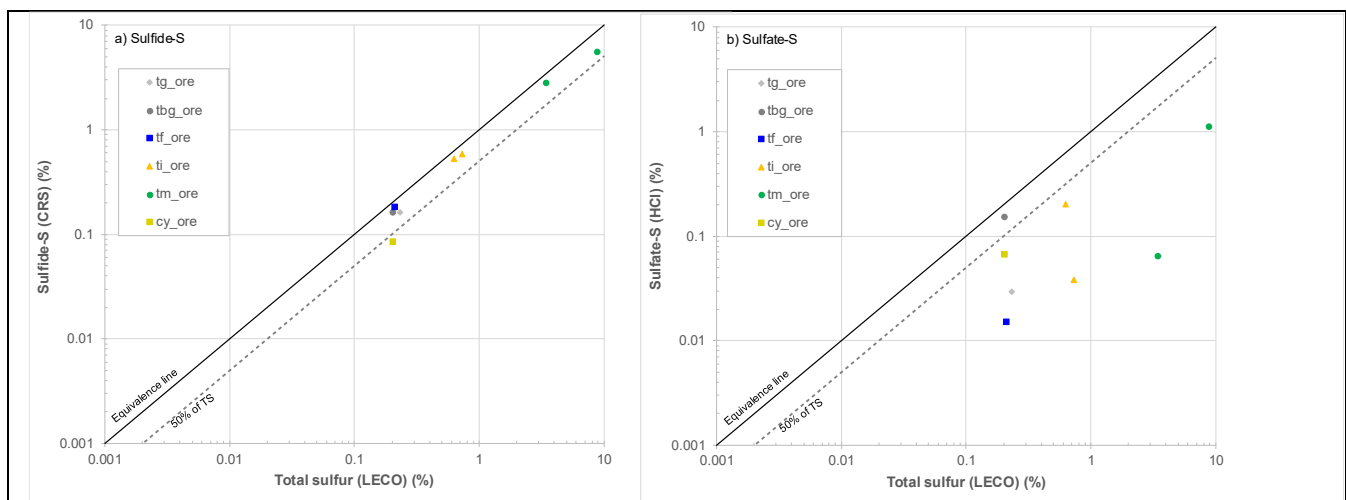


Table 4.15: Sulfur speciation results – ore-grade

SRK ID	Pit	Weathering class	Lithology code	LECO	CRS	SHCI	MPA	XRD			Pyrite	Pyrrhotite	Jarosite	Gypsum
				Total S	Sulfide-S	Sulfate-S		Total S	Sulfide-S	Sulfate-S	FeS ₂	Fe _(1-x) S _x (x=0-0.2)	KFe ₃ (SO ₄) ₂ (OH) ₆	CaSO ₄ .2H ₂ O
				%	%	%		%	%	%	Sulfide mineral (wt%)		Sulfate mineral (wt%)	
BSDD031_66.87_67.87_ore	Jinkas	Fresh	tbg	0.2	0.16	0.15	6.1	<i>0.27</i>	<i>0.27</i>	nd	<i>0.5</i>	-	-	-
BSDD047_36.12_36.62_ore	Jackson	Moderately weathered	tf	0.21	0.18	0.02	6.4	-	-	-	-	-	-	-
BSDD001_24.5_25_ore	Jinkas	Partially weathered	tg	0.23	0.16	0.03	7	-	-	-	-	-	-	-
BSDD048_51.81_52.37_ore	Jackson	Fresh	ti	0.62	0.53	0.2	19	0.66	0.66	nd	<i>0.5</i>	1	-	
BSDD024_60_60.8_ore	Jinkas	Fresh	ti	0.46	-	-	14	-	-	-	-	-	-	-
BSDD005_59_59.5_ore	Jinkas	Fresh	ti	0.73	0.58	0.04	22	-	-	-	-	-	-	-
BSDD001_80_81.5_ore	Jinkas	Fresh	tm	1	-	-	31	1	0.93	<i>0.12</i>	1	1	-	<i>0.5</i>
BSDD009_89_89.5_ore	Dingo	Fresh	tm	3.4	2.8	0.064	104	1.9	1.9	nd	<i>0.5</i>	4	-	-
BSDD047_27.69_28.47_ore	Jackson	Moderately weathered	tm	8.8	5.5	1.1	270	7.3	6.9	0.36	13	-	1	1
BSDD008_51.73_52.73_ore	Dingo	Fresh	tm	1.3	-	-	40	-	-	-	-	-	-	-
BSDD009_100_100.5_ore	Dingo	Fresh	tm	2.2	-	-	67	-	-	-	-	-	-	-
BSDD009_98_98.5_ore	Dingo	Fresh	tm	2.4	-	-	74	-	-	-	-	-	-	-
BSDD048_25.4_26.05_ore	Jack	Strongly weathered	cy	0.2	0.08	0.07	6.1	-	-	-	-	-	-	-

Notes: nd – not detected; results reported below the analytical LOD are given in grey italicised font.

Acid neutralising capacity

ANC values for ore-grade samples were generally low, ranging from below the LOD (<0.5 kg H₂SO₄/t) to a maximum of 26 kg H₂SO₄/t (Table 4.16).

Carbon speciation analysis was conducted on six ore-grade samples (with ANC values ranging from 8.6 to 22 kg H₂SO₄/t).

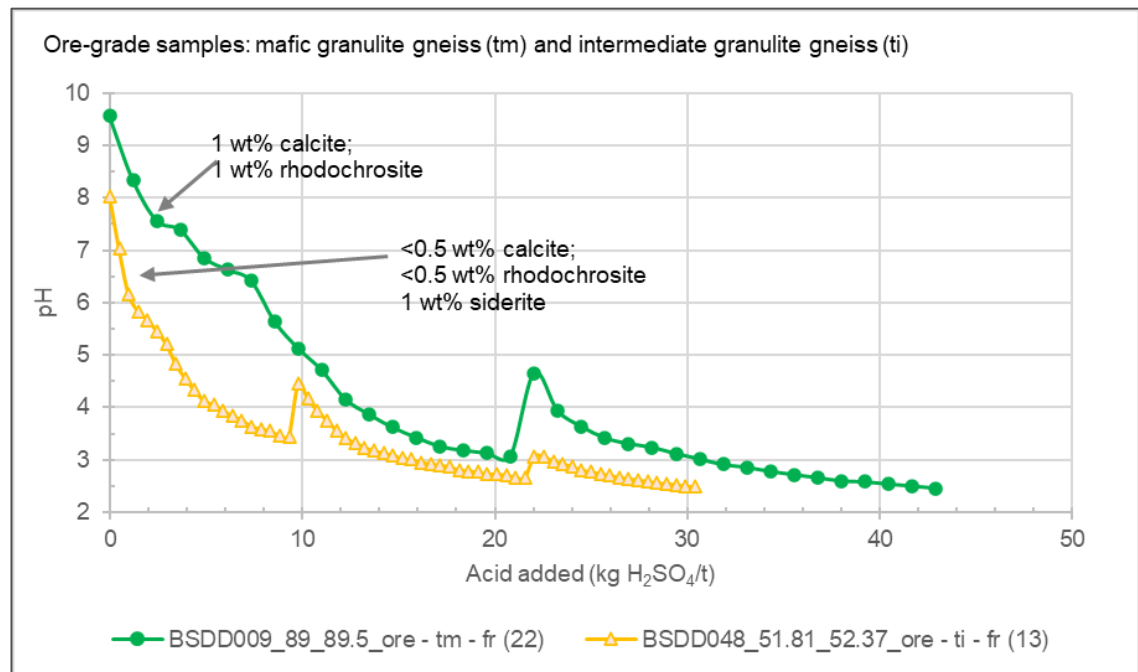
TC content was low (0.011% to 0.15% TC) with TIC ranging from <0.01% to 0.14% and TOC content below 0.05% in all samples.

Two ore-grade samples were submitted for ABCC testing. The ABCC plots are shown in Figure 4.27 and demonstrate limited buffering capacity above pH 4.5, consistent with the low ANC values of the samples (<25 kg H₂SO₄/t).

Table 4.16 summarises the measured ANC values, ABCC-derived available ANC (or ‘effective ANC’) and calculated CarbNP from TIC and mineralogy. Complete results are provided in Appendix H.

The samples displayed limited buffering and the available ANC (inferred from ABCC to pH 4.5) is lower than indicated by the total ANC measurement (31% and 50% of the total ANC (Table 4.16).

Figure 4.27: Acid buffering characteristic curve plots (ore-grade)



Notes: Legend format indicates drill hole ID, depth range, grade, lithology code, weathering code and ANC is given in brackets. Where available, XRD mineralogy results have been annotated on the plots. Small steps evident on some curves are due to the ABCC test being suspended overnight in the laboratory.

Table 4.16: Summary of carbonate neutralisation potential results – ore grade

SRK ID	Pit	Weathering class	Lithology	Measured	TIC	TIC	ABCC		XRD	Calcite	Dolomite
				ANC		CarbNP	ANC to pH 4.5		CarbNP	CaCO ₃	Ca(Fe,Mg)(CO ₃) ₂
				kg H ₂ SO ₄ /t	%	kg H ₂ SO ₄ /t	kg H ₂ SO ₄ /t	% of ANC (effective ANC)	kg H ₂ SO ₄ /t		
BSDD031_66.87_67.87_ore	Jinkas	Fresh	tbg	13	0.01	0.8	-		10	0.5	0.5
BSDD048_51.81_52.37_ore	Jackson	Fresh	ti	13	0.14	11	4	31%	4.9	0.5	nd
BSDD001_80_81.5_ore	Jinkas	Fresh	tm	13	-	-	-		nd	nd	nd
BSDD009_89_89.5_ore	Dingo	Fresh	tm	22	0.12	9.8	11	50%	9.8	1	nd
BSDD047_27.69_28.47_ore	Jackson	Moderately weathered	tm	0.5	-	-	-		nd	nd	nd

Notes: nd – not detected. CarbNP values calculated from XRD results have been calculated based on reported calcite and dolomite contents only.

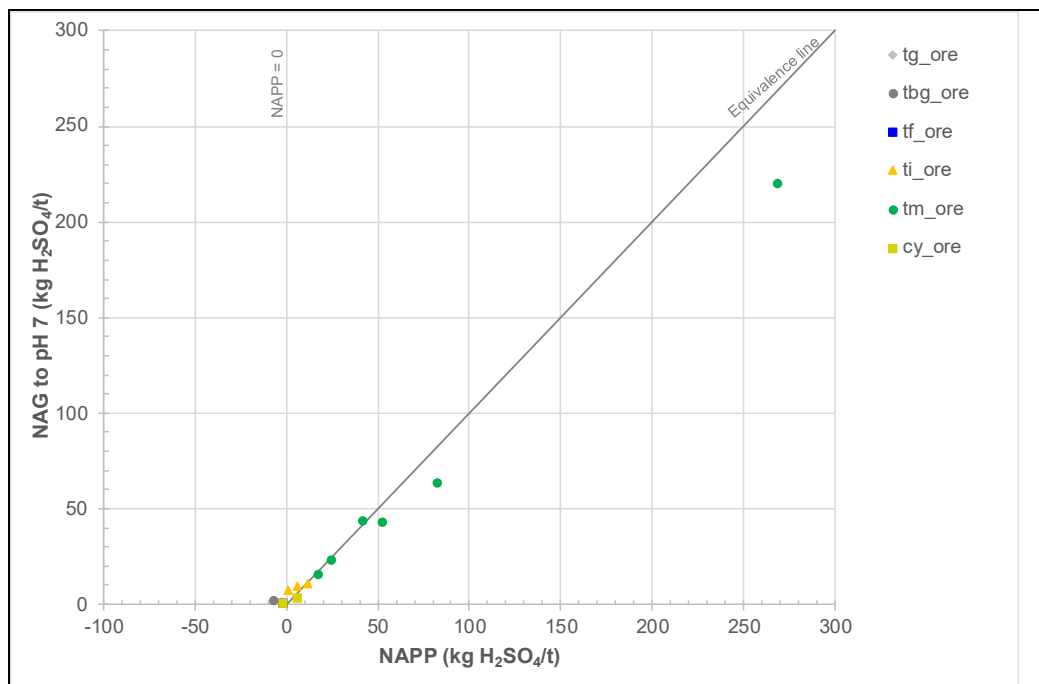
4.2.4 Net acid producing potential

NAPP values for the ore-grade samples ranged from -6.9 kg H₂SO₄/t to 269 kg H₂SO₄/t. Most samples (10 out of 14) have positive NAPP values, indicating the acid generating potential is greater than the neutralising potential for these samples (MPA greater than ANC). These samples produced acidic NAG solutions (NAG pH 2 to 4.1); the most acidic NAG solution was generated from the tm sample with the highest TS and CRS contents and recorded a NAG acidity (to pH 7) of 220 kg H₂SO₄/t.

Four samples (0.04% to 0.23% TS) with negative NAPP values generated NAG solutions with NAG pH values ranging from pH 4.1 to pH 6.7 with limited acidity (up to 2.1 kg H₂SO₄/t).

Overall, NAPP values correlated reasonably well with corresponding NAG acidities at low sulfur contents (<2.2% TS) (Figure 4.28). However, the NAG acidities (to pH 7) of the higher sulfide-S samples (>2.3% TS) were slightly lower than calculated NAPP values which suggests that the sulfides may not have been fully oxidised in the single-addition NAG tests.

Figure 4.28: Plot of NAG acidities by NAPP values for ore-grade samples



4.2.5 Sample classification

The geochemical classifications of the ore-grade samples are shown in Figure 4.29 and summarised in Table 4.17.

Based on AMIRA classification criteria the samples classify as:

- NAF – 3 samples (tf, cy, tg); including 1 NAF-Barren sample (cy)
- UC(PAF) – 1 sample (tbg)
- PAF – 10 samples (cy, ti, tm), including 3 PAF-LC samples (cy, ti; with NAPP values below 5 kg H₂SO₄/t).

The MEND classifications of the samples were reasonably consistent with the AMIRA classification; 10 samples classed as PAF and 4 samples classed as UC. The UC samples were classed as NAF or UC(PAF) using the AMIRA approach. The tm (mafic granulite) samples (1% to 8.8% TS) class as PAF under both classification schemes.

Based on AMIRA classification, if a lower effective ANC is assumed then 11 samples class as PAF (including 4 PAF-LC samples).

Figure 4.29: Ore-grade classification (AMIRA) using a) total ANC and b) 25% ANC

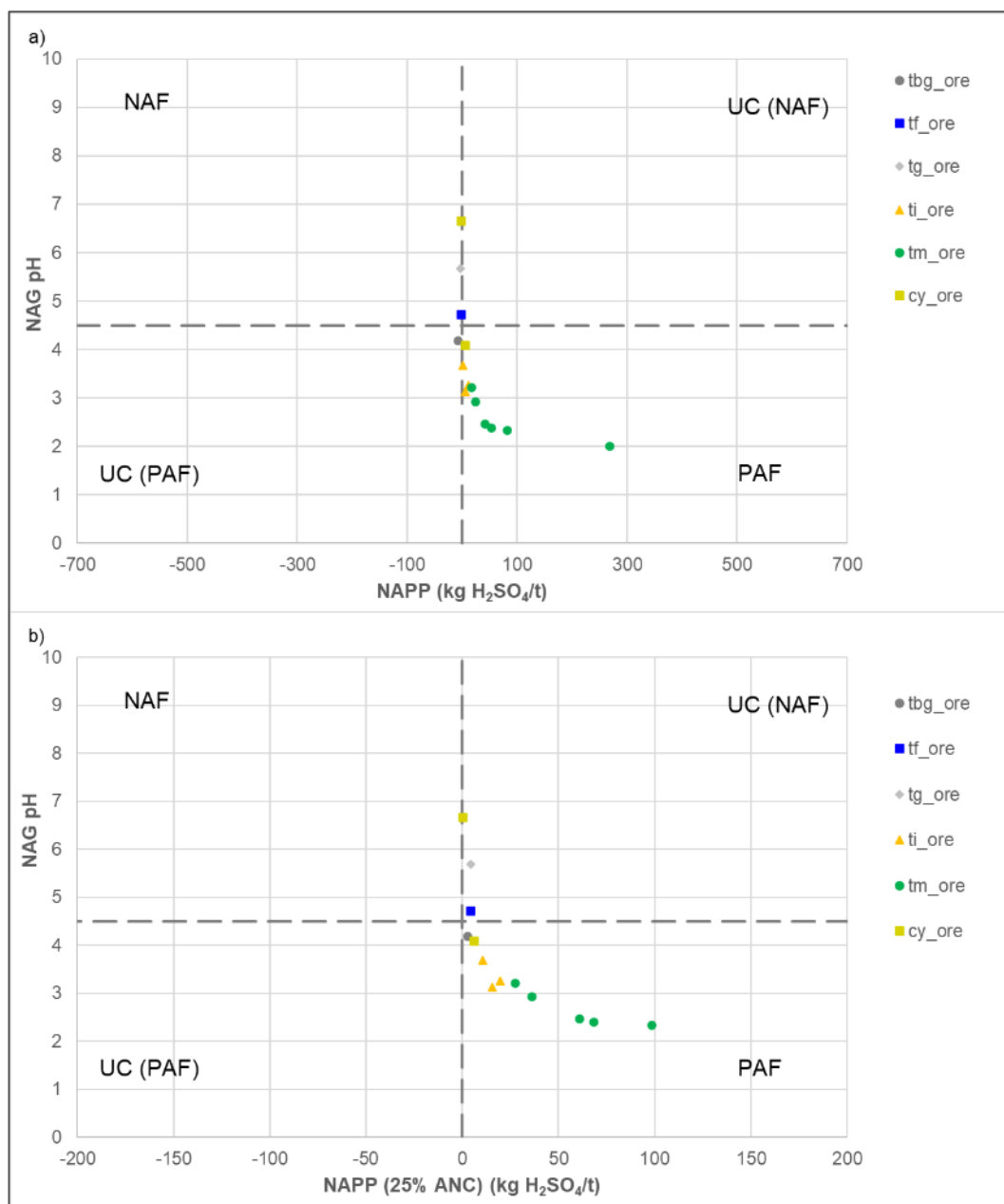


Table 4.17: Geochemical classification summary (ore-grade)

Rock type	Description	No. of samples	AMIRA						MEND		
			NAF-Barren	NAF	UC(NAF)	UC(PAF)	PAF-LC	PAF	NAF	UC	PAF
tbg	biotite garnet gneiss	1	-	-	-	1	-	-	-	1	-
tf	felsic granulite (gneiss)	1	-	1	-	-	-	-	-	1	-
tg	garnet (dominant) quartz granulite (gneiss)	1	-	1	-	-	-	-	-	1	-
ti	intermediate granulite (gneiss)	3	-	-	-	-	2	1	-	-	3
tm	mafic granulite (gneiss)	6	-	-	-	-	-	6	-	-	6
cy	clay	2	1	-	-	-	1	-	-	1	1
Total		14	1	2	0	1	3	7	0	4	10

4.2.6 Multi-element chemical assays

A summary of the multi-element results is presented in Table 4.18 for key parameters and complete results are given in Appendix F.

Elements present in enriched concentrations (where $GAI \geq 3$) in more than 10% of samples include Ag, Bi, Re, S, Se, Te, W, and N. Key observations are as follows:

- Silver (Ag) enrichment was recorded in 21% of ore-grade samples, comprising 1 mafic granulite gneiss (tm) sample and 2 clay (cy) samples. The highest Ag concentration, 1.5 mg/kg, was recorded in a completely weathered clay (cy) sample.
- One moderately weathered mafic granulite (tm) sample recorded the maximum concentrations of Bi, Re, S, Se, and Te in the dataset.
- Sulfur (S) was enriched in 64% (9 of 14) of ore-grade samples.
- Selenium (Se) showed enrichment in 50% of ore-grade samples, including 5 tm samples and 1 sample from each of garnet dominant quartz granulite gneiss (tg), and clay (cy).
- Detectable concentrations of tellurium (Te) were recorded for only 5 samples, including 4 tm samples and 1 cy sample.
- Tungsten (W) was enriched in 50% of the ore-grade samples, including all 3 ti samples, both cy samples, and 1 sample from each of tm and felsic granulite gneiss (tf) lithologies.
- Nitrogen was enriched in 86% (6 of 7) of samples, including samples from all lithologies except tf. The nitrogen results have been queried with the laboratory.

Table 4.18: Summary of multi-element results and element enrichment (ore-grade)

Element		Ag	Bi	Re	S	Se	Te ¹	W	Total Nitrogen
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Average crustal abundance		0.07	0.048	0.0004	260	0.05	0.005	1	25
GAI = 3 threshold		0.84	0.58	0.0048	3,120	0.6	0.06	12	300
Sample count		14	14	14	14	14	14	14	7 ²
Statistics for all ore-grade samples	Minimum	0.07	<i>0.01</i>	<i>0.002</i>	199	<i>0.5</i>	<i>0.2</i>	0.3	260
	Median	0.20	0.11	0.002	6,641	0.55	<i>0.2</i>	12	570
	Average	0.42	0.17	0.0024	14,067	0.79	0.34	35	586
	Maximum	1.5	0.8	0.006	75,875	2.2	1.2	136	930
Lithology	Sample count by lithology	Count of samples with GAI ≥3 per lithology							
tbg	1	0	0	0	0	0	1	0	1
tf	1	0	0	0	0	0	1	1	0
tg	1	0	0	0	0	0	1	0	1
ti	3	0	0	0	3	1	3	3	1
tm	6	1	1	1	6	5	6 (4)	1	2
cy	2	2	0	0	0	1	2 (1)	2	1
Total ore-grade samples with GAI≥3		3	1	1	9	7	14 (5)	7	6
Proportion of ore-grade samples with GAI≥3		21%	7%	7%	64%	50%	100% (36%)	50%	86%

Notes: Light orange highlighting indicates concentrations above GAI = 3 threshold; light blue highlight indicates elements enriched in more than 10% of samples (relative to the number of samples per lithology); grey italicised text indicates concentrations at LOD.

¹ The number of samples where enrichment is indicated is based on detectable concentrations of Te as given in brackets.

² A subset of seven ore-grade samples underwent analysis for total nitrogen. The nitrogen concentrations appear high and have been queried with the laboratory.

4.2.7 Radioactive material assessment

Uranium and thorium concentrations (as mg/kg) were measured in the multi-element suite (reported in Section 4.2.6).

The maximum calculated U-238 activity was 0.018 Bq/g and the maximum calculated Th-232 activity was 0.035 Bq/g (Table 4.19). It is not considered necessary to conduct any further radioactivity assessments.

Table 4.19: Radioactive materials summary (ore-grade)

No. of samples	Statistic	U (mg/kg)	U-238 (Bq/g)	Th (mg/kg)	Th-232 (Bq/g)
14	Minimum	0.05	0.00063	0.11	0.00045
	Median	0.38	0.0048	2.0	0.0084
	Average	0.54	0.0067	2.6	0.011
	Maximum	1.4	0.018	8.6	0.035

4.2.8 Element leachability

The leach extraction laboratory results are provided in Appendix G. A summary of the leach extraction laboratory results for key parameters is shown in Table 4.20.

The final pH of leachate solutions from ore-grade samples varied widely, ranging from acidic (pH 2.5) to alkaline (pH 8.4). Mafic granulite gneiss (tm) leachates generated solutions with both the minimum and maximum leach pH, including the only acidic leachate (pH 2.5) from the sample with 8.8% TS.

EC ranged from fresh (EC 88 µS/cm) to highly saline (8,500 µS/cm), the latter recorded by the acidic tm sample.

The acidic leachate (from the tm sample) contained maximum concentrations of most trace elements – including Al, As, Cd, Cr, Co, Cu, Fe, Ni, and Zn – often several orders of magnitude greater than in circum-neutral or alkaline pH leachates. Manganese (Mn) was an exception, with the maximum concentration (39 mg/L) recorded in a felsic granulite gneiss (tf) leachate. Higher dissolved concentrations of Mn (4.1 mg/L to 39 mg/L) and Fe (15 mg/L) were recorded in a subset of the ore leachates with the near-neutral to alkaline pH range (pH 6 to pH 8). At this pH range, it is possible that these concentrations are attributable to the presence of colloids within the solutions.

Total nitrogen was detectable in eight of the nine ore-grade leachates analysed for nitrogen species, recording a maximum of 1.3 mg/L (average 0.51 mg/L).

Dissolved concentrations of Sb, Cs, In, Pb, Nb, Re, Ag, Tl, Sn, and Zr were below detection limits.

Table 4.20: Summary of ore-grade leach analysis results for selected parameters (average values)

Lithology code			tbg	tf	ti	tm	cy	ANZECC	
Lithology			Biotite garnet gneiss	Felsic granulite (gneiss)	Intermediate granulite (gneiss)	Mafic granulite (gneiss)	Clay	Species limit of protection (95% SLP)	Livestock drinking water
Sample count			n = 1	n = 1	n = 2	n = 3	n = 2		
Parameter	Units	LOD	-	-	Average	Average	Average		
pH ¹	pH units		8.1	6.3	7.2	3.0	7.1	6.5–8.5 ²	6.5–8.5 ²
EC	µS/cm	2	88	610	350	3,013	1,075		
Total alkalinity	mg/L	5	23	9.5	20	34	39		
Acidity	mg/L	5	5.4	9.3	6	1,803	10		
Ca	mg/L	0.5	0.8	27	23	149	2.7		1,000
Mg	mg/L	0.5	1.2	36	10	50	13		500
K	mg/L	0.5	8.2	9.3	6.9	2	2.9		
Na	mg/L	0.5	7.7	39	11	8	149		
Cl	mg/L	1	2.6	5.7	10	5.4	232		
SO ₄	mg/L	1	11	350	105	2,861	99		500
F	mg/L	0.1	0.3	0.2	0.27	0.2	0.48		2
Al	mg/L	0.01	0.33	0.28	0.041	60	0.2	0.055 ³	5
Sb	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.009 ³	
As	mg/L	0.001	<0.001	<0.001	0.0012	0.0043	<0.001	0.013	0.025
Be	mg/L	0.0005	<0.0005	<0.0005	<0.0005	0.004	<0.0005		0.06
B	mg/L	0.02	<0.02	<0.02	<0.02	0.029	0.21	0.94	5
Cd	mg/L	0.0001	<0.0001	0.0005	0.00034	0.0044	<0.0001	0.0002	0.01
Cr	mg/L	0.001	<0.001	0.0011	<0.001	0.3	0.0014	0.001	0.05
Co	mg/L	0.001	<0.001	0.12	0.041	0.22	0.0012	0.0014 ³	1
Cu	mg/L	0.001	<0.001	0.048	0.0069	15	0.0094	0.0014	1
Fe	mg/L	0.01	0.53	0.3	0.12	872	0.35	0.3	
Pb	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0034	0.1
Mn	mg/L	0.001	0.38	39	7.5	13	0.13	1.9	10
Hg	mg/L	0.00005	-	-	-	-	-	0.0006	0.002
Mo	mg/L	0.001	0.039	<0.001	0.0039	0.052	0.01	0.034 ³	0.01
Ni	mg/L	0.001	0.002	0.32	0.12	0.95	0.0035	0.011 ³	1
Se	mg/L	0.001	<0.001	0.0014	<0.001	0.0028	0.0022	0.011	0.02
Ag	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.00005 ³	
Tl	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.00003 ³	
U	mg/L	0.001	<0.001	<0.001	<0.001	0.0032	<0.001	0.0005 ³	0.2
V	mg/L	0.001	0.0031	<0.001	<0.001	0.19	0.0026	0.006 ³	0.1
Zn	mg/L	0.001	0.0023	0.09	0.038	0.4	0.0036	0.008	20
Si	mg/L	0.1	8.1	13	6.1	14	46		
Total N	mg/L	0.1	0.36	0.52	0.9	0.42	0.31		
Total P	mg/L	0.01	0.39	<0.01	0.011	0.012	0.015		

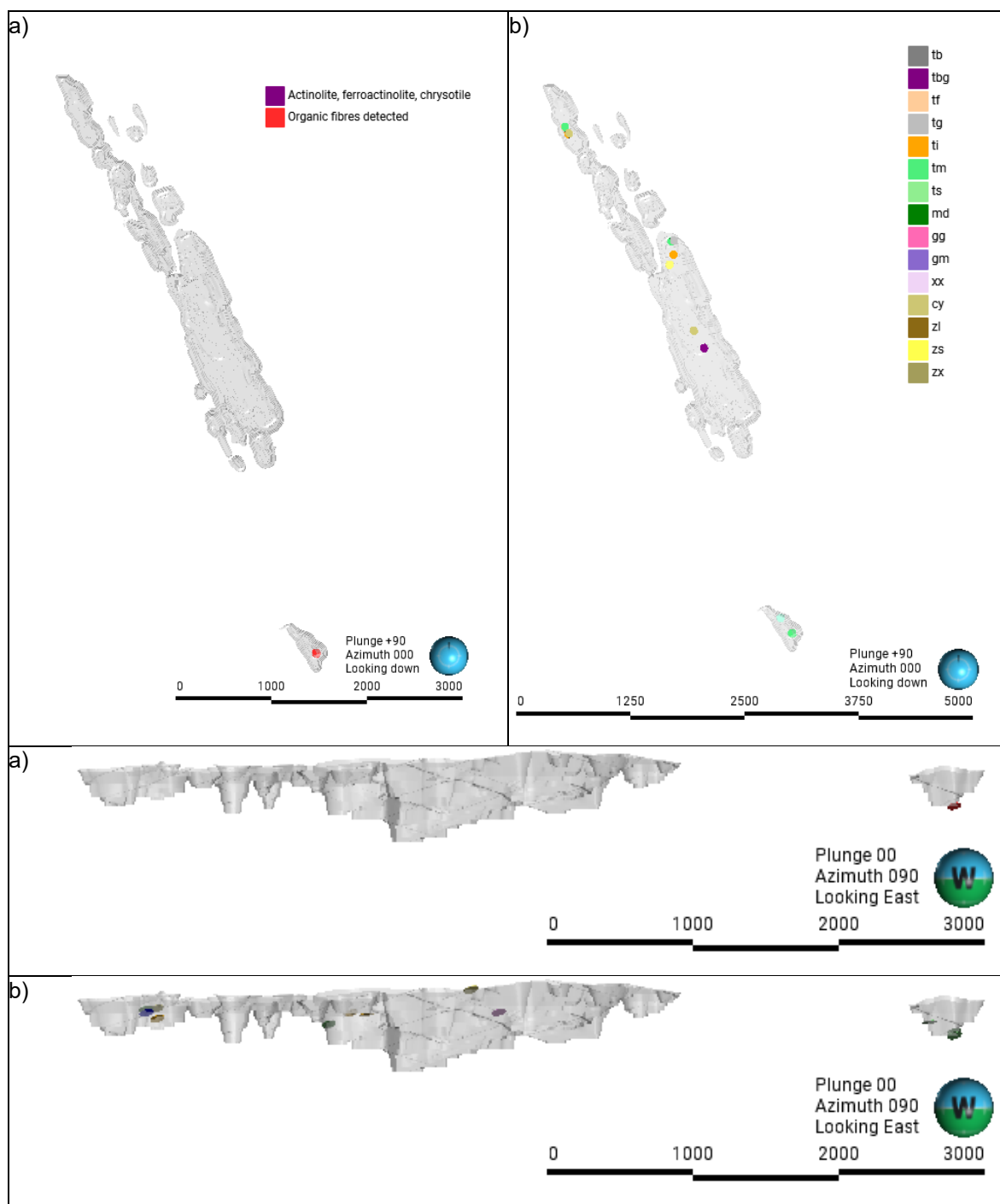
Notes: Blue shading indicates values that exceed the ANZECC 95% SLP guideline value; bold type indicates values that exceed the livestock drinking water guideline value. Statistics have been calculated using LOD value.

¹ Hydrogen ion concentrations were used to calculate statistical summaries involving pH measurements.
² pH values outside the indicated range are considered exceedances of the guideline value.
³ Low reliability guideline value (ANZECC and AMRCANZ, 2000).

4.2.9 Fibrous minerals

One ore-grade sample was selected for mineral fibre screening. No unknown mineral fibres were identified in the sample. Organic fibres were detected in a fresh mafic granulite (tm) sample from the Dingo deposit (BSDD009_100_100.5) (Figure 4.30). The laboratory certificates are provided in Appendix J.

Figure 4.30: Fibrous mineral sample locations by (a) result (b) assessed samples



5 Preliminary waste rock inventory and management

5.1 Preliminary waste rock inventory

The outcomes of the sub-surface materials characterisation have been used to develop a preliminary waste rock inventory for the KGP. Table 5.1 presents the preliminary inventory as a function of the lithological groupings adopted in this assessment. The table includes a summary of the geochemical and physical characteristics, materials classifications, and estimated volumes to be mined.

The inventory outlines potential areas of concern, including:

- potential to generate acid or neutral metalliferous drainage
- erosion risk
- presence of fibrous minerals.

5.2 Waste rock management recommendations

Specific management strategies may be required to minimise potential impacts during mining, and to support rehabilitation and closure outcomes for the materials identified to have problematic characteristics.

SRK understands that the final mine plans are yet to be developed, and the preliminary waste rock schedules from the KGP project are likely to be revised prior to mining. At that time, the quantities of the different AMD-classed materials should be generated from the block model to guide the development of a mine waste management plan.

The following sections provide advice relating to the management of waste rock materials at KGP, to assist with the development of waste management strategies for the project. The development of practical waste classification criteria suitable for operational implementation will require input from Ausgold geologists and mining engineers.

5.2.1 NAF-classed waste rock

- Most waste rock samples assessed (85%) were classified as NAF if the measured ANC is assumed to be effective (Table 5.1). The proportion of NAF samples is lower (around 60%) if conservative assumptions are made with respect to readily available ANC (i.e. if effective ANC is assumed to be 25% of total ANC).
- Further geochemical assessment (kinetic free-draining column tests) are required to better understand the effective ANC of the waste materials.
- Sulfur cut-off thresholds should be developed as part of the forward works program. The sulfur cut-off together with other waste rock management criteria should then be incorporated in the mining block model (where sufficient sulfur XRF assay or sulfide logging data are available) to identify the quantities and locations of materials at risk of generating acid (PAF and UC classed materials). Preliminary sulfur cut-off values estimated from the available static test results suggest that a value of 0.2% TS may be suitable for the waste rock lithological units. The sulfur cut-off threshold values will need to be verified using kinetic testing methods.

- A proportion of NAF materials may have the potential to generate saline or neutral metalliferous drainage (i.e. those samples with an excess of neutralisation capacity but higher sulfur content). Development of suitable waste classification criteria are required to identify NAF-NMD classed materials – for example, revised sulfur cut-off values and other classification thresholds (e.g. NPR) based on supplemental geochemical data (including kinetic data and intrinsic oxidation rate measurements). The required supplemental geochemical data should be generated as part of the forward works program.
- NAF materials with sulfur below 0.1% are considered suitable for construction (provided geotechnical requirements are also met).

5.2.2 PAF-classed waste rock

- A small proportion (10%) of assessed samples were classed as PAF (including UC(PAF) classed samples) (Table 5.1). This proportion remains constant if ineffective ANC is considered.
- Further testing is required to evaluate the role of pyrrhotite within waste rock given the uncertain acid generating potential of this mineral.
- A preliminary sulfur cut-off threshold of $\geq 0.2\%$ TS has been suggested to be used to identify PAF materials (based on the available static geochemical dataset).
- The occurrences of PAF-classed materials (based on available assay data and sulfide mineral models) should be reviewed in relation to the mining block model, and sulfur content should be included as a block model parameter (along with descriptors of lithology for material designated as waste).
- Classification criteria to identify PAF waste rock will need to be developed further and verified using kinetic testing methods. These criteria would need to be incorporated within the block model, to establish the total quantities of PAF waste rock that will need to be managed. The waste rock management strategy (e.g. segregation and isolation within the landform) will then need to be developed based on the production schedule, the waste rock landform design and the availability (and production timing) of suitable capping materials.
- Should temporary stockpiling of PAF ore and/or waste rock be required (e.g. for ore blending), such stockpiles should be located in appropriately lined facilities to capture and manage any runoff and/or seepage water.

5.2.3 Preliminary erosion risk assessment

- Oxide materials have variable dispersivity risk (from negligible to moderate dispersivity) and are typically highly sodic. Overall, oxide materials are considered to have a moderate erosion risk.
- Further assessment of oxide materials should be undertaken when bulk (as-mined) samples are available.
- Further assessment of transitional materials should be completed as part of the forward works program.
- The assessed fresh materials have high durability and the erosion risk associated with these materials is considered to be low.

5.2.4 Materials containing asbestiform fibrous minerals

Asbestiform mineral fibres have been identified in 1 of 25 samples submitted for fibrous mineral screening. Countable asbestiform fibres were identified in 1 mafic granulite (gneiss) (tm) sample (BSRC1451_75_76) from the Olympia pit and the fibres were identified as actinolite, ferroactinolite and chrysotile by SEM.

Mining operations will need to be undertaken in accordance with a Fibrous Materials Management Plan.

Table 5.1: Preliminary waste material inventory

Lithology group	Lithology codes	Weathering zone	Tonnage (t)	Estimated proportion (%)	AMIRA classification (based on total ANC)					Erosion risk			Fibrous mineral risk
					NAF	UC(NAF)	UC(PAF)	PAF-LC	PAF	Erosion risk summary	Dispersion risk	Sodicity	
Granulite	tb, tbg, tb, ti, tm, ts	Oxide	90,719,302	10%	10 (1)	-	-	-	-	Low to moderate	Negligible to slight	Marginally to strongly sodic	-
		Transitional	109,054,077	13%	31 (3)	-	1	-	-	nt	nt	nt	-
		Fresh	447,049,077	51%	50	-	7	-	3	Low risk (very high durability)	-	-	1 tm sample from the Olympia deposit – actinolite, ferroactinolite, chrysotile fibres
Footwall granite	gg	Oxide	2,834	0.000%	1	-	-	-	-	Moderate	Slight	Strongly sodic	-
		Transitional	10,174	0.001%		-	-	-	-	nt	nt	nt	-
		Fresh	532,177	0.1%		-	-	-	-	nt – anticipated low risk	-	-	-
Quartz monzonite	gm	Oxide	13,788,794	1.6%	1	-	-	-	-	Moderate	nt	Strongly sodic	-
		Transitional	30,555,464	3.5%	8 (1)		-	-	-	nt	nt	nt	-
		Fresh	147,638,169	17%	5	-	3	-	1	Low risk (very high durability)	-	-	-
Dyke (mafic dolerite)	md	Oxide	4,148,107	0.5%	1	-	-	-	-	Moderate	nt	Strongly sodic	-
		Transitional	5,854,958	0.7%	2	-	1	-	-	nt	nt	nt	-
		Fresh	21,689,628	2.5%	1	-	-	-	-	nt – anticipated low risk	-	-	-
Calc-silicate	xx	Fresh	tba	-	6	-	-	-	-	Low risk (very high durability)	-	-	-
Clay	cy	Oxide	tba	-	14 (7)	6	-	-	-	Moderate	Slight dispersion to moderate dispersion	Strongly sodic	-
Regolith	zl, zs, zx	Oxide	tba	-	6	2	-	-	-	Moderate	Negligible/slight/moderate dispersion	Strongly sodic	-
		Transitional	tba	-	1		-	-	-	nt	nt	nt	-
Total waste			871,042,761	100%	137	8	12	-	4				
Proportion of samples (based on AMIRA					85%	5%	7.5%	-	2.5%				
Proportion of samples (based on AMIRA classification with 25% of total ANC)					63%	27%	-	8%	2%				

Notes: nt – not tested; tba – to be advised. Geochemical classification sample numbers per lithology given based on AMIRA, incorporating total ANC. Number of NAF-Barren samples given in brackets in the NAF column.

6 Conclusions

The conclusions from the sub-surface materials characterisation are summarised in the following subsections.

6.1 Waste rock

6.1.1 Acid and metalliferous drainage potential

A total of 161 waste rock samples were selected for geochemical assessment.

The findings can be summarised as follows:

- Total sulfur concentrations of the KGP lithologies were generally low; sulfur content in assessed samples ranged from <0.01% to 3.4% (median 0.05% TS). Most waste rock samples (112 of 161; 71%) recorded a sulfur content below 0.1%.
- The samples were typically dominated by sulfide-S (accounting for approximately 60% of TS on average), and pyrite and pyrrhotite were identified by XRD (above detection limits) in a subset of samples. Total sulfur can be considered a conservative surrogate for acid potential within the materials.
- Low contents of the sulfate minerals jarosite (<0.5 wt% to 1 wt%) and gypsum (<0.5 wt%) were identified in two granulite (ti, gm) waste rock samples submitted for mineralogical assessment. Sulfur speciation testwork indicated sulfate-S accounted for approximately 50% of TS in oxide samples.
- Unaccounted sulfur content was typically low (on average 20% of TS). The unaccounted sulfur in the regolith and weathered bedrock samples may be in the form of hydroxysulfate minerals (such as alunite or jarosite) which can be resistant to digestion by HCl (i.e. the sulfate-S content would be underestimated). For samples from the fresh zones, the unaccounted sulfur is most likely to be present in sulfide minerals not fully recovered by the CRS method.
- Total ANC of the samples ranged from <0.5 kg H₂SO₄/t to 650 kg H₂SO₄/t, however, most samples (92%) had ANC values below 30 kg H₂SO₄/t. Measured ANC is likely to comprise carbonate and reactive silicate minerals. Total inorganic carbon content indicated that typically less than 50% of the total ANC is likely to be present in a carbonate form. ABCC testing indicated that readily available ANC is lower than total ANC for all samples. The effective or available ANC (calculated as ANC to pH 4.5) was typically 25% of measured ANC.
- Available (effective) ANC correlated well with calcite content.
- Results from the ABA and NAG testwork indicated that most waste rock samples were classed as NAF (85%) and present a low risk of AMD. A further 8 samples were classed as UC(NAF). The proportion of NAF samples reduces if the effective ANC is considered in the geochemical classification (approximately 60% of samples classed as NAF if an ANC of 25% of total ANC was adopted).
- Four samples were classed as PAF (2.4% to 3.4% TS) and 12 samples were classed as UC(PAF) with low NAG (to pH 7) acidities (<5 kg H₂SO₄/t). The effective acid potential of samples containing pyrrhotite may have been overestimated. Further geochemical assessment

(e.g. kinetic free-draining column tests) is required to assess the effective ANC and AP of the materials.

- The results suggest that a sulfur cut-off 0.2% may be used as a primary criterion for identifying AMD materials (i.e. during planning and modelling, and for operations).

6.1.2 Element enrichment and contaminant leachability

Multi-element analysis and assessment of GAI values indicated that of the 53 elements assessed, most (37) were not considered significantly enriched compared to crustal averages.

The following additional comments can be made:

- The elements identified as being enriched in a significant proportion of samples (>10%) included Ag, As, Cl, S, Se, Te, W and N.
- The nitrogen results (110 mg/kg to 1,900 mg/kg) appear high and have been queried with the laboratory.

The outcomes of the short-term leach testing are as follows:

- Salinity (based on EC values) is low for most leachates from most lithologies with 74% of samples yielding leachates with an EC of less than 1,000 $\mu\text{S}/\text{cm}$. The highest EC leach solutions were typically generated from clay or regolith samples; the highest EC was recorded for a clay sample leachate (5,400 $\mu\text{S}/\text{cm}$)
- Most leachate pH values were in the near neutral to alkaline range (pH 6.1 to pH 9.3). Seven (of 47) leach solutions were acidic (pH 4.2 to pH 5.7) and were generated from four lower sulfur oxide samples (<0.15% TS) and three high sulfur (2.4% to 3.4% TS) fresh zone samples.
- Dissolved concentrations of Hf, In, Nb, Re, and Te, were below the LOD for all leachates.
- Readily detectable trace elements included Al, Ba, B, Cd, Cu, Fe, Li, Mn, Ni, Rb, Sr and Zn, which were above the LOD in more than 20% of the leachates.
- The highest solute concentrations were predominantly associated with acidic pH leach solutions, however, some higher concentrations of Al, Fe and Mn were present in leach solutions in the circum-neutral to alkaline pH range (pH 6 to pH 9), possibly attributable to the presence of colloid material.

Based on the results, it is concluded that some of the waste rock materials are likely to have potential to generate acid or neutral metalliferous drainage.

6.1.3 Radioactivity

The uranium and thorium contents of the waste rock were low; calculated activities of U-238 (0.096 Bq/g) and Th-232 (0.14 Bq/g) are below the definition of radioactive material as given in DMP guidance (2010), i.e. material containing more than 1 Bq/g of U-238 or Th-232, respectively.

Based on the low uranium and thorium contents of the materials, it is not considered that any further radioactivity assessments are required.

6.1.4 Weathering and erosion potential

A subset of 24 waste rock samples was assessed for weathering and erosion potential.

The outcomes of the assessment are as follows:

- Oxide materials were typically classed as strongly sodic. Sodic lithologies are prone to erosion by the process of dispersion of the clay fraction in the presence of water and may become dispersive, for example, within a waste rock dump environment.
- Emerson aggregate testing indicates that oxide materials have variable dispersivity risk (from negligible to moderate).

Overall, the results indicate that some oxide materials may have the potential to be dispersive; however, the samples do not represent run-of-mine particle size distributions and further testing (including assessment of transitional materials and PSD of bulk run-of-mine materials) will be required to verify the material properties.

Slake durability testing of fresh zone samples indicated that the materials have high durability.

6.1.5 Fibrous minerals

Assessment of fibrous mineral content was conducted on 24 waste rock samples and 1 ore sample. Fibrous minerals screening indicated fibres were absent in 24 samples. SEM-EDS⁹ analysis confirmed countable fibres of asbestiform minerals present in one waste rock sample (tm, fresh zone, Olympia deposit). Countable asbestiform fibres identified included actinolite, ferroactinolite and chrysotile.

As 'countable' asbestiform fibres have been identified in one sample assessed in this study and also in a sample within the Landloch (2023) assessment, it is concluded that further investigation is required to ensure that suitable health and safety, materials handling, and other mitigation measures are identified and implemented during operations.

6.2 Ore-grade materials

6.2.1 Acid and metalliferous drainage potential

A total of 14 ore-grade samples were selected for geochemical assessment.

The findings can be summarised as follows:

- Total sulfur concentrations of ore grade lithologies ranged from 0.04% (cy) to 8.8% (tm) and typically sulfide-S dominated (as either pyrite or pyrrhotite).
- Total ANC of the samples was low (<30 kg H₂SO₄/t). ABCC testing indicated that readily available ANC is lower than total measured ANC (31% to 50%).

⁹ SEM-EDS – scanning electron microscopy with energy dispersive spectroscopy

- Ore samples classed as PAF (7 samples), PAF-LC (3), UC(PAF) (1) and NAF (3). If a lower effective ANC is adopted (25% of total ANC) is adopted the samples remain as predominantly PAF.

6.2.2 Element enrichment and contaminant leaching potential

- Elements present in enriched concentrations (where $GAI \geq 3$) in more than 10% of samples include Ag, Bi, Re, S, Se, Te, W and N.
- Leachate pH values were in the near-neutral to alkaline range (pH 6.3 to pH 8.1), with the exception of an acidic leachate generated from a high sulfur tm sample (pH 2.5).
- Leachate EC values were typically low ($<1,000 \mu\text{S}/\text{cm}$) except for the clay leach solution ($1,700 \mu\text{S}/\text{cm}$) and an acidic tm leachate ($8,500 \mu\text{S}/\text{cm}$). The low salinity of the ore samples is likely to reflect that these samples are relatively fresh and have not been subjected to oxidation.
- The acidic leachate (from the tm sample) contained maximum concentrations of most trace elements – including Al, As, Cd, Cr, Co, Cu, Fe, Ni and Zn – often several orders of magnitude greater than in circum-neutral or alkaline pH leachates.
- Colloidal content appears present in some near-neutral leachates.

Based on these results it is concluded that the ore materials are likely to leach solutes at elevated concentrations; in particular, the ore is expected to react rapidly and produce AMD when exposed. Ore will require appropriate management and mitigation measures to contain any seepage that may be generated from the ore materials.

6.2.3 Radioactivity

Concentrations of uranium and thorium in ore-grade samples were low; calculated activities of U-238 (0.018 Bq/g) and Th-232 (0.04 Bq/g) are below the limit defined for radioactive material as given in DMPE guidelines (DMP, 2010), i.e. material containing more than 1 Bq/g U-238 or Th-232, respectively.

Based on the low uranium and thorium contents of the materials, it is not considered that any further radioactivity assessments are required.

6.2.4 Fibrous minerals

Assessment of fibrous minerals content was conducted on one ore-grade sample – no fibrous minerals were identified.

Further investigation into ore and tailings samples should be completed, with a focus on materials located near or generated from materials where fibrous minerals have been identified in waste rock.

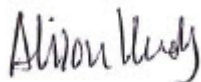
Closure

This report, Katanning Gold Project sub-surface materials characterisation – factual report, was prepared by



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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

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Appendix A Sampling and analysis plan (SAP)

Draft

Technical Memorandum

To	Troy Collie, Matthew Greentree	Client	Ausgold Exploration Pty Ltd
From	Alison Hendry	Project	AUG037
Cc		Date	28 November 2024
Subject	Katanning Gold Project: supplementary sub-surface materials characterisation – data review and Sampling and Analysis Plan (SAP)		

1 Introduction

Ausgold Exploration Pty Ltd (Ausgold) has engaged SRK Consulting (Australasia) Pty Ltd (SRK) to complete a supplementary geochemical materials characterisation assessment in support of the Katanning Gold Project (KGP) definitive feasibility study (DFS). The proposed project includes open pit mining of the Jackson, Jinkas, Oly and Dingo deposits. The outcomes of the program will be used to support the DFS and environmental approvals submissions, and inform closure planning.

This memorandum outlines the sampling and analysis plan (SAP) developed for the sub-surface materials characterisation program being undertaken; the SAP will include waste rock and ore samples. Tailings samples will be assessed once samples have been generated from the DFS metallurgical program.

The aims of the characterisation program are to assess and classify sub-surface materials according to whether they pose a risk of causing potential environmental harm due to:

- acid and metalliferous drainage (AMD) of all metals and metalloids regardless of whether the conditions are acidic, including neutral mine drainage (NMD)
- saline materials and/or drainage
- sodic and/or dispersive material
- erosive material
- fibrous minerals
- naturally occurring radioactive materials (NORMs) and technologically enhanced naturally occurring radioactive materials (TENORMs).

The SAP has been developed following desktop review of the KGP drill hole database, proposed pit extents and previous materials characterisation reports.

Waste rock samples have been selected to be representative of materials to be mined both proportionally (by lithology) and spatially within the proposed KGP pit volumes. Sample selection also considered factors such as the material that will be exposed on the pit walls or stored in ore stockpiles. The outcomes of the assessment will be used to inform management requirements during operations and for closure.

The SAP has been developed in accordance with leading practice outlined in national and international guidelines for the prevention and management of AMD, including the following documents:

- *Materials Characterisation Baseline Data Requirements for Mining Proposals*, March 2016, Department of Mines and Petroleum (DMP) (now Department of Energy, Mines, Industry Regulation and Safety (DEMIRS)), Government of Western Australia.
- DMIRS, 2020a, *Mining Proposal* Government of Western Australia, DMIRS, March 2020.
- *Preventing Acid and Metalliferous Drainage*, September 2016, Leading Practice Sustainable Development Program for the Mining Industry (LPSDP), developed by the Australian Government, Department of Industry, Tourism and Resources.
- *Global Acid Rock Drainage (GARD) Guide*, Version 1 (2012), developed by the International Network for Acid Prevention (INAP).
- *Prediction Manual for Drainage Chemistry from Sulphidic Geological Materials*, MEND Report 1.20.1 (2009).
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- WA EPA, *Environmental Factor Guideline – Terrestrial Environmental Quality*.
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- *Managing naturally occurring radioactive material (NORM) in mining and mineral processing guideline*, 2010, NORM-6, Reporting Requirements, Government of Western Australia, Department of Mines and Petroleum, Resources Safety.
- *Management of fibrous minerals in Western Australian mining operations*, 2015, Second Edition, Department of Mines and Petroleum, Resources Safety.

2 Review of available geochemical data

2.1 Project background

The KGP is located in the Shire of Katanning, approximately 260 km southeast of Perth. The proposed DFS mine plan includes open pit mining across four deposit areas including Jackson, Jinkas, Dingo and Oly.

The project is located in the Katanning Greenstone Belt (KGB), which has been recognised as being part of the Corrigan Tectonic Zone on the southwestern extent of the Youanmi Terrane, within the Archean Yilgarn Craton (Quentin De Gromard et al., 2021). The KGB is dominated by felsic metasedimentary and felsic to mafic metavolcanic gneisses, that are locally intruded and defined by tabular bodies of tonalite-trondhjemite-granodiorite composition gneisses, metasyenogranites and metamonzonogranites (Crawford, 2021; Quentin de Gromard et al., 2021; Heseldell, 2023).

The Katanning Gold Deposit (KGD) is hosted within gently dipping metavolcanic mafic to felsic gneisses. The gneisses are intruded by the Jinkas Granodiorite sill. The host sequence is bounded to the west by the syn-metamorphic Footwall Granodiorite and to the east by a thick hanging wall sequence of felsic metasedimentary gneisses (Heseldell, 2023).

The waste rock tonnage to be mined is estimated to be approximately 871 Mt, and will comprise granulites (felsic, intermediate mafic, mafic and speckled mafic), quartz monzonite, mafic dolerite and footwall granite. The waste rock generated will include oxide (12%), transitional (17%) and fresh (71%) materials.

2.2 Review of previous materials characterisation assessment

Two phases of materials characterisation studies have been completed previously in support of the KGP, as summarised in the following subsections.

2.2.1 Waste rock and tailings characterisation (Knight Piésold, 2022)

Geochemical characterisation assessments of waste rock and tailings samples were completed by Knight Piésold in support of the KGP Pre-feasibility Study (PFS) in 2022.

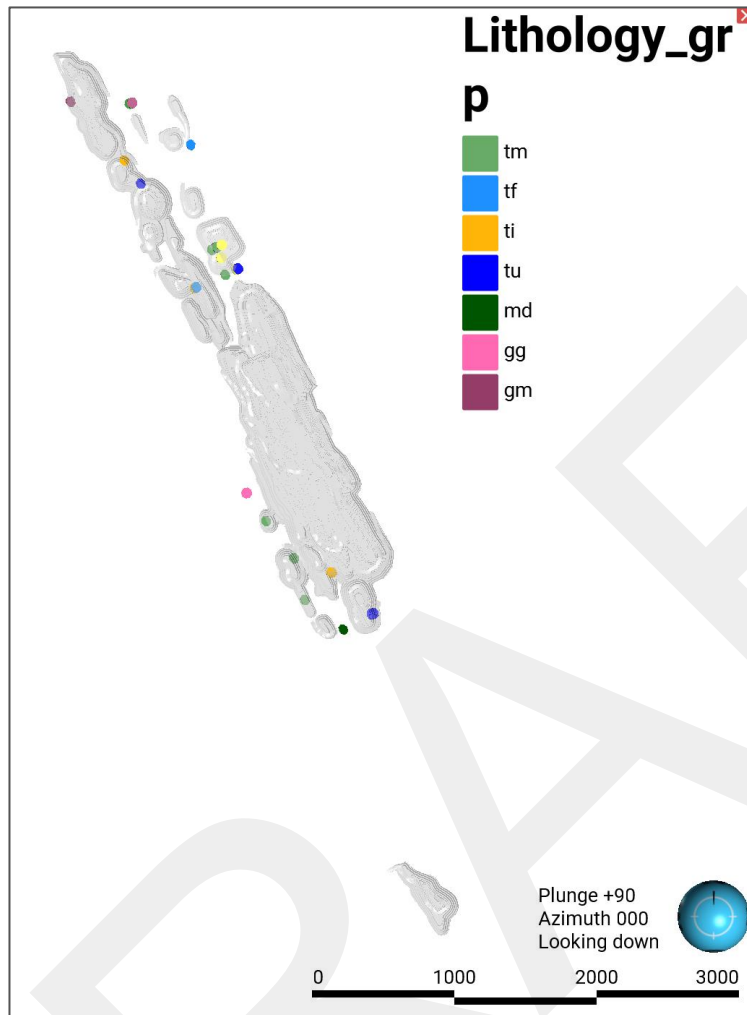
Waste rock geochemical characterisation

Knight Piésold assessed 34 rock sample intervals including samples from the Jinkas, Jackson, Olympia and Datatine deposits (as defined during the PFS) (Knight Piésold, 2022a). The samples included 31 waste-grade samples and 3 ore-grade samples; the sampled intervals are shown in Figure 2.1¹. All testwork completed was performed on all 34 samples assessed.

Only five waste rock samples were collected from drill hole intervals within the DFS pit shells. These include two intermediate granulite (ti) samples and one mafic granulite (tm) sample at Oly and a tm sample and a felsic granulite (tf) sample at Jinkas.

¹ Based on an ore–waste cut-off grade of 0.3 ppm Au.

Figure 2.1: Locations of the Knight Piésold samples



The outcomes of the assessment were:

- The waste rock samples had sulfur contents ranging from <0.01% to 1.35% (average 0.16%); 19 of the 31 samples had sulfur contents equal to or below 0.1% S (a threshold commonly used as a preliminary screening indicator of a materials potential to generate acid).
- The three ore samples had sulfur contents that ranged from 0.22% S to 1.08% S.
- Sulfur speciation testwork was limited to measurements of total sulfur and sulfate-sulfur (by HCl extraction). The results indicated that sulfide-sulfur (up to 0.4%) is the dominant form of sulfur within most of the fresh rock materials. Whereas in the oxide and transitional samples, sulfur contents were typically low (<0.1) and dominated by sulfate-sulfur. Acid neutralisation capacity (ANC) values were generally low to moderate, ranging from 13 to 177 kg H₂SO₄/t (average 30 kg H₂SO₄/t). The maximum ANC value (177 kg H₂SO₄/t) was recorded by a mafic granulate sample from the transitional zone.
- Calculated net acid production potential (NAPP) values ranged from -176 to 30 kg H₂SO₄/t (average -25 kg H₂SO₄/t).
- Net acid generation (NAG) tests generated NAG solutions with NAG pH values that ranged

from pH 3 to pH 10.6. Four samples with higher sulfur contents (0.43 to 1.35% S) generated NAG pH values below pH 6 (NAG pH 3 to pH 5.9).

- The waste rock samples classified as non-acid forming (NAF; 29 samples), acid consuming (AC; 1 sample) and potentially acid forming (PAF; 1 sample with 1.35% S).
- The waste rock samples collected from within the DFS pit shells included four NAF samples and the AC sample.
- The three ore-grade samples classified as NAF, PAF with a low capacity to generate acid (PAF-LC) and PAF.

The overall results indicated that most waste rock samples (30 of 31) were classed as NAF (or AC) with sulfur contents between 0.01% and 0.43%.

These classifications are based on the utilisation of the total ANC measurements², which typically overestimate neutralisation capacity and do not necessarily reflect available ANC (which can be assessed by acid base characterisation curves – ABCC). No mineralogical assessment (by x-ray diffraction) was completed to confirm the sulfur and carbonate minerals present in the samples.

Elements identified as being enriched relative to average crustal abundances included sulfur, arsenic, bismuth, carbon, cadmium, cobalt, chromium, molybdenum and nickel. No static leach testing was completed.

Tailings geochemical characterisation

Two buckets of tailings slurry generated from the PFS metallurgical testing program were composited, and the tailings solids and supernatant were assessed (Knight Piésold, 2022b).

The outcomes of the assessment were:

- The total sulfur content of the tailings was 1.64%; with 0.32% sulfate-sulfur (measured) and 1.32% sulfide-sulfur (by calculation). The maximum potential acidity (MPA) of the tailings was 50 kg H₂SO₄/t and the acid potential (AP; derived from the calculated sulfide value) was 40 kg H₂SO₄/t³.
- The total ANC recorded was moderate (26 kg H₂SO₄/t).
- The sample generated an acidic NAG pH (2.8) with NAG acidity to pH 7 of 20 kg H₂SO₄/t. The paste pH (a batch test with deionised water) reported was pH 8.7, indicating the sulfides are fresh and not yet oxidised.

² Adjusted ANC (as CaCO₃ equivalent) values were also calculated using measured carbon contents which ranged from 1 kg H₂SO₄/t to 91 kg H₂SO₄/t. If these values are used to calculate adjusted NAPP values, three of the NAF classed samples are re-calculated as uncertain (NAF) or UC(NAF).

³ The MPA was incorrectly reported as 40 kg H₂SO₄/t in the Knight Piésold report, having been based on the calculated sulfide-sulfur content instead of the total sulfur content.

- The calculated NAPP based on the MPA is 24 kg H₂SO₄/t, which is in reasonable agreement with the calculated NAG acidity.
- The tailings solids class as PAF.
- Elements identified as being enriched relative to average crustal abundances included Cl, Cr, Mo, S, Se. No leach testing of the tailings solids was undertaken.
- The supernatant was circum-neutral (pH 7.7) and highly saline (17,980 µS/cm). The dominant major ions were Na (3,425 mg/L) and Cl (6,700 mg/L), with a SO₄ concentration of 1,395 mg/L. The following elements were present in readily detectable concentrations: B, Ba, Ca, Cl, Co, Cr, Cu, F, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, CN (including total, weakly acid dissociable and free), SO₄, Sr, V and Zn.

2.2.2 Materials characterisation (Landloch, 2023)

Landloch completed a materials characterisation study in support of the KGP PFS in 2023. The assessment included characterisation of waste rock and ore samples.

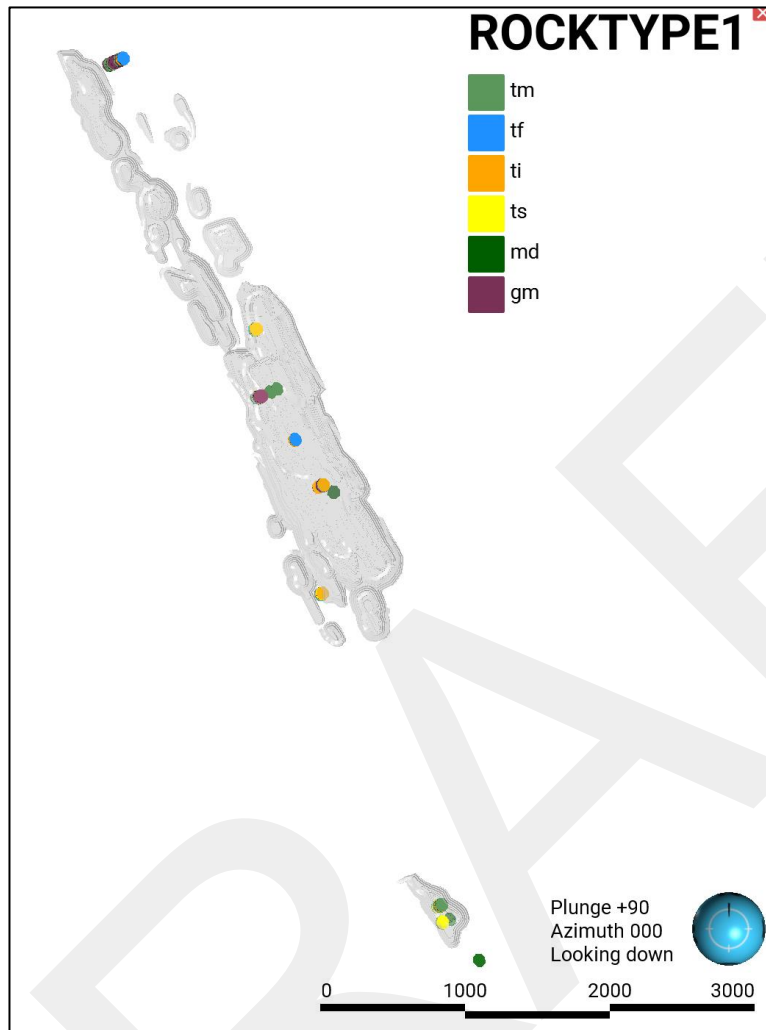
Waste rock geochemical characterisation

Waste rock and ore were collected from the Jackson, Jinkas, Jinkas South and Dingo deposits. The sampled interval locations are shown in Figure 2.2. The samples included 109 waste rock samples and 2 ore (fresh mafic granulite; tm) samples. Many of these samples were from locations outside of the DFS pit shells.

Limited geochemical testwork was completed, including:

- Total sulfur (by LECO), and sulfide (%) measurement (however the method of measurement is not specified) – 111 samples.
- Only samples with total sulfur contents above 0.3% (11 samples) were subjected to further ABA accounting testwork, which included ANC and NAG tests (single-addition).
- Paste pH and paste EC tests (1:5 solid:liquid ratio) were reported on 17 samples.
- Multi-element analysis (following four-acid digest) and static leach testwork (1:20 solid:deionised water) were completed on a subset of 22 samples.
- NORM tests are reported to have been completed on 109 samples.
- Fibrous mineral screening was completed on 18 samples.
- Rock durability and structural stability testwork (or reported indices) were assessed on 17 samples, including:
 - rock water absorption and density
 - exchangeable cations (Ca, Mg, Na, K, Al)
 - effective cation exchange capacity (ECEC)
 - exchangeable sodium percentage (ESP)
 - Electrochemical Stability Index (ESI).

Figure 2.2: Locations of waste rock intervals assessed in Landloch (2023)



The outcomes of the assessment were:

- Paste pH values ranged from circum-neutral to alkaline (pH 7.14 to pH 9.61) and paste EC values ranged from 20 to 470 $\mu\text{S}/\text{cm}$.
- The waste rock samples had sulfur contents ranged from <0.01% to 3.94%; 51 of 111 samples had total sulfur contents above 0.1% (a threshold commonly used as a preliminary screening indicator of a materials potential to generate acid).
- Sulfide-sulfur was reported as the dominant form of sulfur in the samples from the fresh zone. Samples from the oxide zone typically had low sulfur contents (<0.1%), however the sulfur (and sulfide) content in the transitional samples were variable.
- ANC values recorded for 11 samples ranged from 17.4 to 144 kg $\text{H}_2\text{SO}_4/\text{t}$ (average 43 kg $\text{H}_2\text{SO}_4/\text{t}$). The maximum ANC value (144 kg $\text{H}_2\text{SO}_4/\text{t}$) was recorded for a felsic granulite sample from the transitional zone.
- Calculated NAPP values ranged from -126 to 100 kg $\text{H}_2\text{SO}_4/\text{t}$. Most samples (10 of 11) had negative NAPP values (-1.1 to -126 kg $\text{H}_2\text{SO}_4/\text{t}$), indicating most samples had an excess of neutralising capacity (based on the measured total ANC values).

- NAG tests generated NAG solutions with NAG pH values that ranged from pH 2.4 to 11.4. Three samples with higher sulfur contents (0.39 to 3.94% S) generated NAG pH values below pH 4.5 (NAG pH 2.4 to pH 4.2).
- The waste rock samples classified as follows:
 - Most of the samples were classed as NAF (108 samples), predominantly classified on the basis of having total sulfur contents below 0.3%, and classifications do not factor in available ANC.
 - Uncertain (PAF-LC) (three samples with negative NAPP values, acidic NAG pH values below pH 4.5 and NAG acidities (to pH4) below 5 kg H₂SO₄/t.
 - PAF (1 sample with 3.94% S) with NAG pH 2.4 and a positive NAPP (100 kg H₂SO₄/t).
- Multi-element analysis results indicate that Cr was present in two mafic granulite samples (301–340 mg/kg) at concentrations above the Health Investigation Level (240 mg/kg).
- Elements identified as being enriched relative to average crustal abundances included S, As, Bi, Cd, Co, Cr, Mo and Ni. Bi, Mo and Re were present in concentrations considered to be significantly enriched (relative to geochemical abundance indices) in a small number of samples (1 or 2 from 22 samples analysed).
- Static leach testing (1:20 solid:deionised water contact ratio) generated leach solutions with alkaline pH values (pH 8.8 to pH 9.6) and low EC (up to 110 µS/cm). Trace element concentrations were typically below or close to detection limits, possibly reflecting the contact ratio adopted (i.e. relatively high volume of water), but also consistent with relatively fresh, unweathered samples).
- NORM assessment found that none of the assessed samples had dose limits or surface concentrations above the specified WA Radiological Council (2019) and the DMP (2010) guideline values.
- Fibrous minerals assessment was completed on 18 samples, in which the samples were submitted for quantitative identification of asbestos in bulk samples (Australia Standard AS 4964–2004), along with polarised light microscopy (PLM) and dispersion staining techniques. The results confirmed that no asbestos was detected (at the reporting limit of 0.01% w/w) in 17 of the 18 samples. Unknown mineral fibres were identified in one sample (DD001903 – mafic dolerite from the fresh zone). There is no reporting to confirm that further assessment of the unknown mineral fibres was completed (e.g. by scanning electron microscopy (SEM) to confirm the mineralogy, habit and morphology of the fibres).

2.2.3 Previous assessment review conclusions

Most waste rock samples assessed previously were classed NAF.

Based on the available drill hole assay sulfur data, the bulk of the waste rock volumes to be mined are likely to present a low AMD risk. However, the availability of ANC within waste rock needs to be assessed.

The overall number of samples assessed, spatial representativity with the proposed volume to be mined, testwork completed, and the geochemical classification approach are not consistent with the geochemical characterisation assessment approach outlined in AMIRA (2002) and DMP (2016). SRK considers that the materials characterisation program undertaken to-date does not meet the requirements of a DFS or a Mining Proposal submission.

No baseline soils assessment was included in either the Knight Piésold or Landloch assessments and is a gap in relation to the materials characterisation program for the KGP.

2.3 Review of the KGP drill hole database

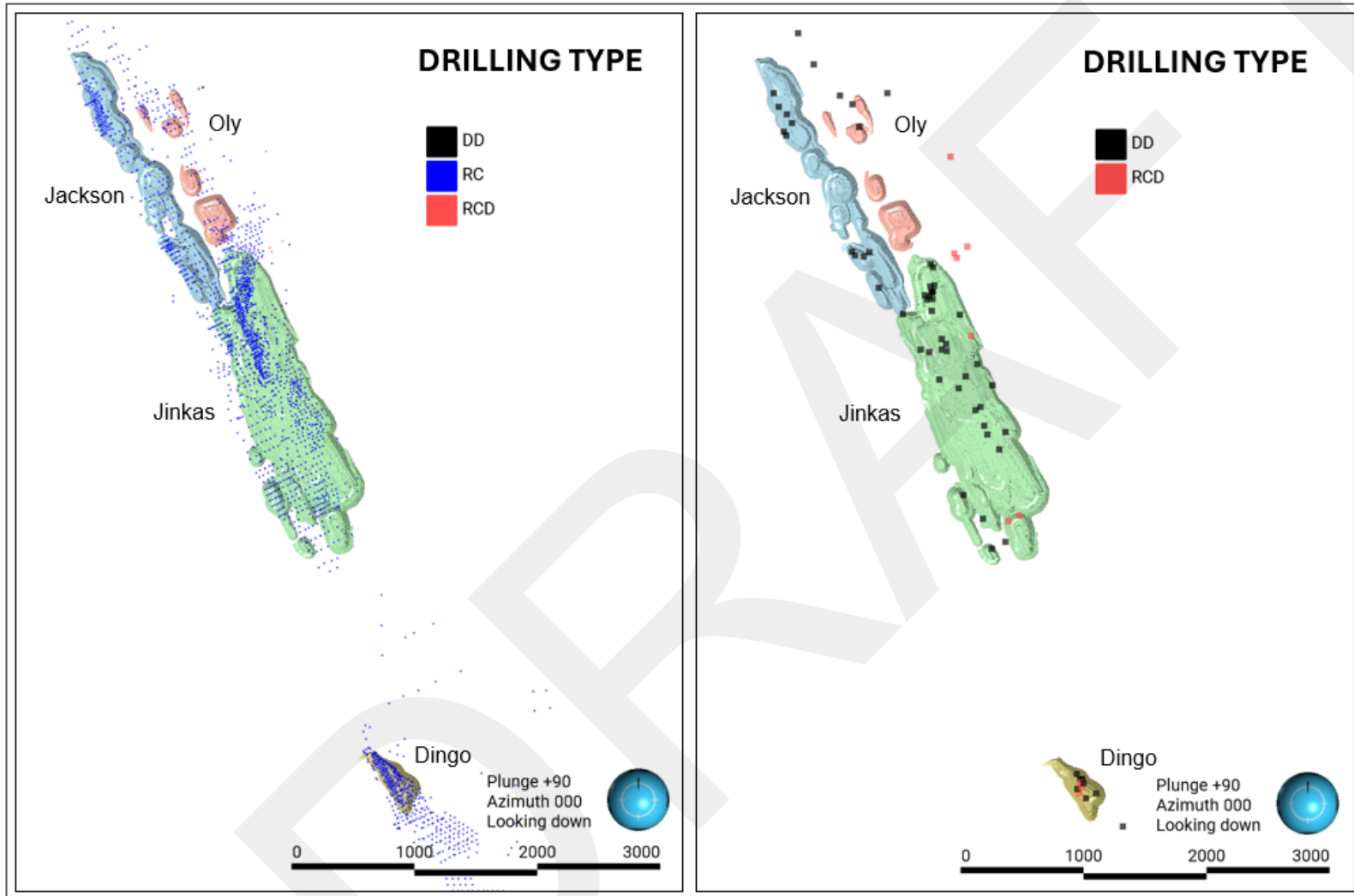
2.3.1 Review of logged lengths of lithologies (in-pit) and available assay data

An export of the KGP geological database was received in September 2024, including a total of 4,090 drill holes and a total logged in-pit drill hole length of 105,390 m (including 86,666 m of waste) within the DFS pit shells. The in-pit volume(s) of the DFS pit shells are intercepted by drilled diamond drill holes (predominantly drilled between 2017 and 2023), with a corresponding drilled total length of 3,238 m (including 2,807 m of waste-grade intervals).

Figure 2.3 shows the drill hole collar locations included in the drill hole database extract and the proposed DFS KGP pits. Cumulative logged lithology lengths of waste rock are given in Table 2.1.

The in-pit assay dataset includes x-ray fluorescence (XRF) sulfur data over a total of 7,936 m. However, limited XRF sulfur data are available for the in-pit diamond drill core (approximately 40 m length). Calcium has been assayed over 2,464 m of in-pit drilled length within the DFS pits, but similarly, only 40 m length has been assayed from diamond drill core.

Figure 2.3: Drill hole collar locations and proposed pit shells



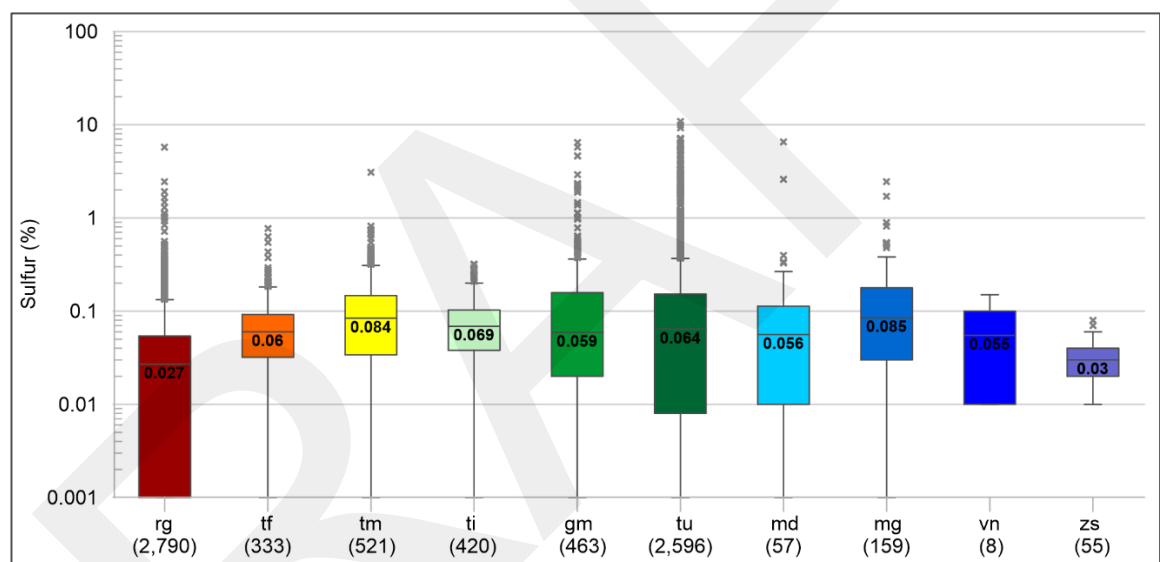
Notes: DD – diamond drill hole; RC – reverse circulation drill hole; RCD – reverse circulation with diamond drill hole.

The in-pit assay dataset includes XRF sulfur data over a total of 7,936 m. However, limited XRF sulfur data are available for the in-pit diamond drill core (approximately 40 m length). Calcium has been assayed over 2,464 m of in-pit drilled length within the DFS pits, but similarly, only 40 m length has been assayed from diamond drill core.

Sulfur contents within the waste rock samples (across all in-pit data) ranged between <0.001% and 10.92%, with an average of 0.13% and a median of 0.043%. Sulfur contents are generally low and represent a low risk of acid generation – the median sulfur content is below 0.1% S in all waste rock lithologies (Figure 2.4). A 0.1% S cut-off is often for preliminary screening of low AMD risk material.

Ore-grade materials within the pit have sulfur contents (by XRF) ranging from <0.001% to 19.7%, with median and average values of 0.051% and 0.91%, respectively.

Figure 2.4: Box-and-whisker plots of sulfur content for waste-grade in-pit assay samples



Note: Includes all in-pit waste-grade lithologies with more than 6 assay samples included as “Rock Type 1” in the drillhole database extract provided.

The ANC of materials may be inferred from the calcium content, where the calcium can be shown to be contained mostly in reactive carbonate minerals (e.g. calcite, dolomite). The theoretical ANC may be calculated stoichiometrically using the Ca content as follows:

$$\text{ANC\_Ca (in units of kg H}_2\text{SO}_4\text{/t)} = \text{Ca (in wt\%)} \times 24.5$$

Based on the Ca contents (by XRF) for in-pit waste-grade materials, inferred ANC_Ca values range from <0.02 kg H₂SO₄/t to 720 kg H₂SO₄/t, with median and average values of 0.4 kg H₂SO₄/t and 13.9 kg H₂SO₄/t, respectively. However, the ‘availability’ of the neutralisation capacity (i.e. from readily available minerals such as calcite) needs to be assessed during the geochemical testing program.

Other parameters included in the XRF assay data include Ag, Al, As, Ba, Be, Bi, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Ho, In, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, P, Pb, Pr, Rb, Re, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn and Zr.

2.3.2 Sample selection – waste rock and ore-grade samples

Table 2.1 lists the logged lengths within the proposed pit volumes for each waste rock lithology⁴, along with the number of samples selected for per lithology. A cut-off value for 0.3 ppm Au has been applied to separate waste rock from ore-grade material. A summary of the logged waste lithologies within the total in-pit volume is given in Table 2.2.

Waste rock and ore samples were selected from available diamond drill hole (DDH) core materials where possible. Not all logged lithological units were captured in DDH samples. The sample selection has been completed to provide a dataset that achieves good lithological and spatial representation of the waste rock to be mined. Limited assay data (sulfur and calcium) were available for the in-pit diamond drill hole intervals, however available gold assay data were reviewed during the sample selection, as sulfur contents are reported to be aligned with mineralisation. Consideration was also given to proportions (per cent) of waste rock from oxidised, transitional and fresh materials.

⁴ Lithologies as logged within the drill hole database. Waste rock has been delineated either by Au <0.3 ppm or rock intervals that do not have gold assay data.

Table 2.1: Logged in-pit waste rock lithologies and preliminary sample selection

Lithology group code	Lithology code(s)	Lithology group/lithology	Total in-pit logged length of waste grade rock		Total in-pit DDH logged length waste rock		No. of selected waste rock samples – preliminary sample selection		
			m	%	m	%	Total	DD core	RC pulps
rg	rg, cy, cy	regolith undifferentiated	18,837	22%	247	11%	43	38	5
tf	tf	felsic granulite (gneiss)	11,776	14%	509	23%	25	23	2
tm	tm, ts	mafic granulite (gneiss)	10,783	12%	492	22%	25	21	4
ti	ti	intermediate granulite (gneiss)	9,475	11%	610	27%	20	5	15
tu	tu, su	gneiss – undifferentiated/unknown	8,454	10%	29	1.3%	24	22	2
gm	gm	monzogranite	8,969	10%	143	6.4%	18	5	13
md	md, mg	dolerite/gabbro	1,325	2%	1	0.0%	7	4	3
zl	zl	lateritic duricrust	632	1%			4	3	1
gg	gg, ga	granite	907	1%	9	0.4%	6	1	5
zx	zx	exotic overburden (roadbase)	184	0.2%			3	3	
zs	zs	soil	286	0.3%			3		3
tb	tb	biotite (dominant) quartz granulite (gneiss)	151	0.2%			3	2	1
xx	xx	calc-silicate rock	156	0.2%	19.6	0.9%	3	2	1
tg	tg	garnet (dominant) quartz granulite (gneiss)	104	0.1%			2		2
vn	vn	old codes to be superseded	89	0.1%	4.7	0.2%	2	2	
-	-	Other minor lithologies	443	1%	44.1	2.0%			
-	-	Not logged	14,095	16%	148	6.6%			
Total			86,666	100%	2,257	100%	188	131	57

Note: The cumulative logged lengths presented are based on the waste-grade logged lithologies including in the drill hole database. Certain lithology codes have been combined into grouped lithologies based on advice from Ausgold geologists.

The waste rock sample selection was submitted to Ausgold geologists for review. Ausgold advised that the geological logging and lithologies have been updated and the proposed sample set was updated to reflect the revised (updated) logging information (as presented in Table 2.2).

Table 2.2: Waste rock sample selection with updated lithological logging

Lith code	Lithology	No. of selected waste rock samples		
		Total	DD core	RC pulps
tg	garnet (dominant) quartz granulite (gneiss)	35	25	10
tb	biotite (dominant) quartz granulite (gneiss)	33	21	12
tm	mafic granulite (gneiss)	26	24	2
cy	clay	24	17	7
gm	monzogranite	19	3	16
ti	intermediate granulite (gneiss)	9	9	
xx	calc-silicate rock	7	5	2
md	dolerite	6	4	2
ts	speckled granulite	6	4	2
tbg	biotite garnet gneiss	4	4	
zl	lateritic duricrust	3	2	1
zs	soil	3	2	1
zx	exotic overburden (roadbase	3	1	2
gg	granite	2	2	
Total		180	123	57

A subset of ore samples was selected to assess the characteristics of materials that may report to ore stockpiles. The samples selected to represent ore-grade materials have gold contents ranging between 0.3 g/t and 1.8 g/t.

Table 2.3 summarises the number of ore-grade samples selected for geochemical characterisation against logged lithology. The cumulative logged lithology total lengths are given for the lithologies currently included in the drill hole database. Additional notes from Ausgold in relation to updated logging are provided in Table 2.3 for pertinent lithologies.

The proposed list of waste rock and ore samples to be collected for the assessment is provided in Attachment 1, which includes 180 waste rock samples and 14 ore samples. The proposed sample intervals locations are shown in Figure 2.5 (waste rock samples) and Figure 2.6 (ore-grade samples).

Table 2.3: Logged in-pit lengths of ore-grade lithologies and selected samples

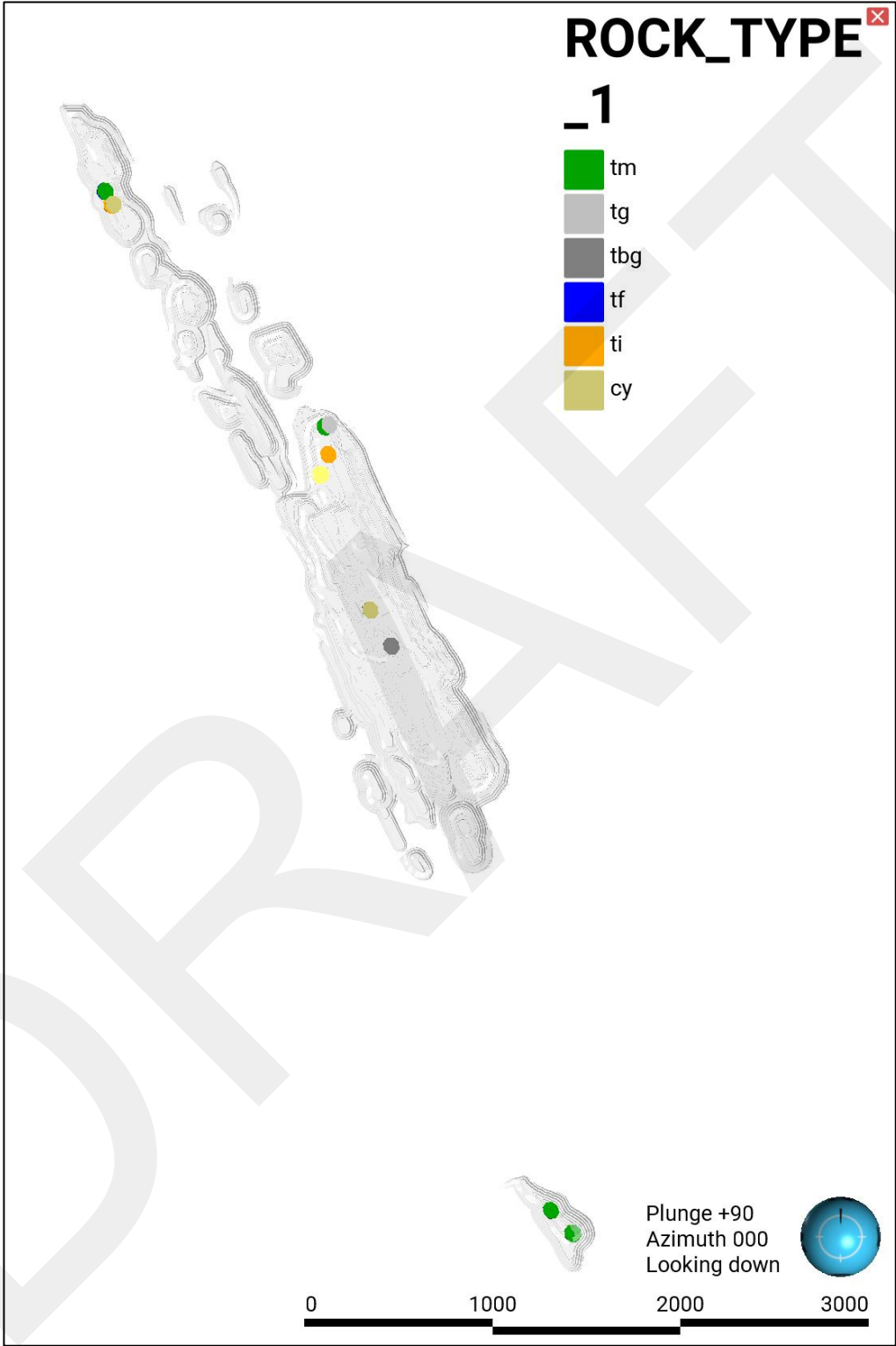
Lith code	Lithology (original drill hole database logged lithologies)	Total in-pit logged length of ore grade rock		Total in-pit DDH logged length ore rock		No. of selected samples (DD core)	Notes from Ausgold geologists
		m	%	m	%		
tm	mafic granulite (gneiss)	2,961	16%	176	32%	6	Includes three ore intervals originally logged as tu but advised to be tm
tf	felsic granulite (gneiss)	2,229	12%	63	11%	1	ti and tf geochemically and mineralogically similar
tu	gneiss - undifferentiated/unknown	1,736	9.3%	13	2%	-	See tm note
ti	intermediate granulite (gneiss)	1,660	8.9%	165	30%	3	ti and tf geochemically and mineralogically similar
rg	regolith undifferentiated	1,280	6.8%	9.4	2%	-	
cy	clay	659	3.5%	25	4%	2	
gm	monzogranite	420	2.2%	20	4%	-	Not typically ore-grade
cu	undifferentiated clay (weathered bedrock)	169	0.9%	5.3	1%	-	
zx	exotic overburden (roadbase	142	0.8%	-	-	-	
zl	lateritic duricrust	58	0.3%	1.0	0%	-	
md	dolerite	56	0.3%	-	-	-	
su	undifferentiated/unknown	54	0.3%	2.9	1%	-	
mg	gabbro	49	0.3%	-	-	-	
gg	granite	45	0.2%	1.0	0%	-	
tg	garnet (dominant) quartz granulite (gneiss)	34	0.2%	-	-	1	Interval originally logged as rg but advised to be tg
tb/(tbg)	biotite (dominant) quartz granulite (gneiss)	29	0.2%	-	-	1 (tbg)	Rare example of ore in tbg/tb/tg
zs	soil	22	0.1%	-	-	-	
xx	calc-silicate rock	22	0.1%	-	-	-	
ts	speckled mafic granulite (gneiss)	19	0.1%	2.9	1%	-	
vn	old codes to be superseded	11	0.1%	1.8	0.3%	-	
ga	alkali feldspar granite	3	0.02%	-	-	-	
-	Other minor lithologies	51	0.3%	10.2	2%	-	
-	Not logged	7,017	37.5%	60	11%	-	
Total		18,724	100%	557	100%	14	

Note: Ore grade cut-off of Au ≥0.3 ppm applied.

Figure 2.5: Selected waste rock sample locations



Figure 2.6: Selected ore-grade sample locations



3 Laboratory program

The laboratory program has been developed in accordance with DMIRS (2016) guidelines for sub-surface materials characterisation. The primary objectives are to establish the potential for acid or neutral mine drainage to develop, and to identify any additional environmental or health and safety issues, such as the presence of dispersive materials and/or asbestiform minerals.

The static test program will assess the acid generation and metal leaching risk and provide the basis for materials classification. For example, materials may be classified as NAF, NAF with potential to generate neutral mine drainage (NAF-NMD) or PAF. The characteristics of individual material types are then commonly applied to the block model for use in mining and materials handling decisions, such as the need for waste segregation. The program will also identify materials that contain fibrous or asbestiform minerals, which will also be classified accordingly for inclusion in the mining block model.

The test program will be undertaken using a phased approach. All samples selected for materials characterisation assessment (approximately 180 waste rock samples and 14 ore-grade samples⁵) will be submitted for baseline characterisation and screening level testing and analysis (Phase 1). A subset of samples will be selected for Phase 2 testing following review of the geochemical data generated in Phase 1.

3.1 Phase 1 laboratory program

3.1.1 Waste rock and ore-grade samples

Scheduled Phase 1 testing and analysis include the following:

- paste pH and electrical conductivity (EC)
- total sulfur (TS) analysis by LECO
- ANC (modified Sobek method)
- NAG tests (NAG pH and NAG acidity to pH 4.5 and pH 7) (to be undertaken if sulfur is detected in the TS analysis by LECO)
- multi-element chemical assay (4-acid digest)⁶.

⁵ To be finalised following sampling by Ausgold geologists and field staff. Additional allowance will be included for duplicate samples for quality assurance and quality control (QA/QC) purposes.

⁶ The multi-element analytical suite will include:

All samples: Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Ce, Cl, Co, Cr, Cs, Cu, F, Fe, Ga, Ge, Hf, Hg, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Tl, Ti, U, V, W, Y, Zn and Zr.

In addition, asbestiform mineral screening will be completed on a subset of approximately 10–15 samples, with focus on lithologies that may contain amphibole and serpentine minerals (e.g. mafic, ultramafic and quartz veins) and from a range of depths in accordance with DEMIRS guidance (DMP, 2015; 2016).

3.2 Phase 2 laboratory program

The Phase 2 laboratory program will aim to further define the geochemical characteristics and establish the physical properties of the material types. Testing and analysis will include the following.

Geochemical and mineralogical testing

- sulfur speciation for sulfide and sulfate (chromium reducible sulfur and S-HCl)
- carbon speciation (total inorganic and total organic carbon)
- nitrogen speciation (total nitrogen, nitrate, nitrite and nitrogen Kjeldahl)
- acid buffering characteristic curves
- short-term leach tests (deionised water)⁷
- mineralogical identification by quantitative x-ray diffraction (XRD)
- identification of asbestiform fibrous minerals by scanning electron microscopy.

Physical and geotechnical testing (erosion risk)

- particle size distribution
- Emerson Aggregate test (dispersivity)
- slake durability testing (weathering resistance – for appropriate lithologies)
- cation exchange capacity and exchangeable sodium percentage (salinity).

3.3 Phase 3 laboratory program

To further assess solute leaching behaviour, a subset of samples will be selected for supplementary leach assessment in Phase 3 of the laboratory program. The data obtained from these programs would be used as inputs to DFS water quality assessments and to inform the development of waste management strategies and closure planning.

The test methodologies may include kinetic column tests (free-draining AMIRA columns) on sulfidic materials, and/or supplementary static leach tests (as summarised in Table 3.1) which would be conducted on low sulfide samples. The Phase 3 test methodologies will be selected based on the outcomes of the Phase 1 and Phase 2 testwork.

⁷ Short-term leach tests will be conducted using deionised water and will include the following analytical suite: pH, EC, Acidity, Alkalinity, SO₄, Cl, F, Nitrogen species (total N, TKN, NO₃, NO₂, and NH₃), Ca, Mg, Na, K, Ag, Al, As, B, Ba, Be, Bi, Ce, Cd, Co, Cr, Cs, Cu, Fe, Ga, Hf, Hg, La, Li, Mn, Mo, Nb, Ni, P, Pb, Rb, Re, Sb, Se, Si, Sn, Sr, Ta, Te, Th, Tl, Ti, U, V, W, Y, Zn and Zr.

Table 3.1: Summary of supplemental static leach testing methods

Leach method	Brief description	Aim
Multi-step deionised (DI) water leach	The test is carried out at S:L ratio of 1:2 – subjecting the sample to up to 10 ¹ rinse cycles (either using an adaptation of the free-draining columns or as sequential bottle rolls).	To assess how the leaching behaviour of low sulfur samples varies with successive leaching cycles.
Low contact ratio leach	Leaching the sample at a contact ratio as low as can be achieved – usually between 1:0.5 and 1:1 S:L.	To provide insight to the controls on leaching, in particular whether a sample is source term limited (i.e. the contaminant is present in a finite and very limited quantity) or solubility controlled (will dissolve partially, until equilibrium has been achieved with the contacting solution).
Mild acid leach	Leaching the sample using a mild sulfuric acid solution (approximately pH 4) over a period of 12 hours (S: L ratio 1:2).	To obtain data describing metal leaching behaviour under mildly acidic conditions.
Saline leach	Leaching the sample at low salinity (e.g. 2 g NaCl/L in DI water) and high salinity (e.g. 10 g NaCl/L in DI water) over a period of 12 hours.	To assess whether the dissolution of elements from the solids is influenced by the salinity of the contacting solution.

Regards
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 Principal Geochemist

Attachments:

Attachment 1 Proposed waste rock and ore-grade samples

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Attachment 1

**Proposed waste rock and ore-grade
samples**

Waste rock samples

Hole ID	From	To	Interval (m)	Sampling priority - from (m)	Sampling priority - to (m)	Sampling priority - interval (m)	Pit	DH type	Waste/Ore Cut off (0.3 ppm Au)	REG_GROUP	ROCK_TYPE_1	WEATHERING
BSDD001	22	24	2	23	23.5	0.5	jinkas	DD	WASTE	LS	tg	pw
BSDD001	58.82	59.59	0.77	-	-	-	jinkas	DD	WASTE		tb	
BSDD001	96	98	2	-	-	-	jinkas	DD	WASTE		tg	
BSDD001	109	111	2	109.5	110	0.5	jinkas	DD	WASTE		ti	
BSDD001	129	131	2	129	129.5	0.5	jinkas	DD	WASTE		tm	
BSDD002	8	10	2	-	-	-	jinkas	DD	no Au assay	ls	tg	sw
BSDD002	17	19	2	-	-	-	jinkas	DD	no Au assay	ls	tg	sw
BSDD002	31	33	2	-	-	-	jinkas	DD	no Au assay	lsa	cy	cw
BSDD002	40	42	2	-	-	-	jinkas	DD	no Au assay	lsa	cy	cw
BSDD002	54	56	2	55	55.5	0.5	jinkas	DD	WASTE		xx	
BSDD004	4	6	2	-	-	-	jinkas	DD	no Au assay	ls	tb	sw
BSDD004	15	17	2	15.5	16	0.5	jinkas	DD	no Au assay	ls	ti	sw
BSDD004	76	78	2	77.5	78	0.5	jinkas	DD	WASTE		ti	
BSDD005	5	6	1	-	-	-	jinkas	DD	no Au assay	ls	tb	pw
BSDD005	16	18	2	-	-	-	jinkas	DD	no Au assay	ls	tg	pw
BSDD005	33	35	2	-	-	-	jinkas	DD	WASTE	ls	tg	ww
BSDD005	104.5	106.43	1.93	105	105.5	0.5	jinkas	DD	WASTE		tb	
BSDD006	0.64	1.95	1.31	-	-	-	jinkas	DD	no Au assay	fk	cy	cw
BSDD006	87	89	2	-	-	-	jinkas	DD	WASTE		tm	
BSDD006	96	98	2	96.5	97	0.5	jinkas	DD	WASTE		tbg	
BSDD006	139	141	2	139	139.5	0.5	jinkas	DD	WASTE		tbg	
BSDD006	142	144	2	143.4	144	0.5	jinkas	DD	WASTE		tb	
BSDD006	146.5	148.5	2	148	148.5	0.5	jinkas	DD	WASTE		xx	
BSDD008	44.7	46.7	2	45.5	46	0.5	dingo	DD	WASTE		tb	fr
BSDD008	47.88	49.17	1.29	-	-	-	dingo	DD	WASTE		xx	
BSDD008	67	69	2	68.5	69	0.5	dingo	DD	WASTE		tm	
BSDD009	20	22	2	-	-	-	dingo	DD	no Au assay	ls	tm	mw
BSDD009	41	43	2	-	-	-	dingo	DD	no Au assay	ls	tm	pw
BSDD009	55	57	2	-	-	-	dingo	DD	no Au assay	ls	tm	pw
BSDD009	80	82	2	80	80.5	0.5	dingo	DD	WASTE		tg	fr
BSDD009	102	104	2	103.5	104	0.5	dingo	DD	WASTE		xx	fr
BSDD016	41	43	2	-	-	-	jinkas	DD	WASTE		tbg	fr
BSDD016	57.9	59.3	1.4	-	-	-	jinkas	DD	WASTE		tg	fr
BSDD016	64	66	2	-	-	-	jinkas	DD	WASTE		tm	fr
BSDD016	109	111	2	109	110	1	jinkas	DD	WASTE		tg	fr
BSDD016	128.5	129.5	1	-	-	-	jinkas	DD	WASTE		tm	fr
BSDD017	109	111	2	-	-	-	jinkas	DD	WASTE		tm	fr
BSDD017	121	123	2	-	-	-	jinkas	DD	WASTE		tg	fr
BSDD018	1	3	2	-	-	-	jinkas	DD	WASTE	lsa	cy	sw
BSDD018	12	15	3	-	-	-	jinkas	DD	WASTE		tbg	ww
BSDD018	86	88	2	-	-	-	jinkas	DD	WASTE		tb	fr
BSDD018	129	131	2	-	-	-	jinkas	DD	WASTE		tb	fr
BSDD018	138	140	2	-	-	-	jinkas	DD	WASTE		tb	fr
BSDD021	5	6.1	1.1	-	-	-	jack	DD	WASTE	lsa	tb	sw
BSDD021	15.9	17.1	1.2	-	-	-	jack	DD	WASTE	lsa	tb	sw
BSDD021	17.1	19	1.9	-	-	-	jack	DD	WASTE	ls	tb	sw
BSDD021	22	24	2	23	23.85	0.85	jack	DD	WASTE		tm	pw
BSDD021	32.33	33.51	1.18	-	-	-	jack	DD	WASTE		gg	ww
BSDD022	4.4	6.6	2.2	-	-	-	jinkas	DD	no Au assay	ls	md	mw
BSDD022	8	10	2	8	9	1	jinkas	DD	no Au assay	ls	md	mw
BSDD022	17	18.5	1.5	18	18.5	0.5	jinkas	DD	no Au assay	ls	md	ww
BSDD022	46	48	2	-	-	-	jinkas	DD	no Au assay		gm	fr
BSDD022	76	78	2	77	78	1	jinkas	DD	WASTE		tm	fr
BSDD023	22	24	2	22	23	1	jack	DD	WASTE	usa	cy	cw
BSDD023	34.72	35.004	0.284	-	-	-	jack	DD	WASTE	ls	tm	mw
BSDD024	1	3	2	-	-	-	jinkas	DD	no Au assay	usa	cy	cw
BSDD024	17	18.7	1.7	18	18.7	0.7	jinkas	DD	WASTE		tg	pw
BSDD024	20	22	2	20	20.5	0.5	jinkas	DD	WASTE	ls	tb	cw
BSDD024	46	48	2	-	-	-	jinkas	DD	WASTE		tm	fr
BSDD026	62.52	64.55	2.03	64.1	64.55	0.45	jinkas	DD	WASTE	ls	tb	mw
BSDD026	98	100	2	-	-	-	jinkas	DD	WASTE		tg	fr
BSDD027	55.5	57.5	2	-	-	-	jinkas	DD	WASTE		tb	fr
BSDD027	61.5	63.5	2	-	-	-	jinkas	DD	WASTE		tg	fr
BSDD027	102.8	104.8	2	-	-	-	jinkas	DD	WASTE		tm	fr
BSDD027	106.52	108.7	2.18	-	-	-	jinkas	DD	WASTE		tg	fr

Hole ID	From	To	Interval (m)	Sampling priority - from (m)	Sampling priority - to (m)	Sampling priority - interval (m)	Pit	DH type	Waste/Ore Cut off (0.3 ppm Au)	REG_GROUP	ROCK_TYPE_1	WEATHERING
BSDD028	12	15	3	-	-	-	jinkas	DD	WASTE	usa	cy	cw
BSDD028	30	33	3	-	-	-	jinkas	DD	WASTE	ls	tg	sw
BSDD028	60	62	2	-	-	-	jinkas	DD	WASTE		tg	pw
BSDD028	62.8	64.2	1.4	63	64	1	jinkas	DD	WASTE		tg	fr
BSDD028	78.9	81.35	2.45	78.9	79.7	0.8	jinkas	DD	WASTE		tg	fr
BSDD031	24	26	2	-	-	-	jinkas	DD	WASTE	ls	tg	pw
BSDD031	36	38	2	-	-	-	jinkas	DD	WASTE	ls	tb	pw
BSDD031	112	114	2	-	-	-	jinkas	DD	WASTE		tm	fr
BSDD032	12	14	2	-	-	-	jinkas	DD	WASTE	usa	cy	cw
BSDD032	39	41	2	-	-	-	jinkas	DD	WASTE	ls	tg	mw
BSDD032	59	61	2	60	60.5	0.5	jinkas	DD	WASTE		tm	fr
BSDD032	150	152	2	150.5	151	0.5	jinkas	DD	WASTE		ts	fr
BSDD032	162.6	164.4	1.8	-	-	-	jinkas	DD	WASTE		ti	fr
BSDD032	164.49	166	1.51	-	-	-	jinkas	DD	WASTE		tb	fr
BSDD033	22	24	2	-	-	-	dingo	DD	WASTE	usa	cy	sw
BSDD033	40	42	2	-	-	-	dingo	DD	WASTE	ls	tm	mw
BSDD033	50	52	2	50	51	1	dingo	DD	WASTE	ls	tb	ww
BSDD033	70	72	2	70	71	1	dingo	DD	WASTE		tm	fr
BSDD034	0	2	2	-	-	-	dingo	DD	no Au assay	fk	zl	cw
BSDD035	1	3	2	-	-	-	dingo	DD	no Au assay	fk	zl	cw
BSDD035	45	47	2	-	-	-	dingo	DD	WASTE	lsa	cy	cw
BSDD035	48	50	2	48	48.75	0.75	dingo	DD	WASTE	ls	ti	pw
BSDD036	0	0.1	0.1	-	-	-	jinkas	DD	no Au assay	sl	zs	cw
BSDD036	11	13	2	-	-	-	jinkas	DD	no Au assay	usa	cy	cw
BSDD036	54	56	2	54	55	1	jinkas	DD	WASTE		tb	fr
BSDD036	87	89	2	-	-	-	jinkas	DD	WASTE		tg	fr
BSDD036	121	123	2	122.52	123	0.48	jinkas	DD	WASTE		tm	fr
BSDD037	50	52	2	-	-	-	jinkas	DD	WASTE	ls	gm	ww
BSDD037	80	81.53	1.53	-	-	-	jinkas	DD	WASTE		ti	fr
BSDD037	83	84.3	1.3	83	84	1	jinkas	DD	WASTE		tm	fr
BSDD038	0	1	1	-	-	-	jinkas	DD	no Au assay	sl	zx	cw
BSDD038	13	15	2	-	-	-	jinkas	DD	no Au assay	lsa	cy	sw
BSDD038	65	67	2	-	-	-	jinkas	DD	WASTE		tm	fr
BSDD038	96	98	2	-	-	-	jinkas	DD	WASTE		ti	fr
BSDD039	17	19	2	-	-	-	jinkas	DD	no Au assay	ls	tb	ww
BSDD039	47	49	2	-	-	-	jinkas	DD	no Au assay		tb	fr
BSDD040	1	3	2	-	-	-	jinkas	DD	no Au assay	usa	cy	cw
BSDD040	64	66	2	-	-	-	jinkas	DD	WASTE		gm	fr
BSDD041	1	2	1	-	-	-	jinkas	DD	WASTE	ls	gg	sw
BSDD041	8	10	2	8.07	9.11	1.04	jinkas	DD	WASTE	usa	cy	cw
BSDD041	14	15.98	1.98	15.17	15.67	0.5	jinkas	DD	WASTE	ls	tg	sw
BSDD042	28	30	2	-	-	-	jinkas	DD	WASTE	ls	ts	pw
BSDD044	26.89	28.3	1.41	27.8	28.3	0.5	dingo	DD	WASTE	lsa	cy	sw
BSDD044	28.31	29	0.69	-	-	-	dingo	DD	WASTE	ls	tm	mw
BSDD044	35	37	2	-	-	-	dingo	DD	WASTE	ls	ts	mw
BSDD044	52.83	54.2	1.37	-	-	-	dingo	DD	WASTE	ls	tg	mw
BSDD044	64.08	65.6	1.52	64.08	65	0.92	dingo	DD	WASTE		xx	fr
BSDD044	66	68	2	-	-	-	dingo	DD	WASTE		tm	fr
BSDD044	71.88	72.17	0.29	-	-	-	dingo	DD	WASTE		md	fr
BSDD046	18	20	2	-	-	-	jinkas	DD	WASTE	lsa	cy	sw
BSDD047	17.11	19	1.89	-	-	-	jack	DD	WASTE	ls	ti	mw
BSDD047	30.82	32.89	2.07	-	-	-	jack	DD	WASTE	ls	ts	mw
BSDD047	34	36	2	35.5	36	0.5	jack	DD	WASTE	ls	tg	mw
BSDD048	0	0.28	0.28	-	-	-	jack	DD	no Au assay	sl	zs	sw
BSDD048	13	14.43	1.43	-	-	-	jack	DD	no Au assay	ls	tg	mw
BSDD048	16	18	2	-	-	-	jack	DD	no Au assay	ls	tm	mw
BSDD048	23	25	2	-	-	-	jack	DD	WASTE	lsa	cy	sw
BSDD048	57	59	2	-	-	-	jack	DD	WASTE		ti	fr
BSRC0096	22	24	2	-	-	-	dingo	RC	WASTE	ls	tb	sw
BSRC0115	2	4	2	2	3	1	dingo	RC	WASTE	fk	zl	cw
BSRC0124	77	80	3	79	80	1	jack	RC	WASTE		gm	fr
BSRC0130	69	71	2	69	70	1	jack	RC	WASTE		gm	fr
BSRC0131	56	58	2	56	57	1	jack	RC	WASTE		gm	fr
BSRC0143	61	63	2	-	-	-	jack	RC	WASTE		gm	fr
BSRC0147	58	60	2	-	-	-	jack	RC	WASTE		tb	fr
BSRC0187	62	64	2	-	-	-	dingo	RC	WASTE		xx	fr

Hole ID	From	To	Interval (m)	Sampling priority - from (m)	Sampling priority - to (m)	Sampling priority - interval (m)	Pit	DH type	Waste/Ore Cut off (0.3 ppm Au)	REG_GROUP	ROCK_TYPE_1	WEATHERING
BSRC0187	66	68	2	-	-	-	dingo	RC	WASTE		ts	fr
BSRC0233	69	71	2	69	70	1	jack	RC	WASTE		tm	fr
BSRC0234	56	58	2	-	-	-	jack	RC	WASTE		gm	fr
BSRC0251	26	28	2	-	-	-	jack	RC	WASTE	ls	ts	mw
BSRC0320	74	76	2	-	-	-	jinkas	RC	WASTE		tb	fr
BSRC0453	6	8	2	-	-	-	jinkas	RC	WASTE	ls	tb	sw
BSRC0453	43	45	2	-	-	-	jinkas	RC	WASTE		tb	fr
BSRC0494	18	20	2	-	-	-	jack	RC	WASTE	ls	md	sw
BSRC0498	21	23	2	-	-	-	oly	RC	WASTE	ls	tb	mw
BSRC0540	31	33	2	-	-	-	oly	RC	WASTE		tg	fr
BSRC0598	36	38	2	-	-	-	jack	RC	WASTE		tg	fr
BSRC0599	46	48	2	-	-	-	jack	RC	WASTE		tg	fr
BSRC0616	98	100	2	-	-	-	jinkas	RC	WASTE		tg	fr
BSRC0629	109	111	2	-	-	-	jack	RC	WASTE		tb	fr
BSRC0663	4	7	3	-	-	-	jinkas	RC	WASTE	lsa	tg	cw
BSRC0676	10	12	2	-	-	-	jinkas	RC	WASTE	lsa	tg	cw
BSRC0680	22	24	2	-	-	-	jinkas	RC	WASTE	lsa	cy	cw
BSRC0765	0	2	2	-	-	-	jinkas	RC	WASTE	fk	zs	cw
BSRC0948	13	15	2	-	-	-	oly	RC	WASTE	lsa	cy	cw
BSRC0955	45	48	3	-	-	-	oly	RC	WASTE		tg	fr
BSRC0956	12	15	3	-	-	-	oly	RC	WASTE	lsa	cy	cw
BSRC0995	97	99	2	-	-	-	jinkas	RC	WASTE		md	fr
BSRC1018	5	7	2	-	-	-	jinkas	RC	WASTE		zx	pw
BSRC1064	10	12	2	-	-	-	jack	RC	WASTE		gm	sw
BSRC1102	6	8	2	-	-	-	jinkas	RC	WASTE		zx	cw
BSRC1133	18	20	2	-	-	-	oly	RC	WASTE	usa	cy	cw
BSRC1181	43	45	2	-	-	-	jinkas	RC	WASTE		tb	ww
BSRC1260	2	4	2	-	-	-	jinkas	RC	WASTE	mz	cy	cw
BSRC1279	22	24	2	-	-	-	jinkas	RC	WASTE	ls	gm	mw
BSRC1286	11	13	2	-	-	-	jack	RC	WASTE	ls	gm	pw
BSRC1350	30	32	2	-	-	-	jack	RC	WASTE	ls	gm	pw
BSRC1355	4	6	2	-	-	-	oly	RC	WASTE	ls	gm	pw
BSRC1357	6	8	2	-	-	-	oly	RC	WASTE	lsa	cy	sw
BSRC1431	2	4	2	-	-	-	jack	RC	WASTE		gm	ww
BSRC1432	35	37	2	35	36	1	jack	RC	WASTE		xx	fr
BSRC1442	16	18	2	-	-	-	jack	RC	WASTE		gm	mw
BSRC1447	3	5	2	-	-	-	oly	RC	WASTE	usa	cy	sw
BSRC1447	22	24	2	-	-	-	oly	RC	WASTE	lsa	tb	mw
BSRC1447	27	29	2	-	-	-	oly	RC	WASTE	ls	gm	mw
BSRC1450	56	58	2	-	-	-	oly	RC	WASTE		gm	fr
BSRC1451	65	67	2	-	-	-	oly	RC	WASTE		gm	fr
BSRC1451	75	76	1	-	-	-	oly	RC	WASTE		tm	fr
BSRC1501	21	23	2	-	-	-	oly	RC	WASTE	ls	tg	mw
BSRC1561	45	47	2	-	-	-	jinkas	RC	WASTE	ls	tg	mw
BSRC1594	46	48	2	46	47	1	jinkas	RC	WASTE	ls	gm	mw
BSRC1599	78	80	2	-	-	-	jinkas	RC	WASTE		tb	fr
BSRC1599	90	92	2	-	-	-	jinkas	RC	WASTE		tg	fr
BSRC1602	18	20	2	-	-	-	jack	RC	WASTE	ls	tb	mw
BSRC1616	47	49	2	-	-	-	jinkas	RC	WASTE	ls	tb	mw

Ore-grade samples

Hole ID	From (m)	To (m)	Interval (m)	Pit	DH type	Waste/Ore	REG_GROUP	ROCK_TYPE_1	ROCK_TYPE_1_VARIANT	WEATHERING
BSDD001	24.5	25	0.5	jinkas	DD_collar	ORE	LS	tg		sw
BSDD009	89	89.5	0.5	dingo	DD_collar	ORE		tm	si	fr
BSDD009	98	98.5	0.5	dingo	DD_collar	ORE		tm		fr
BSDD009	100	100.5	0.5	dingo	DD_collar	ORE		tm		fr
BSDD041	2.46	4.8	2.34	jinkas	DD_collar	ORE	usa	cy		cw
BSDD044	56.18	58	1.82	dingo	DD_collar	ORE		tm	px	fr
BSDD047	27.69	28.47	0.78	jackson	DD_collar	ORE	ls	tm		mw
BSDD047	36.12	36.62	0.5	jackson	DD_collar	ORE	ls	tf		mw
BSDD048	25.4	26.05	0.65	jackson	DD_collar	ORE	lsa	cy		sw
BSDD048	51.81	52.37	0.56	jackson	DD_collar	ORE		ti	px	fr
BSDD024	60	60.8	0.8	jinkas	DD_collar	ORE		ti		fr
BSDD031	66.87	67.87	1	jinkas	DD_collar	ORE		tbg		fr
BSDD001	80	81.5	1.5	jinkas	DD_collar	ORE		tm		fr
BSDD005	59	59.5	0.5	jinkas	DD_collar	ORE		ti		fr

Appendix B Sample list and descriptions

Appendix B - Sample list and description

AusGold sample number	SRK sample ID	Drillhole ID	Sampled from (m)	Sampled to (m)	Rock type	Rock type description	Drillhole type	Grade	Pit	Weathering code	Weathering description	Sample mass (kg)
AA206460	BSDD035_45_47	BSDD035	45	47	cy	Clay	DD	Waste	Dingo	cw	Completely weathered	0.8
AA264400	BSDD041_8_10	BSDD041	8	10	cy	Clay	DD	Waste	Jinkas	cw	Completely weathered	8.95
AA192166	BSDD002_31_33	BSDD002	31	33	cy	Clay	DD	Waste	Jinkas	cw	Completely weathered	4.3
AA195333	BSDD006_0.64_1.95	BSDD006	0.64	1.95	cy	Clay	DD	Waste	Jinkas	cw	Completely weathered	4
AA206040	BSDD032_12_14	BSDD032	12	14	cy	Clay	DD	Waste	Jinkas	cw	Completely weathered	0.9
AA275475	BSDD040_1.2_2	BSDD040	1.2	2	cy	Clay	DD	Waste	Jinkas	cw	Completely weathered	4.18
AA223341, AA223342	BSRC1260_2_4	BSRC1260	2	4	cy	Clay	RC pulp	Waste	Jinkas	cw	Completely weathered	0.816
AA192180	BSDD002_40_42	BSDD002	40	42	cy	Clay	DD	Waste	Jinkas	cw	Completely weathered	3.2
AA206499	BSDD036_11.17_13	BSDD036	11.17	13	cy	Clay	DD	Waste	Jinkas	cw	Completely weathered	5.49
AA206020	BSDD024_1_3	BSDD024	1	3	cy	Clay	DD	Waste	Jinkas	cw	Completely weathered	4
BB033363	BSRC0956_12_15	BSRC0956	12	15	cy	Clay	RC pulp	Waste	Olympia	cw	Completely weathered	0.221
AA166663, AA166664	BSRC0948_13_15	BSRC0948	13	15	cy	Clay	RC pulp	Waste	Olympia	cw	Completely weathered	0.35
AA203067, AA203068	BSRC1133_18_20	BSRC1133	18	20	cy	Clay	RC pulp	Waste	Olympia	cw	Completely weathered	0.232
AA275350	BSDD044_26.89_28.3	BSDD044	26.89	28.3	cy	Clay	DD	Waste	Dingo	sw	Strongly Weathered	2.52
AA263825	BSDD033_22_24	BSDD033	22	24	cy	Clay	DD	Waste	Dingo	sw	Strongly Weathered	1.67
AA275700	BSDD048_23_25	BSDD048	23	25	cy	Clay	DD	Waste	Jackson	sw	Strongly Weathered	2.02
AA205900	BSDD038_13_14.81	BSDD038	13	14.81	cy	Clay	DD	Waste	Jinkas	sw	Strongly Weathered	9.92
AA275525	BSDD046_18_20	BSDD046	18	20	cy	Clay	DD	Waste	Jinkas	sw	Strongly Weathered	1.75
AA245517, AA245518	BSRC1447_3_5	BSRC1447	3	5	cy	Clay	RC pulp	Waste	Olympia	sw	Strongly Weathered	0.708
AA235088, AA235089	BSRC1357_6_8	BSRC1357	6	8	cy	Clay	RC pulp	Waste	Olympia	sw	Strongly Weathered	0.775
AA264375	BSDD041_1_2	BSDD041	1	2	gg	Granite	DD	Waste	Jinkas	sw	Strongly Weathered	8.85
AA030653, AA030654	BSRC0130_69_71	BSRC0130	69	71	gm	Monzogranite	RC pulp	Waste	Jackson	fr	Fresh	0.291
AA55721, AA55722	BSRC0234_56_58	BSRC0234	56	58	gm	Monzogranite	RC pulp	Waste	Jackson	fr	Fresh	0.224
AA030056, AA030058	BSRC0124_77_78_79_80	BSRC0124	77	80	gm	Monzogranite	RC pulp	Waste	Jackson	fr	Fresh	0.243
AA030750, AA030752	BSRC0131_56_58	BSRC0131	56	58	gm	Monzogranite	RC pulp	Waste	Jackson	fr	Fresh	0.253
AA031641, AA031642	BSRC0143_61_63	BSRC0143	61	63	gm	Monzogranite	RC pulp	Waste	Jackson	fr	Fresh	0.198
AA275500	BSDD040_64_66	BSDD040	64	66	gm	Monzogranite	DD	Waste	Jinkas	fr	Fresh	3.05
AA273175	BSDD022_47.3_47.8	BSDD022	47.3	47.8	gm	Monzogranite	DD	Waste	Jinkas	fr	Fresh	4.8
AA245823, AA245824	BSRC1451_65_67	BSRC1451	65	67	gm	Monzogranite	RC pulp	Waste	Olympia	fr	Fresh	0.974
AA245735, AA245736	BSRC1450_56_58	BSRC1450	56	58	gm	Monzogranite	RC pulp	Waste	Olympia	fr	Fresh	0.83
AA244999, AA245001	BSRC1442_16_18	BSRC1442	16	18	gm	Monzogranite	RC pulp	Waste	Jackson	mw	Moderately weathered	0.991
AA225833, AA225834	BSRC1279_22_24	BSRC1279	22	24	gm	Monzogranite	RC pulp	Waste	Jinkas	mw	Moderately weathered	1.058
AA270171, AA270172	BSRC1594_46_48	BSRC1594	46	48	gm	Monzogranite	RC pulp	Waste	Jinkas	mw	Moderately weathered	0.94
AA245544, AA245545	BSRC1447_27_29	BSRC1447	27	29	gm	Monzogranite	RC pulp	Waste	Olympia	mw	Moderately weathered	0.771
AA239271, AA239272	BSRC1350_30_32	BSRC1350	30	32	gm	Monzogranite	RC pulp	Waste	Jackson	pw	Partly Weathered	1.114
AA226479, AA226481	BSRC1286_11_13	BSRC1286	11	13	gm	Monzogranite	RC pulp	Waste	Jackson	pw	Partly Weathered	0.935
AA239941, AA239942	BSRC1355_4_6	BSRC1355	4	6	gm	Monzogranite	RC pulp	Waste	Olympia	pw	Partly Weathered	0.967
AA185053, AA185054	BSRC1064_10_12	BSRC1064	10	12	gm	Monzogranite	RC pulp	Waste	Jackson	sw	Strongly Weathered	0.351
AA204760	BSDD037_50_52	BSDD037	50	52	gm	Monzogranite	DD	Waste	Jinkas	ww	Weaky weathered	7.56
AA174337, AA174338	BSRC0995_97_99	BSRC0995	97	99	md	Dolerite	RC pulp	Waste	Jinkas	fr	Fresh	0.538
AA275375	BSDD022_4.4_4.8	BSDD022	4.4	4.8	md	Dolerite	DD	Waste	Jinkas	mw	Moderately weathered	6
AA273200	BSDD022_8_8.5	BSDD022	8	8.5	md	Dolerite	DD	Waste	Jinkas	mw	Moderately weathered	4.37
AA95154, AA95155	BSRC0494_18_20	BSRC0494	18	20	md	Dolerite	RC pulp	Waste	Jackson	sw	Strongly Weathered	0.364
AA273350	BSDD022_18_18.5	BSDD022	18	18.5	md	Dolerite	DD	Waste	Jinkas	ww	Weaky weathered	5
AA205999	BSDD024_19.5_22	BSDD024	19.5	22	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	cw	Completely weathered	4.3
AA196660	BSDD008_44.7_46	BSDD008	44.7	46	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Dingo	fr	Fresh	3.6
AA121581	BSRC0629_110_111	BSRC0629	110	111	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jackson	fr	Fresh	0.195
AA032011, AA032012	BSRC0147_58_60	BSRC0147	58	60	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jackson	fr	Fresh	0.209
AA206500	BSDD036_54_56	BSDD036	54	56	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	3.78
AA264000	BSDD018_138_140	BSDD018	138	140	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.6
AA038015, AA038016	BSRC0320_74_76	BSRC0320	74	76	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jinkas	fr	Fresh	0.43
AA196120	BSDD006_142_144	BSDD006	142	144	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.4
AA264350	BSDD018_86_88	BSDD018	86	88	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.94
AA258900	BSDD027_55.5_57.5	BSDD027	55.5	57.5	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	5.4
AA272156, AA272157	BSRC1599_78_80	BSRC1599	78	80	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jinkas	fr	Fresh	1.001
AA88574, AA88575	BSRC0453_43_45	BSRC0453	43	45	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jinkas	fr	Fresh	0.308
AA263975	BSDD018_129_131	BSDD018	129	131	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.8
AA192899	BSDD005_105_105.5	BSDD005	105	105.5	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.2
AA206433	BSDD032_164.46_166	BSDD032	164.46	166	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	2.85
AA191860	BSDD001_58.82_59.59	BSDD001	58.82	59.59	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.2
AA258575	BSDD039_47.94_48.75	BSDD039	47.94	48.75	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	5.4
AA272573, AA272574	BSRC1602_18_20	BSRC1602	18	20	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jackson	mw	Moderately weathered	0.947
AA258600	BSDD026_62.52_64.55	BSDD026	62.52	64.55	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	mw	Moderately weathered	2.9
AA275249, AA275251	BSRC1616_47_49	BSRC1616	47	49	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jinkas	mw	Moderately weathered	1.212
AA90177, AA90178	BSRC0498_21_23	BSRC0498	21	23	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Olympia	mw	Moderately weathered	0.334
AA245538, AA245539	BSRC1447_22_24	BSRC1447	22	24	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Olympia	mw	Moderately weathered	0.639
AA263775	BSDD031_36_38	BSDD031	36	38	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	pw	Partly Weathered	2.04
AA192860	BSDD005_5_6	BSDD005	5	6	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	pw	Partly Weathered	4.4
AA26244, AA26245	BSRC0096_22_24	BSRC0096	22	24	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Dingo	sw	Strongly Weathered	0.254
AA192820	BSDD004_4_5.8	BSDD004	4	5.8	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	sw	Strongly Weathered	4.4
AA88535, AA88536	BSRC0453_6_8	BSRC0453	6	8	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jinkas	sw	Strongly Weathered	0.257
AA263875	BSDD033_50_52	BSDD033	50	52	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Dingo	ww	Weaky weathered	3.1
AA205920	BSDD039_17_18.5	BSDD039	17	18.5	tb	Biotite (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	ww	Weaky weathered	5.19
AA210979, AA210981	BSRC1181_43_45	BSRC1181	43	45	tb	Biotite (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jinkas	ww	Weaky weathered	0.587
AA204560	BSDD016_41_43.5	BSDD016	41	43.5	tbg	Biotite garnet gneiss	DD	Waste	Jinkas	fr	Fresh	4
AA195700	BSDD006_139_141	BSDD006	139	141	tbg	Biotite garnet gneiss	DD	Waste	Jinkas	fr	Fresh	5.5
AA195699	BSDD006_96_98	BSDD006	96	98	tbg	Biotite garnet gneiss	DD	Waste	Jinkas	fr	Fresh	4.8
AA128029	BSRC0663_4_8	BSRC0663	4	8	tg	Garnet (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jinkas	cw	Completely weathered	0.268
BB022189, BB022190	BSRC0676_10_12	BSRC0676	10	12	tg	Garnet (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jinkas	cw	Completely weathered	0.242
AA204533	BSDD009_80_81.2	BSDD009	80	81.2	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Dingo	fr	Fresh	3
AA114832, AA114834	BSRC0598_36_38	BSRC0598	36	38	tg	Garnet (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jackson	fr	Fresh	0.394
AA119692, AA119693	BSRC0599_46_48	BSRC0599	46	48	tg	Garnet (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jackson	fr	Fresh	0.377
AA272169, AA272170	BSRC1599_90_92	BSRC1599	90	92	tg	Garnet (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jinkas	fr	Fresh	0.941
AA191900	BSDD001_96_98	BSDD001	96	98	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.1
AA258625	BSDD026_98_100	BSDD026	98	100	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	3.53
AA204566	BSDD016_57_59.85	BSDD016	57	59.85	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4
AA258925	BSDD027_61.5_63.5	BSDD027	61.5	63.5	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	6.83
AA275425	BSDD028_62.8_64.2	BSDD028	62.8	64.2	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	2.16
AA204733	BSDD036_87_89	BSDD036	87	89	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	7.4
AA205966	BSDD017_121_123	BSDD017	121	123	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.5
AA205933	BSDD016_109_111.5	BSDD016	109	111.5	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.1
AA261800	BSDD027_106.52_108.7	BSDD027	106.52	108.7	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	3.36
AA116083, AA116084	BSRC0616_98_100	BSRC0616	98	100	tg	Garnet (dominant) quartz granulite (gneiss)	RC pulp	Waste	Jinkas	fr	Fresh	0.359
BB033348	BSRC0955_44_48	BSRC0955	44	48	tg	Garnet (dominant) quartz granulite (gneiss)	RC pulp	Waste	Olympia	fr	Fresh	0.308
AA277275	BSDD044_52.83_54.2	BSDD044	52.83	54.2	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Dingo	mw	Moderately weathered	0.88
AA275600	BSDD047_34_36	BSDD047	34	36	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jackson	mw	Moderately weathered	5.55
AA275650	BSDD048_13_14.43	BSDD048	13	14.43	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jackson	mw	Moderately weathered	1.88
AA206060	BSDD032_39_41	BSDD032	39	41	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	mw	Moderately weathered	1.2
AA191780	BSDD001_22_24	BSDD001	22	24	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	pw	Partly Weathered	4.8
AA192866</												

Appendix B - Sample list and description

AusGold sample number	SRK sample ID	Drillhole ID	Sampled from (m)	Sampled to (m)	Rock type	Rock type description	Drillhole type	Grade	Pit	Weathering code	Weathering description	Sample mass (kg)
AA263750	BSDD031_24_26	BSDD031	24	26	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	pw	Partly Weathered	2.92
AA191940	BSDD002_8_10	BSDD002	8	10	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	sw	Strongly Weathered	4
AA192160	BSDD002_17_19	BSDD002	17	19	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	sw	Strongly Weathered	4.6
AA272775	BSDD041_14_15.98	BSDD041	14	15.98	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Waste	Jinkas	sw	Strongly Weathered	3.03
AA277550	BSDD048_57_59	BSDD048	57	59	ti	Intermediate granulite (gneiss)	DD	Waste	Jackson	fr	Fresh	6.2
AA192840	BSDD004_76_78	BSDD004	76	78	ti	Intermediate granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	5.1
AA206400	BSDD032_163_164	BSDD032	163	164	ti	Intermediate granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	1.3
AA205866	BSDD037_80_81.53	BSDD037	80	81.53	ti	Intermediate granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	5.8
AA191920	BSDD001_109_111	BSDD001	109	111	ti	Intermediate granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4
AA263925	BSDD038_96.6_97.8	BSDD038	96.6	97.8	ti	Intermediate granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.68
AA275550	BSDD047_17.11_19	BSDD047	17.11	19	ti	Intermediate granulite (gneiss)	DD	Waste	Jackson	mw	Moderately weathered	4.1
AA206466	BSDD035_48_49.74	BSDD035	48	49.74	ti	Intermediate granulite (gneiss)	DD	Waste	Dingo	pw	Partly Weathered	0.788
AA192833	BSDD004_15_17	BSDD004	15	17	ti	Intermediate granulite (gneiss)	DD	Waste	Jinkas	sw	Strongly Weathered	4.1
AA275725	BSDD044_66_68	BSDD044	66	68	tm	Mafic granulite (gneiss)	DD	Waste	Dingo	fr	Fresh	3.62
AA263900	BSDD033_70_72	BSDD033	70	72	tm	Mafic granulite (gneiss)	DD	Waste	Dingo	fr	Fresh	3.88
AA204480	BSDD008_67_69	BSDD008	67	69	tm	Mafic granulite (gneiss)	DD	Waste	Dingo	fr	Fresh	4.1
AA55593, AA55594	BSRC0233_69_71	BSRC0233	69	71	tm	Mafic granulite (gneiss)	RC pulp	Waste	Jackson	fr	Fresh	0.257
	BSDD016_128_130	BSDD016	128	130	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	3.2
AA258950	BSDD027_102.8_104.8	BSDD027	102.8	104.8	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.21
AA205880	BSDD037_83.4_84	BSDD037	83.4	84	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.22
AA195640	BSDD006_87_89	BSDD006	87	89	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.9
AA263800	BSDD031_112_114	BSDD031	112	114	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	3.27
AA204740	BSDD036_121_123	BSDD036	121	123	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	3.5
AA263950	BSDD038_65_66.15	BSDD038	65	66.15	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	3.83
AA204580	BSDD016_64_67	BSDD016	64	67	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.6
AA205960	BSDD017_109_111	BSDD017	109	111	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	5
AA206080	BSDD032_59.12_60.5	BSDD032	59.12	60.5	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	1.3
AA275000	BSDD022_76_78	BSDD022	76	78	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	3.91
AA205980	BSDD024_46_48.6	BSDD024	46	48.6	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.2
AA191933	BSDD001_129_131	BSDD001	129	131	tm	Mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	4.1
AA245834	BSRC1451_75_76	BSRC1451	75	76	tm	Mafic granulite (gneiss)	RC pulp	Waste	Olympia	fr	Fresh	0.46
AA263850	BSDD033_40_42	BSDD033	40	42	tm	Mafic granulite (gneiss)	DD	Waste	Dingo	mw	Moderately weathered	2.56
AA204499	BSDD009_20.6_21.5	BSDD009	20.6	21.5	tm	Mafic granulite (gneiss)	DD	Waste	Dingo	mw	Moderately weathered	4.4
AA277300	BSDD044_28.31_29	BSDD044	28.31	29	tm	Mafic granulite (gneiss)	DD	Waste	Dingo	mw	Moderately weathered	1.24
AA275675	BSDD048_16_18	BSDD048	16	18	tm	Mafic granulite (gneiss)	DD	Waste	Jackson	mw	Moderately weathered	3.5
AA204500	BSDD009_41.6_41.8	BSDD009	41.6	41.8	tm	Mafic granulite (gneiss)	DD	Waste	Dingo	pw	Partly Weathered	2.9
AA204520	BSDD009_55.3_55.6	BSDD009	55.3	55.6	tm	Mafic granulite (gneiss)	DD	Waste	Dingo	pw	Partly Weathered	4.2
AA48494, AA48495	BSRC0187_66_68	BSRC0187	66	68	ts	Speckled mafic granulite (gneiss)	RC pulp	Waste	Dingo	fr	Fresh	0.151
AA206180	BSDD032_150_152	BSDD032	150	152	ts	Speckled mafic granulite (gneiss)	DD	Waste	Jinkas	fr	Fresh	3.2
AA277400	BSDD044_35_37	BSDD044	35	37	ts	Speckled mafic granulite (gneiss)	DD	Waste	Dingo	mw	Moderately weathered	2.04
AA56616, AA56617	BSRC0251_26_28	BSRC0251	26	28	ts	Speckled mafic granulite (gneiss)	RC pulp	Waste	Jackson	mw	Moderately weathered	0.208
	BSDD047_30.82_32.89	BSDD047	30.82	32.89	ts	Speckled mafic granulite (gneiss)	DD	Waste	Jackson	mw	Moderately weathered	3.65
AA272800	BSDD042_28_30	BSDD042	28	30	ts	Speckled mafic granulite (gneiss)	DD	Waste	Jinkas	pw	Partly Weathered	4.37
AA275750	BSDD044_64.08_65.6	BSDD044	64.08	65.6	xx	Calc-silicate rock	DD	Waste	Dingo	fr	Fresh	2.4
AA204466	BSDD008_47.88_49.17	BSDD008	47.88	49.17	xx	Calc-silicate rock	DD	Waste	Dingo	fr	Fresh	3.8
AA48491	BSRC0187_63_64	BSRC0187	63	64	xx	Calc-silicate rock	RC pulp	Waste	Dingo	fr	Fresh	0.55
AA204540	BSDD009_103.5_103.8	BSDD009	103.5	103.8	xx	Calc-silicate rock	DD	Waste	Dingo	fr	Fresh	3.2
AA192460	BSDD002_54_55.6	BSDD002	54	55.6	xx	Calc-silicate rock	DD	Waste	Jinkas	fr	Fresh	4.1
AA196640	BSDD006_146.5_148.5	BSDD006	146.5	148.5	xx	Calc-silicate rock	DD	Waste	Jinkas	fr	Fresh	4.2
AA029018, AA029019	BSRC0115_2_4	BSRC0115	2	4	zl	Lateritic duricrust	RC pulp	Waste	Dingo	cw	Completely weathered	0.142
AA275450	BSDD034_0.8_1.5	BSDD034	0.8	1.5	zl	Lateritic duricrust	DD	Waste	Dingo	cw	Completely weathered	9.92
AA206440	BSDD035_1.5_3	BSDD035	1.5	3	zl	Lateritic duricrust	DD	Waste	Dingo	cw	Completely weathered	3.9
AA206480	BSDD036_0_0.1	BSDD036	0	0.1	zs	Soil	DD	Waste	Jinkas	cw	Completely weathered	0.97
AA137144, AA137144	BSRC0765_0_2	BSRC0765	0	2	zs	Soil	RC pulp	Waste	Jinkas	cw	Completely weathered	0.302
AA275625	BSDD048_0_0.28	BSDD048	0	0.28	zs	Soil	DD	Waste	Jackson	sw	Strongly Weathered	2.43
AA195223, AA195224	BSRC1102_6_8	BSRC1102	6	8	zx	Exotic overburden (roadbase)	RC pulp	Waste	Jinkas	cw	Completely weathered	0.238
AA205899	BSDD038_0_1	BSDD038	0	1	zx	Exotic overburden (roadbase)	DD	Waste	Jinkas	cw	Completely weathered	3
AA177501, AA177502	BSRC1018_5_7	BSRC1018	5	7	zx	Exotic overburden (roadbase)	RC pulp	Waste	Jinkas	pw	Partly Weathered	0.299
AA278025	BSDD041_2.46_4.8_ore	BSDD041	2.46	4.8	cy	Clay	DD	Ore	Jinkas	cw	Completely weathered	2.78
AA278000	BSDD048_25.4_26.05_ore	BSDD048	25.4	26.05	cy	Clay	DD	Ore	Jackson	sw	Strongly Weathered	4.09
AA278275	BSDD031_66.87_67.87_ore	BSDD031	66.87	67.87	tbg	Biotite garnet gneiss	DD	Ore	Jinkas	fr	Fresh	4.03
AA280650	BSDD047_36.12_36.62_ore	BSDD047	36.12	36.62	tf	Felsic granulite (gneiss)	DD	Ore	Jackson	mw	Moderately weathered	1.65
AA278100	BSDD001_24.5_25_ore	BSDD001	24.5	25	tg	Garnet (dominant) quartz granulite (gneiss)	DD	Ore	Jinkas	pw	Partly Weathered	2
AA280675	BSDD048_51.81_52.37_ore	BSDD048	51.81	52.37	ti	Intermediate granulite (gneiss)	DD	Ore	Jackson	fr	Fresh	1.68
AA278050	BSDD005_59_59.5_ore	BSDD005	59	59.5	ti	Intermediate granulite (gneiss)	DD	Ore	Jinkas	fr	Fresh	3.67
AA278125	BSDD024_60_60.8_ore	BSDD024	60	60.8	ti	Intermediate granulite (gneiss)	DD	Ore	Jinkas	fr	Fresh	1.6
AA277600	BSDD009_89_89.5_ore	BSDD009	89	89.5	tm	Mafic granulite (gneiss)	DD	Ore	Dingo	fr	Fresh	2.62
AA277975	BSDD009_100_100.5_ore	BSDD009	100	100.5	tm	Mafic granulite (gneiss)	DD	Ore	Dingo	fr	Fresh	3.55
AA277950	BSDD009_98_98.5_ore	BSDD009	98	98.5	tm	Mafic granulite (gneiss)	DD	Ore	Dingo	fr	Fresh	3.87
AA277575	BSDD008_51.73_52.73_ore	BSDD008	51.73	52.73	tm	Mafic granulite (gneiss)	DD	Ore	Dingo	fr	Fresh	4.9
AA278075	BSDD001_80_81.5_ore	BSDD001	80	81.5	tm	Mafic granulite (gneiss)	DD	Ore	Jinkas	fr	Fresh	3.5
AA278300	BSDD047_27.69_28.47_ore	BSDD047	27.69	28.47	tm	Mafic granulite (gneiss)	DD	Ore	Jackson	mw	Moderately weathered	2.83

Appendix C Laboratory methods

The tests carried out as part of the geochemical characterisation programme and calculations used to assist in evaluating the acid base accounting parameters of the samples are shown in Table 1 and Table 2 respectively.

Table 1: Parameters measured and description of method

Parameter	Description
Paste pH (1:2) Waste rock and ore samples	pH measurements are performed on a 1:2 solid/water extract.
Paste EC (1:2) Waste rock and ore samples	Electrical conductivity measurements are performed on a 1:2 solid/water extract.
Paste pH (1:5) Soil samples	pH is determined in a 1:5 solid/water extract.
Paste EC (1:5) Soil samples	Electrical conductivity is measured in a 1:5 solid/water extract.
Acid neutralising capacity (ANC)	Determined by adding hydrochloric acid (HCl) to the sample, heating it, and then back-titrating the mixture with sodium hydroxide (NaOH) in order to determine the amount of HCl that remains on completion of the reaction. The amount of acid consumed in the initial reaction is calculated and expressed as the ANC. Details of the procedure are outlined in the AMIRA International ARD Test Handbook (AMIRA, 2002).
Total carbon/sulfur	The sample is combusted in oxygen in a Leco furnace at 1350°C. Carbon/sulfur present in the sample is evolved as carbon dioxide/sulfur dioxide and swept to a measurement cell for quantification by infrared detection.
Total organic carbon	Inorganic carbon (carbonates, bicarbonates) is removed by reaction with dilute HCl. After drying, the remaining sample is combusted in oxygen in a Leco furnace at 1350°C. Any organic carbon in the sample present as organic matter or graphite is evolved as carbon dioxide and swept to a cell for quantification by infrared detection. See table 2 for calculation of total inorganic carbon (TIC).
Acid extractable sulfur (SO ₄ -S)	Determined by adding HCl to the sample. Soluble sulfates dissolved in the HCl and are detected/quantified by ICP.
Chromium reducible sulfur (CRS)	Dried pulped sample is mixed with acid and chromium metal in a rapid distillation unit to produce hydrogen sulfide which is collected and titrated with iodine to measure CRS.
Single addition net acid generation (NAG) test	The NAG test involves addition of hydrogen peroxide (H ₂ O ₂) to prepared samples (to oxidise any reactive sulfides). The NAG pH is the pH of the final solution. The resultant acidity is then titrated (using NaOH) to pH 4.5 and then to pH 7. Details of the procedure are outlined in the AMIRA International ARD Test Handbook (AMIRA, 2002).
Multi element chemical assay	Involves the near total dissolution of most elements using a variety of digestion techniques (e.g. aqua regia, four acid digest and lithium borate fusion). Analytical techniques are selected depending on the elements under investigation and include XRF, ICP-AES, ICP-MS, AAS, ISE and TGA.
Acid buffering characterisation curve	Involves a slow titration of the sample with HCl, whilst monitoring the pH. Details of the procedure are outlined in the AMIRA International ARD Test Handbook (AMIRA, 2002).
Deionised water leach test	Simple leach extraction involves dissolution of elements from the solid matrix using de-ionised water. The water and solids are mixed at a ratio of 3:1 (water:solids) and allowing 24 hours contact time (MEND approach). Analytical techniques are selected depending on the elements under investigation and include ICP-AES and ICP-MS.

Particle size distribution (PSD)	Sieve assay, where the sample is shaken to pass it through a range of sieves with progressively smaller apertures (down to a minimum of 75µm). The size fraction is determined to be the mass of material retained in each of the sieves.
Mineralogical Assessment	Quantitative XRD carried out on a powdered sample containing an internal standard.
Emerson aggregate test	Block of soil (approximately 2cm in diameter) is placed in still water and the reaction between the soil and water (slaking or dispersion) is noted. If no reaction occurs, the sample is remoulded, then shaken and the reaction observed and also tested for gypsum.
Cation exchange capacity (CEC)	CEC is measured by displacing all the bound cations with a concentrated solution of another cation and then measuring either the displaced cations or the amount of added cation that is retained.
Asbestos fibre presence screening	Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004. Completed on rough crushed (<10 mm fraction) sample.
Fibrous mineral identification)	Scanning Electron Microscopy (SEM)
Nitrogen speciation (total nitrogen, nitrate, nitrite and nitrogen Kjeldahl)	Nitrate/Nitrite/NO _x /TKN - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils/solids are analysed following a water extraction. Total Nitrogen by high temperature catalytic combustion with chemiluminescence detection and/or NDIR detection.
Soil nutrient analysis	Available P and K using the Colwell method: Bicarbonate P is measured by the method of Colwell (1963): 1:100 soil:solution ratio, extractant is 0.5 M sodium bicarbonate (pH 8.50), 16 hours extraction at 23°C.
Soil metals analysis	Determination of various metals by ICP-OES.

Table 2: Calculated data

Parameter	Description
Maximum potential acidity (MPA)	Calculated by multiplying the total sulfur content (wt%) by 30.6. Approach assumes that all sulfur is present as pyrite.
Sulfide-sulfur	Difference between Total sulfur and sulfate sulfur
Net acid producing potential (NAPP)	NAPP is the difference between the MPA of the sample and the ANC: $\text{NAPP} = \text{MPA} - \text{ANC}$
Net potential ratio (NPR)	NPR is the ratio of the MPA and the ANC: $\text{NPR} = \text{ANC}/\text{MPA}$
Total inorganic carbon	Total inorganic carbon content was calculated as the difference between the total carbon content and total organic carbon content of the sample.
Carbonate-based neutralisation potential (CarbNP)	Calculated by multiplying the total inorganic carbon content (wt%) by 81.63.
Exchangeable sodium percent (ESP)	$\text{ESP} = \frac{[(\text{Na})/(\text{Ca}+\text{Mg}+\text{K}+\text{Na})] \times 100}$

U-238 activity	$U-238 = U \times 0.0125$
Th-232 activity	$Th-232 = Th \times 0.00409$

Global Abundance Indicators

The global abundance index (GAI) values provide a direct comparison of the measured abundances of the elements with the average abundance of elements in the Earth's crust (Bowen, 1979). The GAI indicates which elements are 'enriched' in the sample with respect to the global average and is calculated using the following formula (Förstner, 1993):

$$GAI = \text{Int} \left(\log_2 \left(\frac{\text{Measured Concentration}}{1.5 \times \text{Average Abundance}} \right) \right)$$

Zero or positive GAI values indicate enrichment of the element in the sample when compared to average crustal abundances. As a general rule, a GAI of 3 or higher signifies enrichment that warrants further evaluation.

The table below relates GAI values to n (the ratio of the measured abundance in the sample to the reference material abundance).

Table 3: GAI values and n ratios

GAI	n range
0	$1 < n < 3$
1	$3 \leq n < 6$
2	$6 \leq n < 12$
3	$12 \leq n < 24$
4	$24 \leq n < 48$
5	$48 \leq n < 96$
6	$n > 96$
GAI	n range

Appendix D Mineralogy results

Appendix D - Mineralogy results

Grade				Waste														Ore					
Lab ID Hole ID				PFL0924-03	PFL0924-57	PFL0924-17	PFL0924-71	PFL0924-32	PFL0924-36	PFL0924-44	PFL0924-56	PFL0924-CF	PFL0924-AP	PFL0924-AL	PFL0924-10	PFL0924-25	PFL0924-43	PFL0924-66	PFL0924-CM	PFL0924-CO	PFL0924-CV	PFL0924-CY	PFL0924-CS
				BSDD001	BSDD027	BSDD005	BSDD033	BSDD016	BSDD016	BSDD044	BSDD027	BSRC1451	BSRC0130	BSDD048	BSDD002	BSDD008	BSDD022	BSDD032	BSDD001	BSDD009	BSDD047	BSDD048	BSDD031
Depth interval (mbcl)				96-98	106.52-108.7	105-105.5	50-52	41-43.5	128-130	66-68	102.8-104.8	75-76	69-71	57-59	54-55.6	47.88-49.17	4.4-4.8	150-152	80-81.5	89-89.5	27.69-28.47	51.81-52.37	66.87-67.87
ROCK_TYPE_1				tg	tg	tb	tb	tb	tm	tm	tm	tm	gm	ti	xx	xx	md	ts	tm	tm	tm	ti	tb
Pit Name				Jinkas	Jinkas	Jinkas	Dingo	Jinkas	Jinkas	Dingo	Jinkas	Olympia	Jackson	Jackson	Jinkas	Dingo	Jinkas	Jinkas	Jinkas	Dingo	Jackson	Jackson	Jinkas
Category	Units	Approximate formula	Mineral / Weathering	fr	fr	fr	ww	fr	fr	fr	fr	fr	fr	fr	fr	fr	mw	fr	fr	fr	mw	fr	fr
Sulfide	wt%	FeS ₂	Pyrite	<0.5	<0.5	<0.5	1	<0.5	1	<0.5	<0.5		4	3	<0.5	<0.5	<0.5	<0.5	1	<0.5	13	<0.5	<0.5
	wt%	Fe _(1-x) S _x (x=0-0.2)	Pyrrhotite					<0.5	7								<0.5	<0.5	1	4		1	
Sulfate	wt%	KFe ₂ (SO ₄) ₂ (OH) ₆	Jarosite										1	<0.5							1		
	wt%	CaSO ₄ ·2H ₂ O	Gypsum									<0.5	<0.5						<0.5				
Carbonate	wt%	CaCO ₃	Calcite	28	1	1	1		<0.5	<0.5	1				9	32	1	<0.5		1		<0.5	<0.5
	wt%	Ca(Fe,Mg)(CO ₃) ₂	Dolomite			2	2	1	4	3	1						3	1					<0.5
	wt%	MnCO ₃	Rhodochrosite	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	<0.5	<0.5	1	1		<0.5	<0.5
	wt%	FeCO ₃	Siderite											1	<0.5				<0.5			1	
	wt%	MgCO ₃	Magnesite	1	<0.5	1	1		<0.5	1	1			<0.5	<0.5	1	1	<0.5	<0.5				
	wt%	MgCO ₃ ·3H ₂ O	Nesquehonite	1												1	1						
Phyllosilicate	wt%	(Mg,Fe,Ni)3Si2O ₅ (OH)10	Serpentine									14											
	wt%	(Fe,Al,Mg,Li,Ni) ₅ (Si,Al) ₄ O ₁₀ (OH) ₈	Chlorite		2	2	3	<0.5	1	1	<0.5	11	4	1			<0.5	1	1	2		1	1
	wt%	(Ca,Al) ₂ (Al,Fe) ₃ Si ₃ O ₁₂ OH	Epidote							2			2	2				2	2			1	
	wt%	Al ₂ Si ₂ O ₅ (OH) ₄	Kaolin				<0.5			<0.5							1					1	
	wt%	(K,Ca,Na,Li)(Al,Mg,Fe) ₂ (Si,Al) ₄ O ₁₀ (OH) ₂	Mica	<0.5	4	3	5	13	8	<0.5	7	4	<0.5	3	2	<0.5	7	1	1		<0.5	<0.5	4
	wt%	(Fe,Al,Mg,Ni) ₃ Si ₄ O ₁₀ (OH) ₂	Talc - Pyrophyllite			<0.5	<0.5		<0.5			4	<0.5				<0.5	<0.5	<0.5			<0.5	
Silicate	wt%		Expanding clay						<0.5														
	wt%	SiO ₂	Quartz	3	32	22	22	35	13	1	8	1	14	9	4	8	5	<0.5	17	43	12	15	32
	wt%	Ca ₂ Al ₆ Si ₆ O ₂₄ CO ₃	Meionite	4											6	2			3			1	
	wt%	(Mg,Fe,Ca,Mn,Li) ₃ (Al,Fe) ₂ (SiO ₄) ₂	Garnet	8					6		1				5	1			2		5	2	
	wt%	KAlSi ₃ O ₈	Potassium Feldspar	13	7	8	2	2	1		14		5	2	11	4		1	2	1	1	18	18
	wt%	(Ca,Mg,Fe,Ni)(Fe,Al,Mg)Si ₂ O ₆	Clinopyroxene	7	2	7	5	8	16	20	8	15	8	20	16	4	22	13	12	8	17	14	
	wt%	Ca ₂ Si ₂ O ₉	Wollastonite	14	1	1	1		1						16	33			1				1
	wt%	(Na,Ca)(Al,Si) ₂ Si ₂ O ₈	Sodium Calcium Plagioclase	7	39	38	43	23	31	40	30		30	35	16	1	39	28	33	15	17	24	28
	wt%	(Ca,Fe,Mg) ₂ Si ₂ O ₆	Orthopyroxene									7							9	5			4
	wt%	e.g. (Na,Ca,Li) ₂ (Fe,Mg,Al) ₃ (Si,Al) ₃ O ₂₂ (OH) ₂	Amphibole	1		<0.5	<0.5	<0.5	<0.5	3	13		1	8	7	7	1	1	6	35	3	4	3
Oxides and hydroxides	wt%	(Ca,Mn,Ba,Pb,REE) ₃ (PO ₄) ₃ (OH,F,Cl)	Apatite		<0.5	<0.5	<0.5	<0.5		0.5			1	1		<0.5		<0.5		1		<0.5	
	wt%	TiO ₂	Rutile		<0.5		<0.5										1						
	wt%	AlO(OH)	Diaspore	1													1					1	
	wt%	FeO(OH)	Goethite																				
	wt%	FeTiO ₃	Ilmenite	1	<0.5	1	1	<0.5	1	2	1		1	1	1	1	<0.5	1	2		<0.5	<0.5	<0.5
Phosphate	wt%	(Ca,Mn,Ba,Pb,REE) ₃ (PO ₄) ₃ (OH,F,Cl)	Apatite	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		1		1		<0.5		<0.5		<0.5		1	<0.5	
-	wt%	-	Amorphous Content																				
Total				100	99	100	100	99	100	99	100	101	100	100	100	100	100	100	100	100	100	100	99

Appendix E Acid-base accounting results

Appendix E - ABA Geochemical Results

SRK sample ID	Rock type	Grade	PK	Units		pH units		µS/cm	%	kg H ₂ SO ₄ /t	kg H ₂ SO ₄ /t	% CaCO ₃	-	pH units		kg H ₂ SO ₄ /t	kg H ₂ SO ₄ /t	Class	
				LOD	1	0.1	0.01							0.1	0.5				0.5
Weathering																			
pH																			
EC																			
TS (LECO)																			
MPA																			
ANC																			
ANC CaCO ₃																			
Fizz																			
NAG pH																			
NAG pH4.5																			
NAG pH7.0																			
NAPP																			
NPR																			
AMIRA																			
MEND																			
BSD0001 22 24	tg	Waste	Jinkas	pw	9.0	440	0.098	3	20	2	1	8.5	<0.5	<0.5	-17	6.7	NAF	NAF	NAF
BSD0001 58.82 59.59	tb	Waste	Jinkas	fr	9.2	300	0.04	1.2	10	1.1	1	6.9	<0.5	<0.5	-8.8	8.2	NAF	NAF	NAF
BSD0001 96.98	tg	Waste	Jinkas	fr	9.6	240	<0.01	<0.31	400	4.1	4	11	<0.5	<0.5	-400	1310	NAF	NAF	NAF
BSD0001 109 111	ti	Waste	Jinkas	fr	9.1	320	0.024	0.74	24	2.4	1	8	<0.5	<0.5	-23	32.7	NAF	NAF	NAF
BSD0001 129 131	tm	Waste	Jinkas	fr	9.5	210	0.039	1.2	21	2.2	1	8.3	<0.5	<0.5	-20	17.6	NAF	NAF	NAF
BSD0002 8 10	tg	Waste	Jinkas	sw	9.0	340	<0.01	<0.31	9.9	1	1	6.9	<0.5	<0.5	-9.6	32.3	NAF	NAF	NAF
BSD0002 17 19	tg	Waste	Jinkas	sw	8.1	1300	0.012	0.37	6.6	0.67	0	7.4	<0.5	<0.5	-6.2	18.0	NAF	NAF	NAF
BSD0002 31 33	cy	Waste	Jinkas	cw	7.8	900	0.013	0.4	5.1	0.52	0	7.1	<0.5	<0.5	-4.7	12.8	NAF	NAF	NAF
BSD0002 40 42	cy	Waste	Jinkas	cw	6.9	1000	0.086	2.6	6.3	0.64	0	7.4	<0.5	<0.5	-3.7	2.4	NAF	NAF	UC
BSD0002 54 55.6	xx	Waste	Jinkas	fr	10	210	0.11	3.4	230	24	4	11	<0.5	<0.5	-230	68.3	NAF	NAF	NAF
BSD0004 4 5.8	tb	Waste	Jinkas	sw	9.1	340	<0.01	<0.31	14	1.5	0	7.6	<0.5	<0.5	-14	45.7	NAF	NAF	NAF
BSD0004 15 17	ti	Waste	Jinkas	sw	9.0	390	0.028	0.86	17	1.7	1	8	<0.5	<0.5	-16	19.8	NAF	NAF	NAF
BSD0004 76 78	ti	Waste	Jinkas	fr	9.2	250	0.28	8.6	22	2.3	1	5.9	<0.5	0.79	-13	2.6	NAF	NAF	UC
BSD0005 5 6	tb	Waste	Jinkas	pw	8.8	390	<0.01	<0.31	9.3	0.95	0	7	<0.5	<0.5	-9	30.4	NAF	NAF	NAF
BSD0005 16.3 18	tg	Waste	Jinkas	pw	8.9	450	0.053	1.6	18	1.8	1	8	<0.5	<0.5	-16	11.1	NAF	NAF	NAF
BSD0005 33.8 34	tg	Waste	Jinkas	pw	7.3	720	0.14	4.3	4.9	0.51	0	4.5	<0.5	1.7	-0.61	1.1	NAF-Barren	NAF	UC
BSD0005 105 105.5	tb	Waste	Jinkas	fr	9.1	310	0.11	3.4	26	2.6	2	9.8	<0.5	<0.5	-23	7.7	NAF	NAF	NAF
BSD0006 0.64 1.95	cy	Waste	Jinkas	cw	7.4	490	0.019	0.58	3.2	0.32	0	6.3	<0.5	1.5	-2.6	5.5	NAF-Barren	NAF	NAF
BSD0006 87 89	tm	Waste	Jinkas	fr	9.1	210	0.15	4.6	25	2.5	2	9.2	<0.5	<0.5	-20	5.4	NAF	NAF	NAF
BSD0006 96 98	tbq	Waste	Jinkas	fr	9.0	280	0.12	3.7	18	1.9	1	7.4	<0.5	<0.5	-14	4.9	NAF	NAF	NAF
BSD0006 139 141	tbq	Waste	Jinkas	fr	8.8	210	0.24	7.4	21	2.1	1	5.4	<0.5	0.95	-14	2.9	NAF	NAF	UC
BSD0006 142 144	tb	Waste	Jinkas	fr	9.4	270	0.27	8.3	41	4.2	1	7.9	<0.5	<0.5	-33	5.0	NAF	NAF	NAF
BSD0006 146.5 148.5	xx	Waste	Jinkas	fr	9.5	280	0.026	0.8	270	28	5	11	<0.5	<0.5	-270	339	NAF	NAF	NAF
BSD0008 44.7 46	tb	Waste	Dingo	fr	9.2	380	0.21	6.4	21	2.1	1	6.2	<0.5	0.79	-15	3.3	NAF	NAF	NAF
BSD0008 47.88 49.17	xx	Waste	Dingo	fr	10	180	<0.01	<0.31	650	66	5	11	<0.5	<0.5	-650	2120	NAF	NAF	NAF
BSD0008 87 89	tm	Waste	Dingo	fr	9.1	170	0.3	9.2	18	1.8	1	3.7	<0.5	1.3	-8.1	2.0	UC(PAF)	UC	UC
BSD0009 20.6 21.5	tm	Waste	Dingo	mw	9.5	360	<0.01	<0.31	17	1.7	1	7.6	<0.5	<0.5	-17	55.5	NAF	NAF	NAF
BSD0009 41.6 41.8	tm	Waste	Dingo	pw	9.3	250	0.09	2.8	19	1.9	0	6.2	<0.5	0.91	-16	6.9	NAF	NAF	NAF
BSD0009 55.3 55.6	tm	Waste	Dingo	pw	9.3	200	0.022	0.67	18	1.8	0	6.6	<0.5	1	-17	26.7	NAF	NAF	NAF
BSD0009 80 81.2	tg	Waste	Dingo	fr	9.1	340	0.048	1.5	19	2	1	7.9	<0.5	<0.5	-18	12.9	NAF	NAF	NAF
BSD0009 103.5 103.8	xx	Waste	Dingo	fr	9.0	260	0.037	1.1	18	1.8	1	7.6	<0.5	<0.5	-17	15.9	NAF	NAF	NAF
BSD0016 41 43.5	tbq	Waste	Jinkas	fr	9.3	290	0.29	8.9	12	1.2	1	3.7	<0.5	1.5	-3.1	1.4	UC(PAF)	UC	UC
BSD0016 57 59.85	tg	Waste	Jinkas	fr	9.1	370	0.23	7	25	2.5	1	6.2	<0.5	<0.5	-18	3.6	NAF	NAF	NAF
BSD0016 64 67	tm	Waste	Jinkas	fr	9.0	380	0.089	2.7	26	2.7	0	6.8	<0.5	<0.5	-23	9.5	NAF	NAF	NAF
BSD0016 109 111.5	tg	Waste	Jinkas	fr	9.2	310	0.085	2.6	21	2.1	1	6.9	<0.5	<0.5	-18	8.1	NAF	NAF	NAF
BSD0016 128 130	tm	Waste	Jinkas	fr	8.7	360	3	92	19	1.9	1	2.4	<0.5	58	73	0.2	PAF	PAF	PAF
BSD0017 109 111	tm	Waste	Jinkas	fr	9.0	240	0.087	2.7	23	2.4	1	7.4	<0.5	<0.5	-20	8.6	NAF	NAF	NAF
BSD0017 121 123	tg	Waste	Jinkas	fr	8.8	300	0.045	1.4	5.3	0.54	1	5.6	<0.5	2.1	-3.9	3.9	NAF	NAF	NAF
BSD0018 86 88	tb	Waste	Jinkas	fr	9.1	250	0.22	6.7	24	2.5	1	7.2	<0.5	<0.5	-17	3.6	NAF	NAF	NAF
BSD0018 128 131	tb	Waste	Jinkas	fr	9.3	230	0.16	4.9	25	2.6	1	8.1	<0.5	<0.5	-20	5.1	NAF	NAF	NAF
BSD0018 138 140	tb	Waste	Jinkas	fr	9.4	180	0.071	2.2	30	3.1	2	8.7	<0.5	<0.5	-28	13.8	NAF	NAF	NAF
BSD0018 144 148	md	Waste	Jinkas	mw	9.5	360	0.03	1.1	28	2.8	1	7.6	<0.5	<0.5	-17	3.5	UC(PAF)	UC	UC
BSD0022 8 8.5	md	Waste	Jinkas	mw	9.5	650	0.2	6.1	24	2.5	0	8.2	<0.5	0.59	-18	2.9	NAF	NAF	NAF
BSD0022 18 18.5	md	Waste	Jinkas	ww	9.1	550	0.15	4.6	23	2.4	0	7.7	<0.5	<0.5	-18	5.0	NAF	NAF	NAF
BSD0022 47 3 47.8	gm	Waste	Jinkas	fr	9.4	400	<0.01	<0.31	12	1.2	1	7.1	<0.5	<0.5	-12	39.2	NAF	NAF	NAF
BSD0022 76 78	tm	Waste	Jinkas	fr	9.7	250	0.051	1.6	20	2	1	7.7	<0.5	<0.5	-18	12.8	NAF	NAF	NAF
BSD0024 1 3	cy	Waste	Jinkas	cw	5.6	2900	0.057	1.7	<0.5	<0.01	0	5.4	<0.5	2.9	1.2	0.3	UC(NAF)	PAF	PAF
BSD0024 16 18.7	tg	Waste	Jinkas	pw	8.7	450	0.12	3.7	19	1.9	1	6.3	<0.5	<0.5	-15	5.2	NAF	NAF	NAF
BSD0024 19.5 22	tm	Waste	Jinkas	cw	6.10	610	0.021	0.64	5.4	0.56	1	7.4	<0.5	<0.5	-4.4	14.5	NAF	NAF	NAF
BSD0024 46 48.6	tm	Waste	Jinkas	fr	9.5	190	0.013	0.4	19	2	1	7.7	<0.5	<0.5	-19	47.7	NAF	NAF	NAF
BSD0026 62.52 64.55	tb	Waste	Jinkas	mw	7.8	1100	0.13	4	15	1.5	1	6.3	<0.5	0.63	-11	3.8	NAF	NAF	NAF
BSD0026 98 100	tg	Waste	Jinkas	fr	9.3	320	0.2	6.1	50	5.1	3	7.5	<0.5	<0.5	-44	8.2	NAF	NAF	NAF
BSD0027 55.5 57.5	tb	Waste	Jinkas	fr	9.5	280	0.03	0.92	19	2	1	7	<0.5	<0.5	-18	20.7	NAF	NAF	NAF
BSD0027 61.5 63.5	tg	Waste	Jinkas	fr	9.1	350	0.19	5.8	13	1.3	0	5	<0.5	0.8	-7.2	2.2	NAF	NAF	UC
BSD0027 102.8 104.8	tm	Waste	Jinkas	fr	9.3	270	0.34	10	20	2	1	4.1	0.67	2.2	-9.6	1.9	UC(PAF)	UC	UC
BSD0027 106.52 108.7	tg	Waste	Jinkas	fr	9.5	270	0.063	1.9	19	1.9	0	5.2	<0.5	<0.5	-17	5.0	NAF	NAF	NAF
BSD0028 60 62	tg	Waste	Jinkas	pw	8.8	470	0.13	4	17	1.7	1	5.9	<0.5	0.76	-13	4.3	NAF	NAF	NAF
BSD0028 62.8 64.2	tg	Waste	Jinkas	fr	8.9	420	0.16	4.9	17	1.7	1	5.3	<0.5	0.93	-12	3.5	NAF	NAF	NAF
BSD0031 24 26	tg	Waste	Jinkas	pw	9.5	420	<0.01	<0.31	11										

Appendix E - ABA Geochemical Results

SRK sample ID	Rock type	Grade	Pit Name	Units LOD	Weathering	pH units	µS/cm	%	kg H ₂ SO ₄ /t	kg H ₂ SO ₄ /t	% CaCO ₃	-	pH units	kg H ₂ SO ₄ /t	kg H ₂ SO ₄ /t	kg H ₂ SO ₄ /t	Class		
						0.1	0.01	0.5	0.01	0.1	0.5	0.5	0.1	0.5	0.5	NAPP	NPR	AMIRA	MEND
						pH	EC	TS (LECO)	MPA	ANC	ANC CaCO ₃	Fizz	NAG pH	NAG pH4.5	NAG pH7.0				
BSRC0956 12 15	cy	Waste	Olympia	cw	7.0	1100	<0.01	<0.31	8.9	0.91	0	7.5	<0.5	<0.5	-8.6	29.1	NAF	NAF	
BSRC0995 97 99	md	Waste	Jinkas	fr	8.6	450	0.41	13	25	2.6	0	4.6	<0.5	1.3	-12	2.0	NAF	UC	
BSRC1018 5 7	zx	Waste	Jinkas	pw	6.0	1400	0.024	0.74	2	0.2	0	5.5	<0.5	3	-1.3	2.7	NAF-Barren	UC	
BSRC1064 10 12	gm	Waste	Jackson	sw	9.2	440	0.085	2.6	8.5	0.86	0	5.7	<0.5	0.79	-5.9	3.3	NAF	NAF	
BSRC1102 6 8	zx	Waste	Jinkas	cw	5.9	770	0.078	2.4	2.3	0.24	0	6.2	<0.5	1.5	0.089	1.0	UC(NAF)	PAF	
BSRC1133 18 20	cy	Waste	Olympia	cw	5.3	4000	0.068	2.1	1.5	0.15	0	5.4	<0.5	2	0.58	0.7	UC(NAF)	PAF	
BSRC1181 43 45	tb	Waste	Jinkas	ww	6.4	1400	<0.01	<0.31	7.4	0.76	0	7.4	<0.5	<0.5	-7.1	24.2	NAF	NAF	
BSRC1260 2 4	cy	Waste	Jinkas	cw	5.9	200	0.034	1	<0.5	<0.01	0	5.2	<0.5	3.5	0.54	0.5	UC(NAF)	PAF	
BSRC1279 22 24	gm	Waste	Jinkas	mw	9.2	410	0.12	3.7	13	1.3	0	5.5	<0.5	0.79	-9.3	3.5	NAF	NAF	
BSRC1286 11 13	gm	Waste	Jackson	pw	9.1	410	0.017	0.52	5.8	0.59	1	7.3	<0.5	<0.5	-5.3	11.1	NAF	NAF	
BSRC1350 30 32	gm	Waste	Jackson	pw	8.7	450	<0.01	<0.31	11	1.2	0	6.9	<0.5	<0.5	-11	35.9	NAF	NAF	
BSRC1355 4 6	gm	Waste	Olympia	pw	7.7	250	0.017	0.52	2	0.21	0	6.6	<0.5	0.89	-1.5	3.8	NAF-Barren	NAF	
BSRC1357 6 8	cy	Waste	Olympia	sw	5.3	1700	0.043	1.3	1.1	0.11	0	5.7	<0.5	3	0.22	0.8	UC(NAF)	PAF	
BSRC1442 16 18	gm	Waste	Jackson	mw	9.3	450	0.023	0.7	15	1.5	1	8.2	<0.5	<0.5	-14	21.3	NAF	NAF	
BSRC1447 3 5	cy	Waste	Olympia	sw	7.0	580	<0.01	<0.31	3	0.31	0	6.5	<0.5	1.1	-2.7	9.8	NAF-Barren	NAF	
BSRC1447 22 24	tb	Waste	Olympia	mw	7.2	4700	0.012	0.37	27	2.7	0	8.2	<0.5	<0.5	-27	73.5	NAF	NAF	
BSRC1447 27 29	gm	Waste	Olympia	mw	8.0	1900	0.14	4.3	18	1.8	0	8.3	<0.5	<0.5	-14	4.2	NAF	NAF	
BSRC1450 56 58	gm	Waste	Olympia	fr	9.2	510	0.038	1.2	22	2.2	1	7.7	<0.5	<0.5	-21	18.9	NAF	NAF	
BSRC1451 65 67	gm	Waste	Olympia	fr	9.1	440	0.052	1.6	25	2.6	0	8.3	<0.5	<0.5	-23	15.7	NAF	NAF	
BSRC1451 75 76	tm	Waste	Olympia	fr	9.4	1300	0.21	6.4	170	17	1	9.6	<0.5	<0.5	-160	26.4	NAF	NAF	
BSRC1594 46 48	gm	Waste	Jinkas	mw	8.5	540	<0.01	<0.31	5.3	0.55	0	8.3	<0.5	<0.5	-5	17.3	NAF	NAF	
BSRC1599 78 80	tb	Waste	Jinkas	fr	9.0	310	0.25	7.7	14	1.4	1	5.1	<0.5	1.4	-6.3	1.8	NAF	UC	
BSRC1599 90 92	tg	Waste	Jinkas	fr	8.9	410	0.21	6.4	13	1.3	1	5.2	<0.5	1.4	-6.6	2.0	NAF	UC	
BSRC1602 18 20	tb	Waste	Jackson	mw	8.5	380	<0.01	<0.31	10	1	0	8.2	<0.5	<0.5	-9.7	32.7	NAF	NAF	
BSRC1616 47 49	tb	Waste	Jinkas	mw	8.0	320	<0.01	<0.31	9.4	0.96	0	7.6	<0.5	<0.5	-9.1	30.7	NAF	NAF	
BSDD001 24 5 25 ore	tg	Ore	Jinkas	pw	8.2	980	0.23	7	10	1	0	5.7	<0.5	1.1	-3	1.4	NAF	UC	
BSDD001 80 81 5 ore	tm	Ore	Jinkas	fr	8.6	590	1	31	13	1.3	0	3.2	6	16	1.8	0.4	PAF	PAF	
BSDD005 59 59 5 ore	ti	Ore	Jinkas	fr	8.4	630	0.73	22	11	1.1	0	3.3	4.7	11	11	0.5	PAF-LC	PAF	
BSDD009 89 89 5 ore	tm	Ore	Dingo	fr	8.7	480	3.4	100	22	2.3	1	2.3	51	64	82	0.2	PAF	PAF	
BSDD009 98 98 5 ore	tm	Ore	Dingo	fr	9.1	360	2.4	74	21	2.2	1	2.4	35	43	53	0.3	PAF	PAF	
BSDD009 100 100 5 ore	tm	Ore	Dingo	fr	8.9	350	2.2	67	26	2.7	1	2.5	35	44	41	0.4	PAF	PAF	
BSDD024 60 60 8 ore	ti	Ore	Jinkas	fr	9.1	300	0.46	14	13	1.3	1	3.7	2.1	7.6	1.1	0.9	PAF-LC	PAF	
BSDD031 66 87 67 87 ore	tbg	Ore	Jinkas	fr	9.6	250	0.2	6.1	13	1.3	1	4.2	<0.5	2.1	-6.9	2.1	UC(PAF)	UC	
BSDD041 2 46 4 8 ore	cy	Ore	Jinkas	cw	7.5	560	0.037	1.1	3.1	0.32	0	6.7	<0.5	0.79	-2	2.7	NAF-Barren	UC	
BSDD008 51 73 52 73 ore	tm	Ore	Dingo	fr	8.6	310	1.3	40	15	1.6	0	2.9	10	23	25	0.4	PAF	PAF	
BSDD047 27 69 28 47 ore	tm	Ore	Jackson	mw	4.6	5500	8.8	270	<0.5	<0.01	0	2	190	220	270	0.0	PAF	PAF	
BSDD047 36 12 36 62 ore	tf	Ore	Jackson	mw	8.1	560	0.21	6.4	8.6	0.88	0	4.7	<0.5	1	-2.2	1.3	NAF	UC	
BSDD048 25 4 26 05 ore	cy	Ore	Jackson	sw	6.6	1800	0.2	6.1	<0.5	0.02	0	4.1	0.55	3.5	5.6	0.1	PAF-LC	PAF	
BSDD048 51 81 52 37 ore	ti	Ore	Jackson	fr	8.1	460	0.62	19	13	1.3	1	3.1	5.8	9.8	6	0.7	PAF	PAF	

Appendix E - ABA summary statistics

Grade	Lithology Code	Lithology	Sample count	Reported statistic	Paste pH ¹	Paste EC	Total S	CRS	SHCl	TC	TIC	TOC	NAG pH ¹	NAG to pH 4.5	NAG to pH 7.5	ANC	MPA	NAPP	Class
					s.u.	mS/cm	%			%			s.u.	kg H ₂ SO ₄ /t					
Waste	tb	biotite (dominant) quartz granulite (gneiss)	30	Min	6.4	180	<0.01	0.012	<0.005	0.02	<0.01	<0.01	4.1	<0.5	<0.5	5.2	<0.31	-37	NAF
				Median	9.1	340	0.053	0.14	0.021	0.11	0.1	0.017	7.5	<0.5	<0.5	16	1.6	-12	
				Average	7.8	550	0.097	0.13	0.02	0.1	0.08	0.02	5.4	0.5	0.7	18	3	-15	
				Max	9.8	4,700	0.39	0.28	0.051	0.19	0.15	0.07	9.8	0.5	2.6	41	12	-4.8	
	tbg	Biotite Garnet Gneiss	3	Min	8.8	210	0.12	0.21	0.035	0.03	<0.01	0.03	3.7	<0.5	<0.5	12	3.7	-14	UC(PAF)
				Median	9.0	280	0.24	0.21	0.035	0.06	0.015	0.052	5.4	<0.5	1.0	18	7.4	-14	
				Average	9.0	260	0.22	0.21	0.035	0.063	0.015	0.052	4.1	0.8	1.6	17	6.6	-10	
				Max	9.3	290	0.29	0.21	0.035	0.096	0.019	0.077	7.4	1.5	3.4	21	8.9	-3.1	
	tg	garnet (dominant) quartz granulite (gneiss)	30	Min	5.9	220	<0.01	0.032	<0.005	0.02	<0.01	<0.01	4.5	<0.5	<0.5	2.4	<0.31	-400	NAF
				Median	9.0	390	0.047	0.067	0.009	0.1	0.1	0.023	7.2	<0.5	<0.5	15	1.4	-13	
				Average	7.3	520	0.074	0.079	0.028	0.48	0.45	0.032	5.7	<0.5	0.7	28	2.3	-25	
				Max	10.0	2,700	0.23	0.18	0.14	3.5	3.4	0.077	11.0	<0.5	2.1	400	7	-0.61	
	ti	intermediate granulite (gneiss)	9	Min	7.9	230	<0.01	<0.005	0.02	0.01	<0.01	<0.01	2.5	<0.5	<0.5	8.1	<0.31	-35	UC(PAF)
				Median	9.1	320	0.033	0.24	0.027	0.07	0.04	0.01	7.6	<0.5	<0.5	21	1	-16	
				Average	8.5	470	0.32	0.65	0.079	0.1	0.085	0.022	3.4	4.2	5.7	21	9.9	-11	
				Max	9.6	1,300	2.4	1.7	0.19	0.25	0.25	0.057	9.3	34.0	46.0	36	74	59	
	tm	mafic granulite (gneiss)	24	Min	5.1	160	<0.01	0.031	<0.005	0.01	<0.01	<0.01	2.4	<0.5	<0.5	4.4	<0.31	-160	UC(PAF)
				Median	9.4	260	0.088	0.23	0.011	0.07	0.1	0.032	7.4	<0.5	<0.5	20	2.7	-17	
				Average	6.5	480	0.36	0.52	0.076	0.099	0.08	0.027	3.5	4.9	6.2	27	11	-16	
				Max	9.7	3,600	3	2.3	0.62	0.3	0.24	0.059	9.6	59.0	69.0	170	92	73	
	ts	speckled mafic granulite (gneiss)	6	Min	8.1	180	<0.01	0.0052	<0.005	0.02	<0.01	0.012	4.2	<0.5	<0.5	9.7	<0.31	-23	NAF
				Median	8.9	540	0.028	0.034	0.021	0.04	0.03	0.016	7.6	<0.5	<0.5	18	0.84	-13	
				Average	8.6	490	0.1	0.14	0.019	0.12	0.11	0.016	5.0	<0.5	0.8	18	3.2	-15	
				Max	9.6	940	0.49	0.37	0.03	0.29	0.28	0.019	8.9	<0.5	2.4	28	15	-8.9	
	md	dolerite	5	Min	8.4	450	0.013	0.26	<0.005	0.02	<0.01	0.025	4.2	<0.5	<0.5	23	0.4	-24	NAF
				Median	9.0	550	0.2	0.26	0.013	0.02	<0.01	0.029	6.2	<0.5	0.6	24	6.1	-18	
				Average	8.8	560	0.23	0.26	0.013	0.024	<0.01	0.029	4.8	<0.5	1.1	25	6.9	-18	
				Max	9.5	650	0.41	0.26	0.02	0.026	<0.01	0.032	8.5	<0.5	2.8	28	13	-12	
	gg	granite	1	-	9.4	360	<0.01	-	-	0.033	0.016	0.017	7.5	<0.5	<0.5	9.5	<0.31	-9.2	NAF
	gm	monzogranite	18	Min	5.5	250	<0.01	<0.005	<0.005	0.02	<0.01	<0.01	2.3	<0.5	<0.5	2	<0.31	-23	UC(PAF)
				Median	9.0	450	0.045	0.26	0.014	0.05	0.03	0.023	7.0	<0.5	<0.5	12	1.4	-7.6	
				Average	6.7	660	0.28	0.48	0.061	0.051	0.029	0.026	3.4	2.4	3.3	12	8.7	-3.4	
				Max	9.7	2,800	3.4	2.4	0.34	0.087	0.049	0.048	8.3	31.0	40.0	25	100	99	
	xx	calc-silicate rock	6	Min	8.8	180	<0.01	0.12	<0.005	1.1	0.92	0.03	7.0	<0.5	<0.5	18	<0.31	-650	NAF
				Median	9.4	270	0.074	0.14	0.02	2.3	2.3	0.051	9.7	<0.5	<0.5	120	2.3	-120	
				Average	9.2	310	0.086	0.14	0.02	2.4	2.3	0.075	7.6	<0.5	<0.5	200	2.6	-200	
				Max	10.0	490	0.17	0.15	0.034	3.8	3.7	0.15	11.0	<0.5	<0.5	650	5.2	-13	
	cy	Clay	20	Min	5.3	200	<0.01	<0.005	0.01	0.02	<0.01	0.013	5.2	<0.5	<0.5	<0.5	<0.31	-13	NAF-Barren
				Median	7.0	1,100	0.024	<0.005	0.03	0.06	0.011	0.044	6.4	<0.5	1.3	2.8	0.74	-2.1	
				Average	6.1	1,500	0.034	<0.005	0.034	0.048	0.011	0.039	5.9	<0.5	1.8	3.7	1	-2.6	
				Max	8.0	5,300	0.086	<0.005	0.09	0.075	0.012	0.064	8.4	<0.5	5.1	13	2.6	1.5	
	zl	lateritic duricrust	3	Min	5.5	420	0.034	<0.005	0.027	0.15	0.039	0.11	5.2	<0.5	1.1	<0.5	1	-0.41	UC(NAF)
				Median	5.6	580	0.042	<0.005	0.027	0.15	0.039	0.11	5.5	<0.5	2.9	1.1	1.3	-0.059	
				Average	5.7	770	0.04	<0.005	0.027	0.15	0.039	0.11	5.5	<0.5	2.5	1.1	1.4	0.27	
				Max	6.0	1,300	0.058	<0.005	0.027	0.15	0.039	0.11	5.9	<0.5	3.5	1.7	1.8	1.3	
	zs	soil	3	Min	6.4	200	<0.01	-	0.006	0.59	0.11	0.48	5.5	<0.5	<0.5	1.9	<0.31	-3.7	NAF-Barren
				Median	6.5	220	0.011	-	0.006	0.59	0.11	0.48	6.0	<0.5	1.4	1.9	0.34	-1.6	
				Average	6.6	540	0.013	-	0.006	0.59	0.11	0.48	5.8	<0.5	1.5	2.7	0.4	-2.3	
				Max	7.3	1,200	0.018	-	0.006	0.59	0.11	0.48	6.8	<0.5	2.7	4.3	0.55	-1.6	
	zx	exotic overburden (roadbase) dump material	3	Min	5.9	290	0.024	<0.005	0.006	0.09	0.03	0.06	5.5	<0.5	0.6	1.8	0.74	-1.3	NAF-Barren
				Median	6.0	770	0.025	<0.005	0.02	0.48	0.1	0.37	6.2	<0.5	1.5	2	0.77	-1	
				Average	6.1	820	0.042	<0.005	0.02	0.48	0.1	0.37	5.9	<0.5	1.7	2	1.3	-0.74	
				Max	7.7	1,400	0.078	<0.005	0.033	0.86	0.18	0.68	6.7	<0.5	3.0	2.3	2.4	0.089	
Ore	tbg	Biotite Garnet Gneiss	1	-	9.6	250	0.2	0.16	0.15	0.01	<0.01	0.011	4.2	<0.5	2.1	13	6.1	-6.9	UC(PAF)
	tf	felsic granulite (gneiss)	1	-	8.1	560	0.21	0.18	0.015	0.12	0.11	0.02	4.7	<0.5	1.0	8.6	6.4	-2.2	NAF
	tg	garnet (dominant) quartz granulite (gneiss)	1	-	8.2	980	0.23	0.16	0.029	0.03	<0.01	0.03	5.7	<0.5	1.1	10	7	-3	NAF
	ti	intermediate granulite (gneiss)	3	Min	8.1	300	0.46	0.53	0.038	0.10	0.08	0.02	3.1	2.1	7.6	11	14	1.1	PAF-LC
				Median	8.4	460	0.62	0.555	0.12	0.12	0.11	0.02	3.3	4.7	9.8	13	19	6	
				Average	8.4	460	0.603	0.555	0.12	0.12	0.11	0.02	3.3	4.2	9.5	12	18	6.1	
				Max	9.1	630	0.73	0.58	0.2	0.15	0.14	0.019	3.7	5.8	11	13	22	11	
	tm	mafic granulite (gneiss)	6	Min	4.6	310	1	2.8	0.064	0.13	0.12	0.02	2.0	6	16	<0.5	31	18	PAF
				Median	8.7	420	2.3	4.15	0.58	0.13	0.12	0.02	2.4	35	44	18	70	47	
				Average	5.4	1,300	3.183	4.15	0.58	0.13	0.12	0.02	2.4	55	68	16	97	81	
				Max	9.1	5,500	8.8	5.5	1.1	0.13	0.12	0.015	3.2	190	220	26	270	270	
	cy	Clay	2	Min	6.6	560	0.037	0.084	0.066	-	-	-	4.1	<0.5	0.8	<0.5	1.1	-2	PAF-LC
				Median	7.1	1,200	0.1185	0.084	0.07	-	-	-	5.4	0.5	2.1	1.8	3.6	1.8	
Average				6.8	1,200	0.119	0.084	0.07	-	-	-	4.4	0.5	2.1	1.8	3.6	1.8		
Max				7.5	1,800	0.2	0.084	0.066	-	-	-	6.7	0.6	3.5	3.1	6.1	5.6		

Appendix F Multi-element and GAI results

Appendix F - Multi-element analysis results

SRK sample ID	Hole ID	REG GROU	P	ROCK_TYPE_1	DH type	Grade	Pit Name	Units		ppm	ppm	ppm	mg/kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	pp

Appendix F - Multi-element analysis results

SRR sample ID	Hole ID	REG_GROU	ROCK_TYPE_1	DH type	Grade	Pit Name	Units	ppm	ppm	ppm	mg/kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
							LOD	0.05	0.1	0.05	0.1	0.01	20	0.01	0.1	20	0.01	1	0.1	20	0.05	0.5	50	0.5	0.05	0.002
							Weathering	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	Re	
BSDD0035 45 47	BSDD0035	isa	cy	DD	Waste	Dingo	cw	11.27	0.6	2.51	<0.1	0.02	7530	43.89	4.9	11054	4236	2.5	6418	4.38	252.2	615	28.8	30.26	0.003	
BSDD0033 22 24	BSDD0033	usa	cy	DD	Waste	Dingo	sw	3.0	1.6	2.93	<0.1	0.06	10205	57.37	10.5	1161	225	3.4	1735	8.28	52.3	770	44.3	28.74	0.014	
BSDD0044 26.89 28.3	BSDD0044	usa	cy	DD	Waste	Dingo	sw	21.97	1.2	1.71	<0.1	0.07	6428	31.01	23.2	12711	324	0.7	16750	3.69	150.4	218	3	31.64	-0.002	
BSDD0048 23 25	BSDD0048	isa	cy	DD	Waste	Jackson	sw	28.11	2	2.15	<0.1	0.04	4553	22.61	34.3	2876	92	1.3	3693	3.55	104.3	204	12.3	9.92	-0.002	
BSDD0044 1.3 4	BSDD0044	usa	cy	DD	Waste	Jackson	sw	24.31	1.3	2.04	<0.1	0.1	22	17.28	14.1	7544	2391	0.8	2386	9.65	30.1	230	11.3	96.06	-0.002	
BSDD0006 0.64 1.95	BSDD0006	fk	cy	DD	Waste	cw	sw	18.42	1.1	4.36	<0.1	0.04	891	27.01	10.9	4149	90	1.3	1586	8.63	53.2	130	27.3	69.03	-0.002	
BSDD0002 40 42	BSDD0002	isa	cy	DD	Waste	Jackson	cw	20.51	1.1	5.49	<0.1	0.04	11848	56.58	12.4	1609	7383	3.2	7633	9.58	150	579	25.6	50.65	-0.002	
BSDD0002 31 33	BSDD0002	isa	cy	DD	Waste	Jackson	cw	20.49	1.4	4.22	<0.1	0.03	39734	32.88	21.9	1997	955	1.2	5958	8.56	93.2	401	20.5	128.95	-0.002	
BSDD0032 12 14	BSDD0032	usa	cy	DD	Waste	Jackson	cw	22.35	1	2.53	<0.1	0.04	24963	83.4	7	2774	622	0.9	9834	7.02	50.3	384	13.8	86.84	-0.002	
BSDD0036 11.17 13	BSDD0036	usa	cy	DD	Waste	Jackson	cw	28.58	1.3	4.06	<0.1	0.04	6349	144.09	8.2	445	139	0.8	1007	12.75	23.3	306	83.4	18.39	-0.002	
BSDD0040 1.2 2	BSDD0040	usa	cy	DD	Waste	Jackson	cw	28.2	1	2.28	<0.1	0.03	6313	56.81	10.3	1313	122	0.6	19343	8.13	32.3	204	8.9	50.71	-0.002	
BSDD0041 8 10	BSDD0041	usa	cy	DD	Waste	Jackson	cw	19.18	1.1	2.65	<0.1	0.04	17159	30.31	11.8	8817	670	8.3	16721	8.85	55	483	15.3	45.43	-0.002	
BSRC1260 2.4	BSRC1260	mz	cy	RC pulp	Waste	Jackson	cw	12.59	0.9	3.32	0.18	0.03	451	5.52	22.3	683	73	3.9	1247	11.39	33.1	71	14.1	2.78	-0.002	
BSDD0044 14 18.1	BSDD0044	usa	cy	DD	Waste	Jackson	sw	25.05	0.9	2.4	<0.1	0.1	756	17.28	14.1	7544	2391	1.3	334	234.7	734	17.4	11.3	96.04	-0.002	
BSDD0046 18 20	BSDD0046	isa	cy	DD	Waste	Jackson	sw	25.05	0.9	2.4	<0.1	0.07	1681	40.17	9.3	752	257	0.9	553	9.8	4.9	212	29.6	6.93	-0.002	
BSRC0948 13 15	BSRC0948	isa	cy	RC pulp	Waste	Olympia	cw	19.86	0.8	3.5	<0.1	0.04	15058	43.56	10.5	11913	643	2.1	15380	6.29	175.8	418	17.6	53.19	-0.002	
BSRC0956 12 15	BSRC0956	isa	cy	RC pulp	Waste	Olympia	cw	24.48	1.5	5.21	<0.1	0.16	7735	16.96	11.3	11638	1846	1.5	23322	15.35	67.3	1310	2.1	28.95	-0.002	
BSRC1133 18 20	BSRC1133	usa	cy	RC pulp	Waste	Olympia	cw	26.94	1	3.96	<0.1	0.06	3180	55.9	7.8	1716	227	1.6	2665	13.11	36.5	385	25	20.14	-0.002	
BSRC1357 6 8	BSRC1357	isa	cy	RC pulp	Waste	Olympia	sw	18.63	0.9	2.62	<0.1	0.04	5856	3.67	5.2	5253	386	2.4	12111	6.78	111.9	263	5.2	35.39	-0.002	
BSRC1447 3 5	BSRC1447	usa	cy	RC pulp	Waste	Olympia	sw	20.91	0.8	4.11	<0.1	0.02	20968	24.1	3.4	1421	554	1.3	17816	10.41	31.7	149	37.6	61.57	-0.002	
BSDD0041 1.2	BSDD0041	isa	gg	DD	Waste	Jackson	sw	18.53	1	1.96	<0.1	0.03	17326	20.42	15.3	19164	923	3	26286	5.5	80.2	583	12.3	33.99	-0.002	
BSRC00124 77 78 79 80	BSRC00124	gm	ore	RC pulp	Waste	Jackson	fr	20.13	0.1	3.05	<0.1	0.02	20052	26.53	13.9	5511	7	35	1249	6.19	12.9	558	88.1	50.55	-0.002	
BSRC0130 69 71	BSRC0130	gm	ore	RC pulp	Waste	Jackson	fr	15.41	1.6	1.55	<0.1	0.03	8726	15.86	1.9	18670	6899	16.2	21211	3.4	23.9	547	8.4	17.92	-0.002	
BSRC0131 56 58	BSRC0131	gm	ore	RC pulp	Waste	Jackson	fr	19.92	0.9	2.64	<0.1	0.03	20413	25.1	16.8	9130	1320	1.8	30968	4.61	21.4	648	26.1	52.1	-0.002	
BSRC0143 61 63	BSRC0143	gm	ore	RC pulp	Waste	Jackson	fr	21.25	0.9	2.35	<0.1	0.02	14601	25.74	26	9216	1030	2	31924	4.18	28.6	596	10.1	46.57	-0.002	
BSRC0234 56 58	BSRC0234	gm	ore	RC pulp	Waste	Jackson	fr	19.23	0.9	2.66	<0.1	0.03	20388	34.62	14.7	11186	965	4.9	29896	4.97	52.9	758	15.4	50.88	0.004	
BSRC1442 16 18	BSRC1442	gm	ore	RC pulp	Waste	Jackson	mw	20.63	0.8	3.06	<0.1	0.02	25030	34.71	19.8	6437	313	2.4	34140	4.6	23.6	557	26.7	89.93	-0.002	
BSRC1286 11 13	BSRC1286	ls	gm	RC pulp	Waste	Jackson	pw	20.4	0.7	2.75	<0.1	0.02	23890	21.28	11.3	4806	236	2.8	35392	2.22	14.1	398	21.7	69.31	-0.002	
BSRC1350 30 32	BSRC1350	ls	gm	RC pulp	Waste	Jackson	pw	20.64	0.8	2.52	<0.1	0.01	23060	32.56	13.3	5108	215	2.9	32564	2.6	22	572	18.1	77.44	-0.002	
BSRC1060 10 12	BSRC1060	ls	gm	RC pulp	Waste	Jackson	sw	20.76	0.8	2.54	<0.1	0.01	24190	34.29	19.1	5876	335	5.9	32321	2.84	26.6	534	24.9	78.56	0.002	
BSDD0022 47.3 47.8	BSDD0022	gm	ore	DD	Waste	Jackson	sw	18.75	0.9	3.11	<0.1	0.02	1875	30.57	8.8	8547	321	3.8	18089	3.61	27.1	603	23.8	70.75	-0.002	
BSDD0046 66 68	BSDD0046	gm	ore	DD	Waste	Jackson	sw	20.36	0.9	2.49	<0.1	0.02	445298	24.48	13.8	7466	361	0.8	31294	2.84	22.2	911	22.9	60.63	-0.002	
BSRC1279 22 24	BSRC1279	ls	gm	RC pulp	Waste	Jackson	mw	19.85	0.6	1.96	<0.1	0.01	22086	24.06	13.8	6816	277	12.1	33382	24.9	22.2	683	18.6	62.19	0.003	
BSRC1594 46 48	BSRC1594	ls	gm	RC pulp	Waste	Jackson	mw	19.39	0.8	1.44	<0.1	0.02	30624	32.35	10.8	5580	631	1	33682	2.11	52.8	304	17.9	63.31	-0.002	
BSDD0037 50 52	BSDD0037	ls	gm	DD	Waste	Jackson	ww	19.97	0.8	3.12	<0.1	0.02	25527	49.35	10.1	8794	377	0.9	24673	3.29	30.4	780	19.6	74.46	-0.002	
BSRC1450 56 58	BSRC1450	gm	ore	RC pulp	Waste	Olympia	fr	18.36	0.7	2.47	<0.1	0.02	20594	21.54	23.3	10079	598	1.7	29396	5.75	43.9	696	11.8	52.66	-0.002	
BSRC1451 65 67	BSRC1451	gm	ore	RC pulp	Waste	Olympia	fr	19.21	0.7	2.69	<0.1	0.03	15373	25.28	13.8	12083	1105	1.9	34677	6.32	30	794	18.5	25.13	-0.002	
BSRC1447 27 29	BSRC1447	ls	gm	RC pulp	Waste	Olympia	mw	19.12	1.1	3.23	<0.1	0.05	10381	35.66	14.9	26750	220	7.2	16958	16.62	344.1	930	47.2	32.48	-0.002	
BSRC1355 6 6	BSRC1355	ls	gm	RC pulp	Waste	Olympia	pw	19.9	0.7	3.11	<0.1	0.02	21779	33.33	6.8	3432	227	1.9	25964	6.32	26.5	256	11.9	54.52	-0.002	
BSRC1404 18 20	BSRC1404	ls	gm	RC pulp	Waste	Olympia	sw	22.03	1.5	2.74	<0.1	0.02	16016	44.89	8.9	12371	1634	2.7	18936	6.13	61.3	1092	6.3	17.46	-0.002	
BSRC0995 97 99	BSRC0995	md	ore	RC pulp	Waste	Jackson	fr	17.5	1.3	2.25	<0.1	0.08	4101	12.59	23.1	43933	1576	17	18602	8.06	87.9	762	2.2	18.76	-0.002	
BSDD0022 8 8.5	BSDD0022	md	ore	DD	Waste	Jackson	mw	18.17	1.6	2.48	<0.1	0.08	11063	13.36	28.7	40261	1621	0.5	19553	8.54	119.4	774	3.8	62.19	0.003	
BSDD0022 4.4 4.8	BSDD0022	md	ore	DD	Waste	Jackson	mw	17.01	1.4	2.2	<0.1	0.08	9507	14.29	23.6	40823	1527	0.6	20432	7.99	98	723	5.8	54.19	0.002	
BSDD0022 18 18.5	BSDD0022	md	ore	DD	Waste	Jackson	ww	20.37	1.2	2.63	<0.1	0.07	6892	15.71	39.5	32593	1533	1.4	23998	7.92	145.1	829	6.7	31.35	-0.002	
BSDD0008 44.7 46	BSDD0008	tb	ore	DD	Waste	Dingo	fr	19.35	0.9	3.22	<0.1	0.04	12961	31.57	16.3	9089	1440	1.1	26201	6.56	23.4	820	14.9	33.81	-0.002	
BSRC0096 22 24	BSRC0096	ls	tb	DD	Waste	Dingo	sw	19.07	0.8	3.3	<0.1	0.02	10353	36.14	12.1	5434	654	2.1	23399	6.62	55.1	152	11.3	40.18	-0.002	
BSDD0033 50 52	BSDD0033	ls	tb	DD	Waste	Dingo	ww	19.4	1	2.83	<0.1	0.04	8842	30.7	21.2	13654	1271	1.4	23567	6.8	65.2	770	10.9	27.46	-0.002	
BSRC0147 58 60	BSRC0147	ls	tb	RC pulp	Waste	Jackson	fr	20.56	0.9	2.27	<0.1	0.02	26578	25.29	18.1	7501	469	1.3	23013	3.79	19.2	576	11.6	76.98	-0.002	
BSRC029 110 111	BSRC029	ls	tb	RC pulp	Waste	Jackson	fr	18.34	0.9	2.74	<0.1	0.02	18055	33.29	12.3	10089	12043	3.74	18089	6.19	61.3	1092	6.3	17.46	-0.002	
BSRC1602 18 20	BSRC1602	ls	tb	RC pulp	Waste	Jackson	mw	21.81	1.2	2.12	<0.1	0.05	7005	20.95	15.7	26903	1044	2.5	26974	6.33	192.2	287	9.6	21.6	-0.002	
BSDD0024 19.5 22	BSDD0024	tb	ore	DD	Waste	Jackson	cw	20.36	1	3.12	<0.1	0.02	25407	26.76	15.2	4506	382	0.9	14097							

Appendix F - Multi-element analysis results

SRK sample ID	Hole ID	REG. GROU P	ROCK_TYPE_1	DH type	Grade	Pit Name	Units		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	mg/kg	mg/kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
							LOD	S																						Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr	Nitrate as N	Nitrite as N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
									Weathering	50	0.05	0.1	0.5	0.1	0.05	0.01	0.2	0.01	5	0.02	0.01	1	0.1	0.05	1	0.1	0.5	1	0.1																			0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5	1	0.1	0.5

Appendix F - Multi-element analysis results

SRK sample ID	Hole ID	REG_GROU P	ROCK_TYPE_ 1	DH type	Grade	Pit Name	Units	mg/kg	mg/kg
							LOD Weathering	NOx as N	Total Nitrogen
BSD035 45 47	BSD0035	lsa	cy	DD	Waste	Dingo	cw	<5	1200
BSD033 22 24	BSD0033	usa	cy	DD	Waste	Dingo	sw		
BSD044 26.89 28.3	BSD0044	lsa	cy	DD	Waste	Dingo	sw		
BSD048 23 25	BSD0048	lsa	cy	DD	Waste	Jackson	sw	<0.5	620
BSD024 1 3	BSD0024	usa	cy	DD	Waste	Jinkas	cw	4.3	250
BSD006 0.64 1.95	BSD0006	fk	cy	DD	Waste	Jinkas	cw	12	420
BSD002 40 42	BSD0002	lsa	cy	DD	Waste	Jinkas	cw	19	550
BSD002 31 33	BSD0002	lsa	cy	DD	Waste	Jinkas	cw		
BSD032 12 14	BSD0032	usa	cy	DD	Waste	Jinkas	cw		
BSD036 11 17 13	BSD0036	cy	cy	DD	Waste	Jinkas	cw		
BSD040 1 2 2	BSD0040		cy	DD	Waste	Jinkas	cw		
BSD041 8 10	BSD0041	usa	cy	DD	Waste	Jinkas	cw		
BSRC1260 2 4	BSRC1260	mz	cy	RC pulp	Waste	Jinkas	cw		
BSD038 13 14.81	BSD0038		cy	DD	Waste	Jinkas	sw		
BSD046 18 20	BSD0046	lsa	cy	DD	Waste	Jinkas	sw		
BSRC0948 13 15	BSRC0948	lsa	cy	RC pulp	Waste	Olympia	cw		
BSRC0956 12 15	BSRC0956	lsa	cy	RC pulp	Waste	Olympia	cw		
BSRC1133 18 20	BSRC1133	usa	cy	RC pulp	Waste	Olympia	cw		
BSRC1357 6 8	BSRC1357	lsa	cy	RC pulp	Waste	Olympia	sw		
BSRC1447 3 5	BSRC1447	usa	cy	RC pulp	Waste	Olympia	sw		
BSD041 1 2	BSD0041	is	gg	DD	Waste	Jinkas	sw	<0.5	1000
BSRC0124 77 78 79 80	BSRC0124		gm	RC pulp	Waste	Jackson	fr		
BSRC0130 69 71	BSRC0130		gm	RC pulp	Waste	Jackson	fr		
BSRC0131 56 58	BSRC0131		gm	RC pulp	Waste	Jackson	fr		
BSRC0143 61 63	BSRC0143		gm	RC pulp	Waste	Jackson	fr		
BSRC0234 56 58	BSRC0234		gm	RC pulp	Waste	Jackson	fr		
BSRC1442 16 18	BSRC1442		gm	RC pulp	Waste	Jackson	mw		
BSRC1286 11 13	BSRC1286	is	gm	RC pulp	Waste	Jackson	pw		
BSRC1350 30 32	BSRC1350	is	gm	RC pulp	Waste	Jackson	pw		
BSRC1064 10 12	BSRC1064		gm	RC pulp	Waste	Jackson	sw		
BSD022 47.3 47.8	BSD0022		gm	DD	Waste	Jinkas	fr		
BSD040 64 66	BSD0040		gm	DD	Waste	Jinkas	fr		
BSRC1279 22 24	BSRC1279	is	gm	RC pulp	Waste	Jinkas	mw		
BSRC1594 46 48	BSRC1594	is	gm	RC pulp	Waste	Jinkas	mw		
BSD037 50 52	BSD0037	is	gm	DD	Waste	Jinkas	ww	<0.5	670
BSRC1450 56 58	BSRC1450		gm	RC pulp	Waste	Olympia	fr		
BSRC1451 65 67	BSRC1451		gm	RC pulp	Waste	Olympia	fr		
BSRC1447 27 29	BSRC1447	is	gm	RC pulp	Waste	Olympia	mw		
BSRC1355 4 6	BSRC1355	is	gm	RC pulp	Waste	Olympia	pw		
BSRC0494 18 20	BSRC0494	is	md	RC pulp	Waste	Jackson	sw		
BSRC0995 97 99	BSRC0995		md	RC pulp	Waste	Jinkas	fr		
BSD022 8 8.5	BSD0022		md	DD	Waste	Jinkas	mw	<0.5	200
BSD022 4.4 4.8	BSD0022		md	DD	Waste	Jinkas	mw		
BSD022 18 18.5	BSD0022		md	DD	Waste	Jinkas	ww		
BSD008 44.7 46	BSD0008		tb	DD	Waste	Dingo	fr		
BSRC0096 22 24	BSRC0096	is	tb	RC pulp	Waste	Dingo	sw		
BSD033 50 52	BSD0033		tb	DD	Waste	Dingo	ww	<0.5	630
BSRC0147 58 60	BSRC0147		tb	RC pulp	Waste	Jackson	fr		
BSRC0629 110 111	BSRC0629		tb	RC pulp	Waste	Jackson	fr		
BSRC1602 18 20	BSRC1602	is	tb	RC pulp	Waste	Jackson	mw		
BSD024 19.5 22	BSD0024		tb	DD	Waste	Jinkas	cw		
BSD032 164.46 166	BSD0032		tb	DD	Waste	Jinkas	fr	<0.5	600
BSD036 54 56	BSD0036		tb	DD	Waste	Jinkas	fr	<0.5	1400
BSD001 58.82 59.59	BSD0001		tb	DD	Waste	Jinkas	fr		
BSD005 105 105.5	BSD0005		tb	DD	Waste	Jinkas	fr		
BSD006 142 144	BSD0006		tb	DD	Waste	Jinkas	fr		
BSD018 129 131	BSD0018		tb	DD	Waste	Jinkas	fr		
BSD018 138 140	BSD0018		tb	DD	Waste	Jinkas	fr		
BSD018 86 88	BSD0018		tb	DD	Waste	Jinkas	fr		
BSD027 55.5 57.5	BSD0027		tb	DD	Waste	Jinkas	fr		
BSD039 47.94 48.75	BSD0039		tb	DD	Waste	Jinkas	fr		
BSRC0320 74 76	BSRC0320		tb	RC pulp	Waste	Jinkas	fr		
BSRC0453 43 45	BSRC0453		tb	RC pulp	Waste	Jinkas	fr		
BSRC1599 78 80	BSRC1599		tb	RC pulp	Waste	Jinkas	fr		
BSD026 62.52 64.55	BSD0026	is	tb	DD	Waste	Jinkas	mw		
BSRC1616 47 49	BSRC1616	is	tb	RC pulp	Waste	Jinkas	mw		
BSD005 5 6	BSD0005	is	tb	DD	Waste	Jinkas	pw		
BSD031 36 38	BSD0031	is	tb	DD	Waste	Jinkas	pw		
BSD004 4 5.8	BSD0004		tb	DD	Waste	Jinkas	sw	1.7	180
BSRC0453 6 8	BSRC0453	is	tb	RC pulp	Waste	Jinkas	sw		
BSD039 17 18.5	BSD0039		tb	DD	Waste	Jinkas	ww		
BSRC1181 43 45	BSRC1181		tb	RC pulp	Waste	Jinkas	ww		
BSRC0498 21 23	BSRC0498	is	tb	RC pulp	Waste	Olympia	mw		
BSRC1447 22 24	BSRC1447	lsa	tb	RC pulp	Waste	Olympia	mw		
BSD006 139 141	BSD0006		tbq	DD	Waste	Jinkas	fr	0.68	140
BSD006 96 98	BSD0006		tbq	DD	Waste	Jinkas	fr		
BSD016 41 43.5	BSD0016		tbq	DD	Waste	Jinkas	fr		
BSD009 80 81.2	BSD0009		tg	DD	Waste	Dingo	fr	0.92	490
BSD044 52.83 54.2	BSD0044	is	tg	DD	Waste	Dingo	mw		
BSRC0598 36 38	BSRC0598		tg	RC pulp	Waste	Jackson	fr		
BSRC0599 46 48	BSRC0599		tg	RC pulp	Waste	Jackson	fr		
BSD048 13 14.43	BSD0048	is	tg	DD	Waste	Jackson	mw	<0.5	780
BSD047 34 36	BSD0047	is	tg	DD	Waste	Jackson	mw		
BSRC063 4 8	BSRC063		tg	RC pulp	Waste	Jinkas	cw		
BSRC0676 10 12	BSRC0676	lsa	tg	RC pulp	Waste	Jinkas	cw		
BSD027 106.52 108.7	BSD0027		tg	DD	Waste	Jinkas	fr	<0.5	240
BSD001 96 98	BSD0001		tg	DD	Waste	Jinkas	fr		
BSD016 109 111.5	BSD0016		tg	DD	Waste	Jinkas	fr		
BSD016 57 59.85	BSD0016		tg	DD	Waste	Jinkas	fr		
BSD017 121 123	BSD0017		tg	DD	Waste	Jinkas	fr		
BSD026 98 100	BSD0026		tg	DD	Waste	Jinkas	fr		
BSD027 51.5 63.5	BSD0027		tg	DD	Waste	Jinkas	fr		
BSD028 62.9 64.2	BSD0028		tg	DD	Waste	Jinkas	fr		
BSD036 67 69	BSD0036		tg	DD	Waste	Jinkas	fr		
BSRC0616 98 100	BSRC0616		tg	RC pulp	Waste	Jinkas	fr		
BSRC1599 90 92	BSRC1599		tg	RC pulp	Waste	Jinkas	fr		
BSD032 39 41	BSD0032	is	tg	DD	Waste	Jinkas	mw		
BSD005 33.8 34	BSD0005		tg	DD	Waste	Jinkas	pw	<0.5	350
BSD001 22 24	BSD0001	LS	tg	DD	Waste	Jinkas	pw		
BSD005 16.3 18	BSD0005		tg	DD	Waste	Jinkas	pw		
BSD024 16 18.7	BSD0024		tg	DD	Waste	Jinkas	pw		
BSD028 60 62	BSD0028		tg	DD	Waste	Jinkas	pw		
BSD031 24 26	BSD0031	is	tg	DD	Waste	Jinkas	pw		
BSD041 14 15.98	BSD0041	is	tg	DD	Waste	Jinkas	sw	2.3	500
BSD002 17 19	BSD0002	is	tg	DD	Waste	Jinkas	sw		
BSD002 8 10	BSD0002	is	tg	DD	Waste	Jinkas	sw		
BSRC0955 44 48	BSRC0955		tg	RC pulp	Waste	Olympia	fr		
BSD035 48 49.74	BSD0035		ti	DD	Waste	Dingo	pw	<0.5	890
BSD048 57 59	BSD0048		ti	DD	Waste	Jackson	fr	<0.5	1200
BSD047 17 11 19	BSD0047	is	ti	DD	Waste	Jackson	mw		
BSD004 76 78	BSD0004		ti	DD	Waste	Jinkas	fr	0.7	630
BSD001 109 111	BSD0001		ti	DD	Waste	Jinkas	fr		
BSD032 163 164	BSD0032		ti	DD	Waste	Jinkas	fr		
BSD037 80 81.53	BSD0037		ti	DD	Waste	Jinkas	fr		
BSD038 96.6 97.8	BSD0038		ti	DD	Waste	Jinkas	fr		
BSD004 15 17	BSD0004	is	ti	DD	Waste	Jinkas	sw		
BSD033 70 72	BSD0033		tm	DD	Waste	Dingo	fr	<0.5	1900
BSD008 67 69	BSD0008		tm	DD	Waste	Dingo	fr		
BSD044 66 68	BSD0044		tm	DD	Waste	Dingo	fr		
BSD009 20.6 21.5	BSD0009		tm	DD	Waste	Dingo	mw	<0.5	120
BSD033 40 42	BSD0033	is	tm	DD	Waste	Dingo	mw		
BSD044 28.31 29	BSD0044	is	tm	DD	Waste	Dingo	mw		
BSD009 41.6 41.8	BSD0009		tm	DD	Waste	Dingo	pw		
BSD009 55.3 55.6	BSD0009		tm	DD	Waste	Dingo	pw		
BSRC0233 69 71	BSRC0233		tm	RC pulp	Waste	Jackson	fr		
BSD048 16 18	BSD0048	is	tm	DD	Waste	Jackson	mw	<0.5	280
BSD008 67 69	BSD0008		tm	DD	Waste	Jinkas	fr	<0.5	560
BSD016 128 130	BSD0016		tm	DD	Waste	Jinkas	fr	<0.5	560
BSD024 46 48.6	BSD0024		tm	DD	Waste	Jinkas	fr	<0.5	110
BSD001 129 131	BSD0001		tm	DD	Waste	Jinkas	fr		
BSD016 64 67	BSD0016		tm	DD	Waste	Jinkas	fr		
BSD017 109 111	BSD0017		tm	DD	Waste	Jinkas	fr		
BSD022 76 78	BSD0022		tm	DD	Waste	Jinkas	fr		
BSD027 102.8 104.8	BSD0027		tm	DD	Waste	Jinkas	fr		
BSD031 112 114	BSD0031		tm	DD	Waste	Jinkas	fr		
BSD032 59 12 60.5	BSD0032		tm	DD	Waste	Jinkas	fr		
BSD036 121 123	BSD0036		tm	DD	Waste	Jinkas	fr		
BSD037 83.4 84	BSD0037		tm	DD	Waste	Jinkas	fr		
BSD038 65 66.15	BSD0038		tm	DD	Waste	Jinkas	fr		
BSRC1451 75 76	BSRC1451		tm	RC pulp	Waste	Olympia	fr		
BSRC0187 66 68	BSRC0187		ts	RC pulp	Waste	Dingo	fr		
BSD044 35 37	BSD0044	is	ts	DD	Waste	Dingo	mw	<0.5	380
BSD047 30.82 32.89	BSD0047	is	ts	DD	Waste	Jackson	mw	<0.5	940
BSRC0251 26 28	BSRC0251	is	ts	RC pulp	Waste	Jackson	mw		
BSD032 150 152	BSD0032		ts	DD	Waste	Jinkas	fr	<0.5	180
BSD042 28 30	BSD0042	is	ts	DD	Waste	Jinkas	pw		
BSD044 64.08 65.6	BSD0044		xx	DD	Waste	Dingo	fr	<0.5	710
BSD008 47.88 49.17	BSD0008		xx	DD	Waste	Dingo	fr		
BSD009 103.5 103.8	BSD0009		xx	DD	Waste	Dingo	fr		
BSRC0187 63 64	BSRC0187		xx	RC pulp	Waste	Dingo	fr		
BSD002 54 55.6	BSD0002		xx	DD	Waste	Jinkas	fr	0.67	400
BSD006 146.5 148.5	BSD0006		xx	DD	Waste	Jinkas	fr		
BSD035 1 5 3	BSD0035		zi	DD	Waste	Dingo	cw	<0.5	670
BSD034 0.8 1.5	BSD0034		zi	DD	Waste	Dingo	cw	4.9	380
BSRC0115 2 4	BSRC0115	fk	zi	RC pulp	Waste	Dingo			

Appendix F - GAI results

SRK sample ID	Hole ID	REG_GROUP	ROCK_TYPE_1	DH type	Grade	Pit Name	LOD Weathering	0.07 Ag	82000 Al	1.5 As	10 B	500 Ba	2.6 Be	0.048 Bi	41000 Ca	0.11 Cd	68 Ce	130 Cl	20 Co	100 Cr	3 Cs	50 Cu	950 F	41000 Fe
BSDD0035 45 47	BSDD0035	lsa	cy	DD	Waste	Jinkas	cw	4	0	4	0	0	0	0	0	2	0	0	1	0	0	0	0	0
BSDD0033 22 24	BSDD0033	usa	cy	DD	Waste	Jinkas	sw	4	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
BSDD0044 26.89 28.3	BSDD0044	lsa	cy	DD	Waste	Jinkas	sw	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
BSDD0048 23 25	BSDD0048	lsa	cy	DD	Waste	Jackson	sw	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0
BSDD0002 31 33	BSDD0002	lsa	cy	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
BSDD0002 40 42	BSDD0002	lsa	cy	DD	Waste	Jinkas	cw	4	0	3	0	1	0	0	0	1	0	0	2	0	0	0	1	0
BSDD0006 0.64 1.95	BSDD0006	fk	cy	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0024 1 3	BSDD0024	usa	cy	DD	Waste	Jinkas	cw	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
BSDD0032 12 14	BSDD0032	usa	cy	DD	Waste	Jinkas	cw	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0036 11.17 13	BSDD0036		cy	DD	Waste	Jinkas	cw	2	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0040 1 2 2	BSDD0040		cy	DD	Waste	Jinkas	cw	4	0	1		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0041 8 10	BSDD0041	usa	cy	DD	Waste	Jinkas	cw	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1260 2 4	BSRC1260	mz	cy	RC pulp	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0038 13 14.81	BSDD0038		cy	DD	Waste	Jinkas	sw	3	0	2	0	0	0	0	0	0	0	1	1	0	0	1	0	0
BSDD0046 18 20	BSDD0046	lsa	cy	DD	Waste	Jinkas	sw	1	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC0948 13 15	BSRC0948	lsa	cy	RC pulp	Waste	Olympia	cw	0	0	4		0	0	0	0	0	0	0	0	1	0	0	0	0
BSRC0956 12 15	BSRC0956	lsa	cy	RC pulp	Waste	Olympia	cw	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
BSRC1133 18 20	BSRC1133	usa	cy	RC pulp	Waste	Olympia	cw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1357 6 8	BSRC1357	lsa	cy	RC pulp	Waste	Olympia	sw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1447 3 5	BSRC1447	usa	cy	RC pulp	Waste	Olympia	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0041 1 2	BSDD0041	ls	gg	DD	Waste	Jinkas	sw	5	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0024 77 78 79 80	BSDD0024		gm	RC pulp	Waste	Jackson	fr	0	0	0		0	0	0	0	2	0	0	0	0	0	0	0	0
BSRC0130 69 71	BSRC0130		gm	RC pulp	Waste	Jackson	fr	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
BSRC0131 56 58	BSRC0131		gm	RC pulp	Waste	Jackson	fr	1	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC0143 61 63	BSRC0143		gm	RC pulp	Waste	Jackson	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC0234 56 58	BSRC0234		gm	RC pulp	Waste	Jackson	fr	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1442 16 18	BSRC1442		gm	RC pulp	Waste	Jackson	mw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1286 11 13	BSRC1286	ls	gm	RC pulp	Waste	Jackson	pw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1350 30 32	BSRC1350	ls	gm	RC pulp	Waste	Jackson	pw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1064 10 12	BSRC1064		gm	RC pulp	Waste	Jackson	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0022 47.3 47.8	BSDD0022		gm	DD	Waste	Jinkas	fr	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0040 64 66	BSDD0040		gm	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1279 22 24	BSRC1279	ls	gm	RC pulp	Waste	Jinkas	mw	0	0	0		0	0	1	0	0	0	0	0	0	0	0	0	0
BSRC1594 46 48	BSRC1594	ls	gm	RC pulp	Waste	Jinkas	mw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0037 50 52	BSDD0037	ls	gm	DD	Waste	Jinkas	ww	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1450 56 58	BSRC1450		gm	RC pulp	Waste	Olympia	fr	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1451 65 67	BSRC1451		gm	RC pulp	Waste	Olympia	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1447 27 29	BSRC1447	ls	gm	RC pulp	Waste	Olympia	mw	0	0	1	0	0	0	2	0	0	0	2	1	2	0	0	0	0
BSRC1355 4 6	BSRC1355	ls	gm	RC pulp	Waste	Olympia	pw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC0494 18 20	BSRC0494	ls	md	RC pulp	Waste	Jackson	sw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC0995 97 99	BSRC0995	md	RC pulp	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0022 4.4 4.8	BSDD0022	md	DD	Waste	Jinkas	mw	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0022 8 8.5	BSDD0022	md	DD	Waste	Jinkas	mw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0022 18 18.5	BSDD0022	md	DD	Waste	Jinkas	ww	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
BSDD0008 44.7 46	BSDD0008		tb	DD	Waste	Dingo	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC0096 22 24	BSRC0096	ls	tb	RC pulp	Waste	Dingo	sw	0	0	0		0	0	0	0	0	0	0	1	0	0	0	0	0
BSDD0033 50.28 25	BSDD0033		tb	DD	Waste	Dingo	ww	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC0147 58 60	BSRC0147		tb	RC pulp	Waste	Jackson	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC0629 110 111	BSRC0629		tb	RC pulp	Waste	Jackson	fr	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1602 18 20	BSRC1602	ls	tb	RC pulp	Waste	Jackson	mw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0024 19 5 22	BSDD0024		tb	DD	Waste	Jinkas	cw	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0001 58.82 59.59	BSDD0001		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
BSDD0005 105 105.5	BSDD0005		tb	DD	Waste	Jinkas	fr	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0006 142 144	BSDD0006		tb	DD	Waste	Jinkas	fr	0	0	1		0	0	0	0	0	0	0	1	2	0	0	0	0
BSDD0018 129 131	BSDD0018		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
BSDD0018 138 140	BSDD0018		tb	DD	Waste	Jinkas	fr	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0018 86 88	BSDD0018		tb	DD	Waste	Jinkas	fr	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0027 55.5 57.5	BSDD0027		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0032 164.46 166	BSDD0032		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0036 54 56	BSDD0036		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0039 47.84 48.75	BSDD0039		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC0330 74 76	BSRC0330		tb	RC pulp	Waste	Jinkas	mw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC0453 43 45	BSRC0453		tb	RC pulp	Waste	Jinkas	fr	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1599 78 80	BSRC1599		tb	RC pulp	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
BSDD0026 62.52 64.55	BSDD0026	ls	tb	DD	Waste	Jinkas	mw	5	0	1		0	0	0	0	0	0	0	0	0	0	0	0	0
BSRC1616 47 49	BSRC1616	ls	tb	RC pulp	Waste	Jinkas	mw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0005 5 6	BSDD0005	ls	tb	DD	Waste	Jinkas	pw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0031 36 38	BSDD0031	ls	tb	DD	Waste	Jinkas	pw	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0004 4 5.8	BSDD0004		tb	DD	Waste	Jinkas	sw	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
BSRC0453 6 8	BSRC0453	ls	tb	RC pulp	Waste	Jinkas	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BSDD0039 17 18.5	BSDD0039		tb	DD	Waste	Jinkas	ww	0	0	0		0	0	0	0	0								

Appendix F - GAI results

SRK sample ID	Hole ID	REG_GROUP	ROCK_TYPE_1	DH type	Grade	Pit Name	LOD Weathering	18 Ga	1.8 Ge	5.3 Hf	0.05 Hg	0.049 In	21000 K	32 La	20 Li	23000 Mg	950 Mn	1.5 Mo	23000 Na	20 Nb	80 Ni	1000 P	14 Pb	90 Rb	0.0004 Re
BSDD0035 45 47	BSDD0035	lsa	cy	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
BSDD0033 22 24	BSDD0033	usa	cy	DD	Waste	Dingo	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	
BSDD0044 26.89 28.3	BSDD0044	lsa	cy	DD	Waste	Dingo	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
BSDD0046 23 25	BSDD0048	lsa	cy	DD	Waste	Jackson	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
BSDD0002 31 33	BSDD0002	lsa	cy	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
BSDD0002 40 42	BSDD0002	lsa	cy	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	
BSDD0006 0.64 1.95	BSDD0006	fk	cy	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
BSDD0024 1 3	BSDD0024	usa	cy	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
BSDD0032 12 14	BSDD0032	usa	cy	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
BSDD0036 11.17 13	BSDD0036		cy	DD	Waste	Jinkas	cw	0	0	0		0	0	1	0	0	0	0	0	0	0	0	1	0	1
BSDD0040 1 2 2	BSDD0040		cy	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0041 6 10	BSDD0041	usa	cy	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1260 2 4	BSRC1260	mz	cy	RC pulp	Waste	Jinkas	cw	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0038 13 14.81	BSDD0038		cy	DD	Waste	Jinkas	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0046 18 20	BSDD0046	lsa	cy	DD	Waste	Jinkas	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0948 13 15	BSRC0948	lsa	cy	RC pulp	Waste	Olympia	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0956 12 15	BSRC0956	lsa	cy	RC pulp	Waste	Olympia	cw	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1133 18 20	BSRC1133	usa	cy	RC pulp	Waste	Olympia	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1357 6 8	BSRC1357	lsa	cy	RC pulp	Waste	Olympia	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1447 3 5	BSRC1447	usa	cy	RC pulp	Waste	Olympia	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0041 1 2	BSDD0041	ls	gg	DD	Waste	Jinkas	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0124 77 79 80	BSRC0124		gm	RC pulp	Waste	Jackson	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0130 69 71	BSRC0130		gm	RC pulp	Waste	Jackson	fr	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
BSRC0131 56 58	BSRC0131		gm	RC pulp	Waste	Jackson	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0143 61 63	BSRC0143		gm	RC pulp	Waste	Jackson	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0234 56 58	BSRC0234		gm	RC pulp	Waste	Jackson	fr	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
BSRC1442 16 18	BSRC1442		gm	RC pulp	Waste	Jackson	mw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1286 11 13	BSRC1286	ls	gm	RC pulp	Waste	Jackson	pw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1350 30 32	BSRC1350	ls	gm	RC pulp	Waste	Jackson	pw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1064 10 12	BSRC1064		gm	RC pulp	Waste	Jackson	sw	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
BSDD0022 47.3 47.8	BSDD0022		gm	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0040 64 66	BSDD0040		md	DD	Waste	Jinkas	mw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1279 22 24	BSRC1279	ls	gm	RC pulp	Waste	Jinkas	mw	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
BSRC1594 46 48	BSRC1594	ls	gm	RC pulp	Waste	Jinkas	mw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0037 50 52	BSDD0037	ls	gm	DD	Waste	Jinkas	ww	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1450 56 58	BSRC1450		gm	RC pulp	Waste	Olympia	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1451 65 67	BSRC1451		gm	RC pulp	Waste	Olympia	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1447 27 29	BSRC1447	ls	gm	RC pulp	Waste	Olympia	mw	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1
BSRC1355 4 6	BSRC1355	ls	gm	RC pulp	Waste	Olympia	pw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0494 18 20	BSRC0494	ls	md	RC pulp	Waste	Jackson	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
BSRC0995 97 99	BSRC0995	md	RC pulp	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0022 4.4 4.8	BSDD0022	md	DD	Waste	Jinkas	mw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0022 6 8.5	BSDD0022	md	DD	Waste	Jinkas	mw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
BSDD0022 18 18.5	BSDD0022	md	DD	Waste	Jinkas	ww	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0008 44.7 46	BSDD0008		tb	DD	Waste	Dingo	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0096 22 24	BSRC0096	ls	tb	RC pulp	Waste	Dingo	sw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0033 50.28 25	BSDD0033		tb	DD	Waste	Dingo	ww	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0147 58 60	BSRC0147		tb	RC pulp	Waste	Jackson	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0629 110 111	BSRC0629		tb	RC pulp	Waste	Jackson	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1602 18 20	BSRC1602	ls	tb	RC pulp	Waste	Jackson	mw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0024 19 5 22	BSDD0024		tb	DD	Waste	Jinkas	cw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0001 58.82 59.59	BSDD0001		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0005 105 105.5	BSDD0005		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0006 142 144	BSDD0006		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1
BSDD0018 129 131	BSDD0018		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0018 138 140	BSDD0018		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0018 86 88	BSDD0018		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0027 55.5 57.5	BSDD0027		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0032 164.46 166	BSDD0032		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0036 54 56	BSDD0036		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0039 47.84 48.75	BSDD0039		tb	DD	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0320 74 76	BSRC0320		tb	RC pulp	Waste	Jinkas	ww	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC0453 43 45	BSRC0453		tb	RC pulp	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1599 78 80	BSRC1599		tb	RC pulp	Waste	Jinkas	fr	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
BSDD0026 62.52 64.55	BSDD0026	ls	tb	DD	Waste	Jinkas	mw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSRC1616 47 49	BSRC1616	ls	tb	RC pulp	Waste	Jinkas	mw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0005 5 6	BSDD0005	ls	tb	DD	Waste	Jinkas	pw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0031 36 38	BSDD0031	ls	tb	DD	Waste	Jinkas	pw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BSDD0004 4 5.8	BSDD0004																								

Appendix F - GAI results

SRK sample ID	Hole ID	REG_GROUP	ROCK_TYPE_1	DH type	Grade	Pit Name	LOD Weathering	260 \$	0.2 Sb	16 Sc	0.05 Se	2.2 Sn	370 Sr	2 Ta	0.005 Te	12 Th	5600 Tl	0.6 Tl	2.4 U	160 V	1 W	30 Y	75 Zn	190 Zr	25 Total N
BSD0035 45 47	BSD0035	lsa	cy	DD	Waste	Jinkas	cw	0	1	0	3	2	0	0	4	0	0	0	0	5	0	2	0	5	
BSD0033 22 24	BSD0033	usa	cy	DD	Waste	Jinkas	sw	0	0	0	3	0	0	0	4	0	0	0	6	0	0	2	0	0	
BSD0044 26.89 28.3	BSD0044	lsa	cy	DD	Waste	Dingo	sw	0	0	0	3	0	0	0	4	0	0	0	3	0	0	0	0	0	
BSD0046 23 25	BSD0046	lsa	cy	DD	Waste	Jackson	sw	0	0	0	2	0	0	0	4	0	0	0	0	2	0	0	0	4	
BSD0002 31 33	BSD0002	lsa	cy	DD	Waste	Jinkas	cw	0	0	0	3	0	0	0	4	0	0	0	0	5	0	0	0	0	
BSD0002 40 42	BSD0002	lsa	cy	DD	Waste	Jinkas	cw	1	2	0	3	0	0	0	4	0	0	0	1	0	4	0	1	3	
BSD0006 0.64 1.95	BSD0006	fk	cy	DD	Waste	Jinkas	cw	0	0	0	3	0	0	0	4	0	0	0	0	1	0	0	0	3	
BSD0024 1 3	BSD0024	usa	cy	DD	Waste	Jinkas	cw	0	0	0	3	0	0	0	4	0	0	0	0	2	0	0	0	2	
BSD0032 12 14	BSD0032	usa	cy	DD	Waste	Jinkas	cw	0	0	0	4	0	0	0	4	0	0	0	0	3	0	0	0	0	
BSD0036 11.17 13	BSD0036		cy	DD	Waste	Jinkas	cw	0	0	0	3	0	0	0	4	0	0	0	0	2	0	0	0	0	
BSD0040 1.2 2	BSD0040		cy	DD	Waste	Jinkas	cw	0	0	0	2	0	0	0	4	0	0	0	0	4	0	0	0	0	
BSD0041 6 10	BSD0041	usa	cy	DD	Waste	Jinkas	cw	0	0	0	3	0	0	0	4	0	0	0	0	4	0	0	0	0	
BSRC1260 2 4	BSRC1260	mz	cy	RC pulp	Waste	Jinkas	cw	0	0	0	2	0	0	0	4	0	0	0	0	2	0	0	0	0	
BSD0038 13 14.81	BSD0038		cy	DD	Waste	Jinkas	sw	0	0	0	3	0	0	0	4	0	0	0	0	2	0	1	0	0	
BSD0046 18 20	BSD0046	lsa	cy	DD	Waste	Jinkas	sw	0	0	0	2	0	0	0	4	0	0	0	0	2	0	0	0	0	
BSRC0948 13 15	BSRC0948	lsa	cy	RC pulp	Waste	Olympia	cw	0	1	0	3	0	0	0	4	0	0	0	0	2	0	0	0	0	
BSRC0956 12 15	BSRC0956	lsa	cy	RC pulp	Waste	Olympia	cw	0	0	0	4	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSRC1133 18 20	BSRC1133	usa	cy	RC pulp	Waste	Olympia	cw	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSRC1357 6 8	BSRC1357	lsa	cy	RC pulp	Waste	Olympia	sw	0	0	0	2	0	0	0	4	0	0	0	0	1	0	0	0	0	
BSRC1447 3 5	BSRC1447	usa	cy	RC pulp	Waste	Olympia	sw	0	0	0	2	0	0	0	4	0	0	0	0	5	0	0	0	0	
BSD0041 1 2	BSD0041	ls	gg	DD	Waste	Jinkas	sw	0	0	0	2	0	0	0	4	0	0	0	0	1	0	0	0	4	
BSRC0124 77 78 79 80	BSRC0124	gm	RC pulp	Waste	Jackson	fr	3	0	0	0	2	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSRC0130 69 71	BSRC0130	gm	RC pulp	Waste	Jackson	fr	6	0	0	0	3	0	0	0	5	0	0	0	0	3	0	0	0	0	
BSRC0131 56 58	BSRC0131	gm	RC pulp	Waste	Jackson	fr	2	0	0	0	2	0	0	0	4	0	0	0	0	1	0	0	0	0	
BSRC0143 61 63	BSRC0143	gm	RC pulp	Waste	Jackson	fr	2	0	0	0	2	0	0	0	4	0	0	0	0	1	0	0	0	0	
BSRC0234 56 58	BSRC0234	gm	RC pulp	Waste	Jackson	fr	3	0	0	0	2	0	0	0	4	0	0	0	0	2	0	0	0	0	
BSRC1442 16 18	BSRC1442	gm	RC pulp	Waste	Jackson	mw	0	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSRC1286 11 13	BSRC1286	ls	gm	RC pulp	Waste	Jackson	pw	0	0	0	2	0	0	0	4	0	0	0	0	1	0	0	0	0	
BSRC1350 30 32	BSRC1350	ls	gm	RC pulp	Waste	Jackson	pw	0	0	0	2	0	0	0	4	0	0	0	0	1	0	0	0	0	
BSRC1064 10 12	BSRC1064	gm	RC pulp	Waste	Jackson	sw	1	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0022 47.3 47.8	BSD0022	gm	DD	Waste	Jinkas	fr	0	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0040 64 66	BSD0040	gm	DD	Waste	Jinkas	fr	0	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSRC1279 22 24	BSRC1279	ls	gm	RC pulp	Waste	Jinkas	mw	1	0	0	2	0	0	0	4	0	0	0	0	1	0	0	0	0	
BSRC1594 46 48	BSRC1594	ls	gm	RC pulp	Waste	Jinkas	mw	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0037 50 52	BSD0037	ls	gm	DD	Waste	Jinkas	vw	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	4	
BSRC1450 56 58	BSRC1450	gm	RC pulp	Waste	Olympia	fr	0	0	0	0	2	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSRC1451 65 67	BSRC1451	gm	RC pulp	Waste	Olympia	fr	0	0	0	0	2	0	0	0	4	0	0	0	0	2	0	0	0	0	
BSRC1447 27 29	BSRC1447	ls	gm	RC pulp	Waste	Olympia	mw	1	0	0	3	0	0	0	4	0	0	0	0	3	0	0	0	0	
BSRC1355 4 6	BSRC1355	ls	gm	RC pulp	Waste	Olympia	pw	0	0	0	2	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSRC0494 18 20	BSRC0494	ls	md	RC pulp	Waste	Jackson	sw	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSRC0956 97 99	BSRC0956	md	RC pulp	Waste	Jinkas	fr	3	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0022 4.4 4.8	BSD0022	md	DD	Waste	Jinkas	mw	3	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0022 6 8.5	BSD0022	md	DD	Waste	Jinkas	mw	2	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	2	
BSD0022 18 18.5	BSD0022	md	DD	Waste	Jinkas	vw	2	0	0	0	3	0	0	0	4	0	0	0	0	2	0	0	0	0	
BSD0008 44.7 46	BSD0008	tb	DD	Waste	Dingo	fr	2	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSRC0096 22 24	BSRC0096	ls	tb	RC pulp	Waste	Dingo	sw	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0033 50.28 25	BSD0033	tb	DD	Waste	Dingo	vw	3	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	4	
BSRC0147 58 60	BSRC0147	tb	RC pulp	Waste	Jackson	fr	1	0	0	0	2	0	0	0	4	0	0	0	0	2	0	0	0	0	
BSRC0629 110 111	BSRC0629	tb	RC pulp	Waste	Jackson	fr	0	0	0	0	2	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSRC1602 18 20	BSRC1602	ls	tb	RC pulp	Waste	Jackson	mw	0	0	0	2	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSD0024 19 5 22	BSD0024	tb	DD	Waste	Jinkas	cw	0	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0001 58.92 59.59	BSD0001	tb	DD	Waste	Jinkas	fr	0	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0005 105 105.5	BSD0005	tb	DD	Waste	Jinkas	fr	1	0	0	0	2	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSD0006 142 144	BSD0006	tb	DD	Waste	Jinkas	fr	2	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0018 129 131	BSD0018	tb	DD	Waste	Jinkas	fr	2	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0018 138 140	BSD0018	tb	DD	Waste	Jinkas	fr	0	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0018 86 88	BSD0018	tb	DD	Waste	Jinkas	fr	2	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0027 55.5 57.5	BSD0027	tb	DD	Waste	Jinkas	fr	0	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0032 164.46 166	BSD0032	tb	DD	Waste	Jinkas	fr	1	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	4	
BSD0036 54 56	BSD0036	tb	DD	Waste	Jinkas	fr	2	0	0	0	2	0	0	0	4	0	0	0	0	4	0	0	0	5	
BSD0039 47.84 48.75	BSD0039	tb	DD	Waste	Jinkas	fr	0	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	
BSRC0320 74 76	BSRC0320	tb	RC pulp	Waste	Jinkas	fr	2	0	0	0	3	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSRC0453 43 45	BSRC0453	tb	RC pulp	Waste	Jinkas	fr	1	0	0	0	3	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSRC1599 78 80	BSRC1599	tb	RC pulp	Waste	Jinkas	fr	2	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	1	0	
BSD0026 62.52 64.55	BSD0026	ls	tb	DD	Waste	Jinkas	mw	1	0	0	3	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSRC1616 47 49	BSRC1616	ls	tb	RC pulp	Waste	Jinkas	mw	0	0	0	3	0	0	0	4	0	0	0	0	0	2	0	0	0	
BSD0005 5 6	BSD0005	ls	tb	DD	Waste	Jinkas	pw	0	0	0	0	2	0	0	4	0	0	0	0	0	0	0	0	0	
BSD0031 36 38	BSD0031	ls	tb	DD	Waste	Jinkas	pw	0	0	0	3	0	0	0	4	0	0	0	0	3	0	0	0	0	
BSD0004 4 5.8	BSD0004	ls	tb	DD	Waste	Jinkas	sw	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	2	
BSRC0453 6 8	BSRC0453	ls	tb	RC pulp	Waste	Jinkas	sw	0	0	0	2	0	0	0	4	0	0	0	0	0	1	0	0	0	
BSD0039 17 18.5	BSD0039	tb	DD	Waste	Jinkas	vw																			

Appendix G Deionised water leach results

Appendix G - 1:3 MEND Leach (0.2 µm filtered) Metals Results

SRK sample ID	Hole ID	REG_GROUP	ROCK_TYP E_1	DH type	Grade	Pit Name	Units	pH units	µS/cm	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
							LOD		2	5	5	5	5	5	0.5	0.5	0.5	0.5	1	1	0.1	0.01	0.001
							Weathering	pH	EC	HCO ₃	CO ₃	OH	Total Alk	Acidity	Ca	Mg	K	Na	Cl	SO4	F	Al	Sb
BSDD016 57 59.85	BSDD016		tg	DD	Waste	Jinkas	fr	8.3	270	56	<5	<5	56	<5	3.2	2.2	7.7	26	20	21	0.31	0.092	<0.001
BSDD027 106.52 108.7	BSDD027		tg	DD	Waste	Jinkas	fr	8.5	160	57	<5	<5	57	<5	2.7	1	5.1	14	7.2	4.7	0.29	0.48	<0.001
BSRC0955 44 48	BSRC0955		tg	RC pulp	Waste	Olympia	fr	8.1	260	52	<5	<5	52	<5	0.9	1	6.3	34	42	26	0.6	0.084	<0.001
BSDD005 16.3 18	BSDD005		tg	DD	Waste	Jinkas	pw	8.0	220	36	<5	<5	36	<5	12	3.8	5.1	12	13	37	0.2	0.11	<0.001
BSDD005 33.8 34	BSDD005		tg	DD	Waste	Jinkas	pw	4.2	530	<5	<5	<5	<5	23	17	23	7.6	5.5	3.5	220	0.56	2.1	<0.001
BSDD041 14 15.98	BSDD041	ls	tg	DD	Waste	Jinkas	sw	8.7	420	100	20	<5	120	<5	<2.5	4	<2.5	81	53	46	5	11	<0.001
BSRC0676 10 12	BSRC0676	lsa	tg	RC pulp	Waste	Jinkas	cw	6.3	2,500	6.7	<5	<5	6.7	5.9	4.3	16	23	410	720	110	0.2	<0.01	<0.001
BSDD008 44.7 46	BSDD008		tb	DD	Waste	Dingo	fr	8.2	170	43	<5	<5	43	<5	5.8	0.52	6.3	13	8	10	0.25	0.21	<0.001
BSDD018 138 140	BSDD018		tb	DD	Waste	Jinkas	fr	8.9	380	99	<5	<5	99	<5	1.2	3.5	2.3	70	5.3	77	1.4	4.5	<0.001
BSDD036 54 56	BSDD036		tb	DD	Waste	Jinkas	fr	8.2	300	48	<5	<5	48	<5	<0.5	0.79	12	34	9.5	52	1.2	0.12	<0.001
BSDD005 105 105.5	BSDD005		tb	DD	Waste	Jinkas	fr ¹	8.3	150	44	<5	<5	44	<5	8	1.4	5.7	8	6.8	13	0.23	0.13	<0.001
BSDD033 50 52	BSDD033		tb	DD	Waste	Dingo	ww	7.8	270	45	<5	<5	45	<5	9.9	3.1	4.4	17	7.9	38	0.28	0.15	<0.001
BSRC1181 43 45	BSRC1181		tb	RC pulp	Waste	Jinkas	ww	7.0	1,100	26	<5	<5	26	5.1	2.3	11	9.2	170	310	11	0.3	<0.01	<0.001
BSDD016 128 130	BSDD016		tm	DD	Waste	Jinkas	fr	7.8	380	59	<5	<5	59	<5					2.9	71	0.37	0.042	<0.001
BSDD033 70 72	BSDD033		tm	DD	Waste	Dingo	fr	8.5	130	44	<5	<5	44	<5	5	2.4	0.9	13	4.9	3.9	0.2	0.77	<0.001
BSRC0233 69 71	BSRC0233		tm	RC pulp	Waste	Jackson	fr	4.7	2,600	6.6	<5	<5	6.6	29	240	190	20	21	14	1700	0.2	0.71	<0.001
BSDD006 87 89	BSDD006		tm	DD	Waste	Jinkas	fr ¹	8.5	140	40	<5	<5	40	<5	6.5	2.2	3.2	8.4	4.8	8.7	0.2	0.084	<0.001
BSDD044 28.31 29	BSDD044	ls	tm	DD	Waste	Dingo	mw	NT	NT	NT	NT	NT	NT	NT	0.52	11	5.1	87	95	19	NT	8.6	0.0014
BSDD033 22 24	BSDD033	usa	cy	DD	Waste	Dingo	sw	6.3	1,000	6.2	<5	<5	6.2	5.6	0.53	3.3	3.9	170	260	48	0.2	0.012	<0.001
BSDD048 23 25	BSDD048	lsa	cy	DD	Waste	Jackson	sw	7.0	5,200	8.3	<5	<5	8.3	7.6	6.2	74	9.7	810	1400	360	0.59	<0.01	<0.001
BSDD002 31 33	BSDD002	lsa	cy	DD	Waste	Jinkas	cw	7.3	880	22	<5	<5	22	5.6	<0.5	1.3	3.8	150	160	100	1.2	0.29	<0.001
BSDD002 40 42	BSDD002	lsa	cy	DD	Waste	Jinkas	cw	6.4	3,800	6.2	<5	<5	6.2	6.1	17	40	18	640	580	920	0.23	0.069	<0.001
BSDD035 45 47	BSDD035	lsa	cy	DD	Waste	Dingo	cw	NT	NT	NT	NT	NT	NT	NT	1.6	4.4	2	200	290	71	NT	INS	INS
BSDD036 11.17 13	BSDD036		cy	DD	Waste	Jinkas	cw	4.4	1,100	<5	<5	<5	<5	9.8	<0.5	5.5	6.5	150	280	21	0.2	0.024	<0.001
BSRC0130 69 71	BSRC0130		gm	RC pulp	Waste	Jackson	fr	4.2	2,400	<5	<5	<5	<5	290	240	110	2.8	5	14	1400	0.21	6.4	<0.001
BSRC0234 56 58	BSRC0234		gm	RC pulp	Waste	Jackson	fr	8.0	850	63	<5	<5	63	<5	61	20	22	48	33	290	0.54	0.025	<0.001
BSDD037 50 52	BSDD037	ls	gm	DD	Waste	Jinkas	ww	8.8	170	34	<5	<5	34	<5	<0.5	0.76	1.6	25	16	13	0.88	1.9	<0.001
BSRC1286 11 13	BSRC1286	ls	gm	RC pulp	Waste	Jackson	pw	8.6	400	55	<5	<5	55	<5	6.9	1.8	15	50	65	9	1.2	0.066	<0.001
BSRC1355 4 6	BSRC1355	ls	gm	RC pulp	Waste	Olympia	pw	7.4	240	57	<5	<5	57	5.9	0.54	1.7	3	37	18	39	1.1	0.37	<0.001
BSRC1279 22 24	BSRC1279	ls	gm	RC pulp	Waste	Jinkas	mw	8.9	400	120	<5	<5	120	<5	0.56	<0.5	4.1	71	46	30	2.2	0.12	<0.001
BSDD048 57 59	BSDD048		ti	DD	Waste	Jackson	fr	4.4	990	<5	<5	<5	<5	150	22	26	23	13	9.6	480	0.39	2	<0.001
BSDD001 109 111	BSDD001		ti	DD	Waste	Jinkas	fr ¹	8.2	190	58	<5	<5	58	<5	9.1	1.2	3.7	10	9.7	15	0.2	0.16	<0.001
BSDD004 76 78	BSDD004		ti	DD	Waste	Jinkas	fr ¹	8.1	180	42	<5	<5	42	<5	8.3	2.3	5.1	8.5	4	19	0.27	0.072	<0.001
BSDD035 48 49.74	BSDD035		ti	DD	Waste	Dingo	pw	7.5	340	37	<5	<5	37	5.2	1.7	12	1.3	52	68	11	1	0.095	0.0014
BSRC0187 63 64	BSRC0187		xx	RC pulp	Waste	Dingo	fr	NT	NT	NT	NT	NT	NT	NT	INS	INS	INS	INS	NT	NT	NT	INS	INS
BSDD002 54 55.6	BSDD002		xx	DD	Waste	Jinkas	fr ¹	9.3	200	33	<5	<5	33	<5	16	0.81	2.3	10	7.4	44	0.2	0.18	0.0024
BSDD022 18 18.5	BSDD022		md	DD	Waste	Jinkas	ww	8.1	220	82	<5	<5	82	<5	0.94	16	1.2	40	5.4	31	2.7	10	<0.001
BSDD022 4.4 4.8	BSDD022		md	DD	Waste	Jinkas	mw	8.3	360	68	<5	<5	68	<5	2.5	1.4	3.5	53	8.2	69	0.62	0.22	<0.001
BSDD022 8 8.5	BSDD022		md	DD	Waste	Jinkas	mw	9.0	370	92	<5	<5	92	<5	1.4	3.4	2.5	71	4.6	74	1.1	4.2	<0.001
BSDD032 150 152	BSDD032		ts	DD	Waste	Jinkas	fr	9.0	100	34	<5	<5	34	<5	6	0.81	0.87	6.4	5.3	2.5	0.2	0.45	<0.001
BSDD047 30.82 32.89	BSDD047	ls	ts	DD	Waste	Jackson	mw	8.2	1,000	100	6.2	<5	110	<5	15	21	4.5	150	61	250	0.72	<0.01	<0.001
BSDD016 41 43.5	BSDD016		tbg	DD	Waste	Jinkas	fr	8.3	230	54	<5	<5	54	<5	2.4	2.3	7	24	14	17	0.2	0.093	<0.001
BSDD006 139 141	BSDD006		tbg	DD	Waste	Jinkas	fr ¹	8.3	160	49	<5	<5	49	<5	6.7	1.8	3.4	9.3	6.9	7.9	0.21	0.15	<0.001
BSDD006 96 98	BSDD006		tbg	DD	Waste	Jinkas	fr ¹	8.2	170	48	<5	<5	48	<5	5.1	1.4	7.3	12	12	6.5	0.39	0.17	<0.001
BSDD034 0.8 1.5	BSDD034		zl	DD	Waste	Dingo	cw	5.7	380	6.3	<5	<5	6.3	6.4	0.66	4.2	0.89	43	97	3.5	0.2	<0.01	<0.001
BSDD035 1.5 3	BSDD035		zl	DD	Waste	Dingo	cw	5.1	1,500	5	<5	<5	5	8	<0.5	4.6	1.5	230	320	150	0.2	<0.01	<0.001
BSDD048 0 0.28	BSDD048	sl	zs	DD	Waste	Jackson	sw	7.1	1,000	26	<5	<5	26	<5	6.3	12	3.3	150	260	41	0.45	0.55	<0.001
BSRC1018 5 7	BSRC1018		zx	RC pulp	Waste	Jinkas	pw	6.1	1,300	13	<5	<5	13	6.4	7.8	11	5.5	200	330	42	0.2	<0.01	<0.001
BSDD038 0 1	BSDD038	sl	zx	DD	Waste	Jinkas	cw	7.1	220	67	<5	<5	67	10	1.9	2.4	1.7	34	22	13	0.2	5.5	<0.001
BSDD041 1 2	BSDD041	ls	gg	DD	Waste	Jinkas	sw	8.7	88	53	<5	<5	53	<5	1.4	5.4	1.4	16	3.6	3.3	0.48	4.8	<0.001
BSDD009 89 89.5 ore	BSDD009		tm	DD	Ore	Dingo	fr	8.4	270	53	<5	<5	53	<5	32	5.4	3	5.1	4.9	30	0.2	0.011	<0.001
BSDD008 51.73 52.73 ore	BSDD008		tm	DD	Ore	Dingo	fr ¹	8.0	270	45	<5	<5	45	<5	35	4.1	2.4	3.5	3	53	0.2	0.8	<0.001
BSDD047 27.69 28.47 ore	BSDD047	ls	tm	DD	Ore	Jackson	mw	2.5	8,500	<5	<5	<5	<5	5400	380	140	<0.5	15	8.2	8500	0.2	180	<0.001
BSDD048 25.4 26.05 ore	BSDD048	lsa	cy	DD	Ore	Jackson	sw	6.9	1,700	9	<5	<5	9	5.8	4.3	23	3.7	220	440	88	0.35	0.03	<0.001
BSDD041 2.46 4.8 ore	BSDD041	usa	cy	DD	Ore	Jinkas	cw	7.3	450	69	<5	<5	69	14	1	3.3	2	78	24	110	0.6	0.36	<0.001
BSDD048 51.81 52.37 ore	BSDD048		ti	DD	Ore	Jackson	fr	7.0	290	11	<5	<5	11	6.8	17	4.5	7.5	9.5	9.1	80	0.2	0.055	<0.001
BSDD005 59 59.5 ore	BSDD005		ti	DD	Ore	Jinkas	fr ¹	7.5	410	28	<5	<5	28	5.1	29	16	6.3	13	11	130	0.34	0.026	<0.001
BSDD031 66.87 67.87 ore	BSDD031		tbg	DD	Ore	Jinkas	fr	8.1	88	23	<5	<5	23	5.4	0.82	1.2	8.2	7.7	2.6	11	0.3	0.33	<0.001
BSDD047 36.12 36.62 ore	BSDD047	ls	tf	DD	Ore	Jackson	mw	6.3	610	9.5	<5	<5	9.5	9.3	27	36	9.3	39	5.7	350	0.2	0.28	<0.001

Appendix G - 1:3 MEND Leach (0.2 µm filtered) Metals Results

SRK sample ID	Hole ID	REG_GROUP	ROCK_TYP E_1	DH type	Grade	Pit Name	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	
							LOD	0.001	0.001	0.0005	0.001	0.02	0.0001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.01	
							Weathering	As	Ba	Be	Bi	B	Cd	Cs	Ce	Cr	Co	Cu	Ga	Ge	Hf	In	Fe
BSDD016 57 59.85	BSDD016		tg	DD	Waste	Jinkas	fr	0.0058	0.0068	<0.0005	<0.001	<0.02	0.00024	<0.001	<0.001	<0.001	<0.001	0.0042	<0.001	<0.001	<0.001	<0.001	0.037
BSDD027 106.52 108.7	BSDD027		tg	DD	Waste	Jinkas	fr	0.0016	0.0058	<0.0005	<0.001	0.029	0.00024	<0.001	<0.001	0.0012	<0.001	0.0026	0.0014	<0.001	<0.001	<0.001	0.44
BSRC0955 44 48	BSRC0955		tg	RC pulp	Waste	Olympia	fr	0.0011	0.006	<0.0005	<0.001	0.043	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.071
BSDD005 16.3 18	BSDD005		tg	DD	Waste	Jinkas	pw	<0.001	0.0053	<0.0005	<0.001	0.033	0.00022	<0.001	<0.001	<0.001	<0.001	0.0027	<0.001	<0.001	<0.001	<0.001	0.013
BSDD005 33.8 34	BSDD005		tg	DD	Waste	Jinkas	pw	<0.001	0.016	<0.0005	<0.001	0.023	0.0014	<0.001	0.0029	0.0018	0.33	0.72	<0.001	<0.001	<0.001	<0.001	0.58
BSDD041 14 15.98	BSDD041	ls	tg	DD	Waste	Jinkas	sw	0.0034	0.026	0.0052	<0.001	0.17	0.00051	<0.001	0.012	0.028	0.042	0.33	0.0043	<0.001	<0.001	<0.001	20
BSRC0676 10 12	BSRC0676	lsa	tg	RC pulp	Waste	Jinkas	cw	<0.001	0.078	<0.0005	<0.001	0.13	<0.0001	<0.001	<0.001	<0.001	0.0012	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01
BSDD008 44.7 46	BSDD008		tb	DD	Waste	Dingo	fr	0.0012	0.0046	<0.0005	<0.001	<0.02	0.0002	<0.001	<0.001	<0.001	<0.001	0.0028	0.0016	<0.001	<0.001	<0.001	0.043
BSDD018 138 140	BSDD018		tb	DD	Waste	Jinkas	fr	0.0079	0.056	0.00054	<0.001	0.068	0.00014	<0.001	0.0035	0.005	0.018	0.023	0.0036	<0.001	<0.001	<0.001	8.7
BSDD036 54 56	BSDD036		tb	DD	Waste	Jinkas	fr	0.0074	0.0034	<0.0005	<0.001	0.035	0.00015	<0.001	<0.001	<0.001	<0.001	0.0024	<0.001	<0.001	<0.001	<0.001	0.24
BSDD005 105 105.5	BSDD005		tb	DD	Waste	Jinkas	fr ¹	<0.001	0.0021	<0.0005	<0.001	0.049	0.00011	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	0.015
BSDD033 50 52	BSDD033		tb	DD	Waste	Dingo	vw	<0.001	0.0067	0.0005	<0.001	0.063	0.00058	<0.001	<0.001	<0.001	0.001	0.0023	<0.001	<0.001	<0.001	<0.001	0.21
BSRC1181 43 45	BSRC1181		tb	RC pulp	Waste	Jinkas	vw	<0.001	0.075	<0.0005	<0.001	0.034	<0.0001	<0.001	<0.001	<0.001	0.0058	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01
BSDD016 128 130	BSDD016		tm	DD	Waste	Jinkas	fr	<0.001	0.011	<0.0005	<0.001	<0.02	0.00039	<0.001	<0.001	<0.001	0.0024	0.0021	<0.001	<0.001	<0.001	<0.001	0.1
BSDD033 70 72	BSDD033		tm	DD	Waste	Dingo	fr	<0.001	0.0015	0.00091	<0.001	0.034	0.00086	<0.001	<0.001	0.0018	0.0015	0.0038	0.0031	<0.001	<0.001	<0.001	0.79
BSRC0233 69 71	BSRC0233		tm	RC pulp	Waste	Jackson	fr	<0.001	0.013	0.00054	<0.001	0.025	0.0016	0.0013	0.013	0.0033	0.64	0.022	<0.001	<0.001	<0.001	<0.001	3.6
BSDD006 87 89	BSDD006		tm	DD	Waste	Jinkas	fr ¹	0.0057	0.0049	0.00064	<0.001	0.043	0.00072	<0.001	<0.001	<0.001	<0.001	0.0028	<0.001	<0.001	<0.001	<0.001	0.02
BSDD044 28.31 29	BSDD044	ls	tm	DD	Waste	Dingo	mw	<0.001	0.015	0.0018	<0.001	0.092	0.00086	<0.001	0.0091	0.028	0.019	0.037	0.0033	<0.001	<0.001	<0.001	15
BSDD033 22 24	BSDD033	usa	cy	DD	Waste	Dingo	sw	<0.001	0.0026	0.001	<0.001	0.086	0.00089	<0.001	<0.001	0.0013	0.0016	0.0028	<0.001	<0.001	<0.001	<0.001	0.012
BSDD048 23 25	BSDD048	lsa	cy	DD	Waste	Jackson	sw	<0.001	0.0045	<0.0005	<0.001	0.11	0.00032	<0.001	<0.001	0.0036	<0.001	0.0018	<0.001	<0.001	<0.001	<0.001	0.011
BSDD002 31 33	BSDD002	lsa	cy	DD	Waste	Jinkas	cw	0.0014	0.0037	<0.0005	<0.001	0.2	0.00019	<0.001	<0.001	0.0015	<0.001	0.0032	<0.001	<0.001	<0.001	<0.001	0.76
BSDD002 40 42	BSDD002	lsa	cy	DD	Waste	Jinkas	cw	<0.001	0.014	<0.0005	<0.001	0.24	0.00036	<0.001	<0.001	0.0024	0.0096	0.0039	<0.001	<0.001	<0.001	<0.001	0.16
BSDD035 45 47	BSDD035	lsa	cy	DD	Waste	Dingo	cw	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS
BSDD036 11.17 13	BSDD036		cy	DD	Waste	Jinkas	cw	<0.001	0.01	<0.0005	<0.001	0.075	0.00042	<0.001	<0.001	<0.001	0.0016	0.015	<0.001	<0.001	<0.001	<0.001	0.011
BSRC0130 69 71	BSRC0130		gm	RC pulp	Waste	Jackson	fr	<0.001	0.014	0.0019	<0.001	0.042	0.0018	<0.001	0.03	0.0016	0.42	0.03	0.0018	<0.001	<0.001	<0.001	63
BSRC0234 56 58	BSRC0234		gm	RC pulp	Waste	Jackson	fr	<0.001	0.036	<0.0005	<0.001	0.055	<0.0001	<0.001	<0.001	<0.001	<0.001	0.0024	<0.001	<0.001	<0.001	<0.001	<0.01
BSDD037 50 52	BSDD037	ls	gm	DD	Waste	Jinkas	vw	0.0018	0.073	0.00093	<0.001	0.035	0.00088	<0.001	0.0058	0.0048	0.0032	0.0032	0.0028	<0.001	<0.001	<0.001	2.7
BSRC1286 11 13	BSRC1286	ls	gm	RC pulp	Waste	Jackson	pw	<0.001	0.0084	<0.0005	<0.001	<0.02	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01
BSRC1355 4 6	BSRC1355	ls	gm	RC pulp	Waste	Olympia	pw	<0.001	0.029	<0.0005	<0.001	0.025	<0.0001	<0.001	0.0054	0.002	<0.001	0.0065	<0.001	<0.001	<0.001	<0.001	1.3
BSRC1279 22 24	BSRC1279	ls	gm	RC pulp	Waste	Jinkas	mw	<0.001	0.0023	<0.0005	<0.001	0.02	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0012	<0.001	<0.001	<0.001	0.01
BSDD048 57 59	BSDD048		ti	DD	Waste	Jackson	fr	<0.001	0.062	0.0019	<0.001	0.033	0.0028	0.0015	0.005	0.0013	0.83	0.38	<0.001	<0.001	<0.001	<0.001	14
BSDD001_109_111	BSDD001		ti	DD	Waste	Jinkas	fr ¹	0.0045	0.0027	0.00057	<0.001	0.033	0.00045	<0.001	<0.001	<0.001	<0.001	0.0051	0.0014	<0.001	<0.001	<0.001	0.034
BSDD004_76_78	BSDD004		ti	DD	Waste	Jinkas	fr ¹	<0.001	0.003	<0.0005	<0.001	0.023	0.00016	<0.001	<0.001	<0.001	<0.001	0.0028	<0.001	<0.001	<0.001	<0.001	0.017
BSDD035 48 49.74	BSDD035		ti	DD	Waste	Dingo	pw	0.0058	<0.001	<0.0005	<0.001	0.094	0.0004	<0.001	<0.001	<0.001	<0.001	0.0048	<0.001	<0.001	<0.001	<0.001	0.049
BSRC0187 63 64	BSRC0187		xx	RC pulp	Waste	Dingo	fr	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS
BSDD002_54_55.6	BSDD002		xx	DD	Waste	Jinkas	fr ¹	0.018	0.0025	0.00054	<0.001	0.036	0.0005	<0.001	<0.001	0.0012	<0.001	0.006	<0.001	<0.001	<0.001	<0.001	0.36
BSDD022 18 18.5	BSDD022		md	DD	Waste	Jinkas	vw	0.0022	0.073	0.0014	<0.001	0.09	0.00034	<0.001	0.0096	0.03	0.055	0.012	0.0058	<0.001	<0.001	<0.001	18
BSDD022 4.4 4.8	BSDD022		md	DD	Waste	Jinkas	mw	0.0036	0.032	<0.0005	<0.001	0.09	0.00016	<0.001	<0.001	<0.001	<0.001	0.0024	<0.001	<0.001	<0.001	<0.001	0.21
BSDD022 8 8.5	BSDD022		md	DD	Waste	Jinkas	mw	0.016	0.055	0.00087	<0.001	0.11	0.0006	<0.001	0.0032	0.0051	0.017	0.022	0.0034	<0.001	<0.001	<0.001	8.2
BSDD032 150 152	BSDD032		ts	DD	Waste	Jinkas	fr	0.0015	0.0019	0.00076	<0.001	0.055	0.00066	<0.001	<0.001	0.0014	0.0011	0.0035	0.0015	<0.001	<0.001	<0.001	0.33
BSDD047 30.82 32.89	BSDD047	ls	ts	DD	Waste	Jackson	mw	<0.001	0.001	0.00062	<0.001	0.055	0.00052	<0.001	<0.001	0.0018	<0.001	0.0018	<0.001	<0.001	<0.001	<0.001	0.025
BSDD016 41 43.5	BSDD016		tbg	DD	Waste	Jinkas	fr	0.016	0.0069	0.0033	0.0024	0.022	0.0028	0.0034	<0.001	0.0037	0.0033	0.006	0.003	<0.001	<0.001	<0.001	0.057
BSDD006 139 141	BSDD006		tbg	DD	Waste	Jinkas	fr ¹	0.0012	0.0027	<0.0005	<0.001	<0.02	0.00026	<0.001	<0.001	<0.001	<0.001	0.0022	0.0013	<0.001	<0.001	<0.001	0.04
BSDD006 96 98	BSDD006		tbg	DD	Waste	Jinkas	fr ¹	0.0026	0.0044	<0.0005	<0.001	0.028	0.00014	<0.001	<0.001	<0.001	<0.001	0.0023	0.0015	<0.001	<0.001	<0.001	0.025
BSDD034 0.8 1.5	BSDD034		zl	DD	Waste	Dingo	cw	<0.001	0.0072	<0.0005	<0.001	0.064	0.00033	<0.001	<0.001	<0.001	<0.001	0.0018	<0.001	<0.001	<0.001	<0.001	0.01
BSDD035 1.5 3	BSDD035		zl	DD	Waste	Dingo	cw	<0.001	0.025	<0.0005	<0.001	0.16	0.00026	<0.001	<0.001	<0.001	0.0018	0.0045	<0.001	<0.001	<0.001	<0.001	<0.01
BSDD048 0 0.28	BSDD048	sl	zs	DD	Waste	Jackson	sw	0.0012	0.079	0.00053	<0.001	0.22	0.0005	<0.001	0.0099	0.0017	0.0013	0.017	<0.001	<0.001	<0.001	<0.001	0.57
BSRC1018 5 7	BSRC1018		zx	RC pulp	Waste	Jinkas	pw	<															

Appendix G - 1:3 MEND Leach (0.2 µm filtered) Metals Results

SRK sample ID	Hole ID	REG_GROUP	ROCK_TYP E_1	DH type	Grade	Pit Name	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	
							LOD	0.0005	0.001	0.001	0.001	0.00005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
							Weathering	La	Pb	Li	Mn	Hg	Mo	Ni	Nb	Re	Rb	Sc	Se	Ag	Sr	Ta	Te
BSDD016 57 59.85	BSDD016		tg	DD	Waste	Jinkas	fr	<0.0005	<0.001	0.0065	0.022	<0.00005	0.025	0.0037	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	0.011	<0.001	<0.001
BSDD027 106.52 108.7	BSDD027		tg	DD	Waste	Jinkas	fr	<0.0005	<0.001	0.004	0.028	<0.00005	0.028	0.0031	<0.001	<0.001	0.0026	<0.001	<0.001	<0.001	0.0083	<0.001	<0.001
BSRC0955 44 48	BSRC0955		tg	RC pulp	Waste	Olympia	fr	<0.0005	<0.001	0.0049	0.0076		0.036	<0.001	<0.001	<0.001	0.0028	<0.001	<0.001	<0.001	0.0088	<0.001	<0.001
BSDD005 16.3 18	BSDD005		tg	DD	Waste	Jinkas	pw	<0.0005	<0.001	0.0053	0.14	<0.00005	0.063	0.0025	<0.001	<0.001	0.0023	<0.001	<0.001	<0.001	0.022	<0.001	<0.001
BSDD005 33.8 34	BSDD005		tg	DD	Waste	Jinkas	pw	0.0017	<0.001	0.064	14	<0.00005	<0.001	0.94	<0.001	<0.001	0.021	<0.001	0.001	<0.001	0.03	<0.001	<0.001
BSDD041 14 15.98	BSDD041	ls	tg	DD	Waste	Jinkas	sw	0.005	0.0012	0.0022	0.58	<0.00005	0.26	0.075	<0.001	<0.001	0.0028	0.016	<0.001	0.0078	0.024	<0.001	<0.001
BSRC0676 10 12	BSRC0676	lsa	tg	RC pulp	Waste	Jinkas	cw	<0.0005	<0.001	<0.001	0.74		<0.001	0.009	<0.001	<0.001	0.036	<0.001	<0.001	<0.001	0.053	<0.001	<0.001
BSDD008 44.7 46	BSDD008		tb	DD	Waste	Dingo	fr	<0.0005	<0.001	0.0089	0.022	<0.00005	0.02	0.0015	<0.001	<0.001	0.0027	<0.001	<0.001	<0.001	0.013	<0.001	<0.001
BSDD018 138 140	BSDD018		tb	DD	Waste	Jinkas	fr	0.0021	0.0037	0.0069	0.26	<0.00005	0.021	0.048	<0.001	<0.001	0.0035	0.0018	<0.001	<0.001	0.014	<0.001	<0.001
BSDD036 54 56	BSDD036		tb	DD	Waste	Jinkas	fr	<0.0005	<0.001	0.016	0.024	<0.00005	0.014	0.0014	<0.001	<0.001	0.0063	<0.001	0.0014	<0.001	0.0053	<0.001	<0.001
BSDD005 105 105.5	BSDD005		tb	DD	Waste	Jinkas	fr ¹	<0.0005	<0.001	0.0068	0.073	<0.00005	0.041	0.0019	<0.001	<0.001	0.0039	<0.001	<0.001	<0.001	0.017	<0.001	<0.001
BSDD033 50 52	BSDD033		tb	DD	Waste	Dingo	vw	0.00066	<0.001	0.014	0.36	<0.00005	0.055	0.0049	<0.001	<0.001	0.0039	<0.001	<0.001	<0.001	0.027	<0.001	<0.001
BSRC1181 43 45	BSRC1181		tb	RC pulp	Waste	Jinkas	vw	<0.0005	<0.001	0.003	0.41		<0.001	0.022	<0.001	<0.001	0.0014	<0.001	<0.001	<0.001	0.013	<0.001	<0.001
BSDD016 128 130	BSDD016		tm	DD	Waste	Jinkas	fr	<0.0005	<0.001	0.0084	1.3	<0.00005	0.033	0.032	<0.001	<0.001	0.0056	<0.001	<0.001	<0.001	0.036	<0.001	<0.001
BSDD033 70 72	BSDD033		tm	DD	Waste	Dingo	fr	0.0011	<0.001	0.0032	0.015	<0.00005	0.018	0.0044	<0.001	<0.001	0.0012	<0.001	<0.001	<0.001	0.0079	<0.001	<0.001
BSRC0233 69 71	BSRC0233		tm	RC pulp	Waste	Jackson	fr	0.007	<0.001	0.35	52		<0.001	15	<0.001	<0.001	0.13	<0.001	0.0073	<0.001	0.54	0.0011	<0.001
BSDD006 87 89	BSDD006		tm	DD	Waste	Jinkas	fr ¹	0.0006	<0.001	0.0076	0.011	<0.00005	0.033	0.002	<0.001	<0.001	0.0013	<0.001	0.0011	<0.001	0.012	<0.001	<0.001
BSDD044 28.31 29	BSDD044	ls	tm	DD	Waste	Dingo	mw	0.0032	<0.001	0.0058	0.062	<0.00005	0.0031	0.035	<0.001	<0.001	0.0014	0.026	<0.001	0.0028	0.0082	<0.001	<0.001
BSDD033 22 24	BSDD033	usa	cy	DD	Waste	Dingo	sw	0.001	0.0012	0.0065	0.022	<0.00005	0.0011	0.003	<0.001	<0.001	0.0023	<0.001	0.001	<0.001	0.0046	<0.001	<0.001
BSDD048 23 25	BSDD048	lsa	cy	DD	Waste	Jackson	sw	<0.0005	<0.001	0.0068	0.039	<0.00005	0.0059	0.0093	<0.001	<0.001	0.0048	<0.001	<0.001	<0.001	0.056	<0.001	<0.001
BSDD002 31 33	BSDD002	lsa	cy	DD	Waste	Jinkas	cw	<0.0005	<0.001	<0.001	0.012	<0.00005	0.006	0.0052	<0.001	<0.001	<0.001	<0.001	<0.001	0.0026	<0.001	<0.001	<0.001
BSDD002 40 42	BSDD002	lsa	cy	DD	Waste	Jinkas	cw	<0.0005	<0.001	0.012	0.68	<0.00005	<0.001	0.094	<0.001	<0.001	0.002	<0.001	0.0025	<0.001	0.044	<0.001	<0.001
BSDD035 45 47	BSDD035	lsa	cy	DD	Waste	Dingo	cw	INS	INS	INS	INS	<0.00005	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS
BSDD036 11.17 13	BSDD036		cy	DD	Waste	Jinkas	cw	<0.0005	<0.001	0.0019	0.039	<0.00005	<0.001	0.0052	<0.001	<0.001	0.006	<0.001	<0.001	<0.001	0.0037	<0.001	<0.001
BSRC0130 69 71	BSRC0130		gm	RC pulp	Waste	Jackson	fr	0.017	<0.001	0.093	69	<0.00005	<0.001	0.94	<0.001	<0.001	0.026	0.001	0.0025	<0.001	0.25	<0.001	<0.001
BSRC0234 56 58	BSRC0234		gm	RC pulp	Waste	Jackson	fr	<0.0005	<0.001	0.029	0.11		0.031	0.0089	<0.001	<0.001	0.025	<0.001	<0.001	<0.001	0.24	<0.001	<0.001
BSDD037 50 52	BSDD037	ls	gm	DD	Waste	Jinkas	vw	0.0039	0.009	0.0022	0.15	<0.00005	0.036	0.0093	<0.001	<0.001	0.0017	<0.001	0.0013	<0.001	0.011	<0.001	<0.001
BSRC1286 11 13	BSRC1286	ls	gm	RC pulp	Waste	Jackson	pw	<0.0005	<0.001	0.0053	0.0029		0.08	0.0017	<0.001	<0.001	0.0093	<0.001	<0.001	<0.001	0.082	<0.001	<0.001
BSRC1355 4 6	BSRC1355	ls	gm	RC pulp	Waste	Olympia	pw	0.0026	<0.001	<0.001	0.028		0.0069	0.0074	<0.001	<0.001	0.0011	<0.001	<0.001	<0.001	0.013	<0.001	<0.001
BSRC1279 22 24	BSRC1279	ls	gm	RC pulp	Waste	Jinkas	mw	<0.0005	<0.001	0.002	0.0012		0.13	<0.001	<0.001	<0.001	0.0015	<0.001	<0.001	<0.001	0.0066	<0.001	<0.001
BSDD048 57 59	BSDD048		ti	DD	Waste	Jackson	fr	0.0037	<0.001	0.065	19	<0.00005	<0.001	15	<0.001	<0.001	0.067	<0.001	0.0016	<0.001	0.071	<0.001	<0.001
BSDD001 109 111	BSDD001		ti	DD	Waste	Jinkas	fr ¹	0.0006	<0.001	0.0056	0.039	<0.00005	0.026	0.002	<0.001	<0.001	0.0035	<0.001	<0.001	<0.001	0.029	<0.001	<0.001
BSDD004 76 78	BSDD004		ti	DD	Waste	Jinkas	fr ¹	<0.0005	<0.001	0.0079	0.034	<0.00005	0.027	0.0013	<0.001	<0.001	0.0037	<0.001	<0.001	<0.001	0.022	<0.001	<0.001
BSDD035 48 49.74	BSDD035		ti	DD	Waste	Dingo	pw	<0.0005	<0.001	0.0018	0.0015	<0.00005	0.0077	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0056	<0.001	<0.001	<0.001
BSRC0187 63 64	BSRC0187		xx	RC pulp	Waste	Dingo	fr	INS	INS	INS	INS		INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS
BSDD002 54 55.6	BSDD002		xx	DD	Waste	Jinkas	fr ¹	0.00062	<0.001	0.0017	0.0058	<0.00005	0.012	0.003	<0.001	<0.001	0.0027	<0.001	<0.001	<0.001	0.036	<0.001	<0.001
BSDD022 18 18.5	BSDD022		md	DD	Waste	Jinkas	vw	0.0029	0.0071	0.011	1	0.000088	0.011	0.078	<0.001	<0.001	0.0012	0.0097	<0.001	<0.001	0.011	<0.001	<0.001
BSDD022 4.4 4.8	BSDD022		md	DD	Waste	Jinkas	mw	<0.0005	<0.001	0.002	0.014	<0.00005	0.044	0.002	<0.001	<0.001	0.0031	<0.001	<0.001	<0.001	0.044	<0.001	<0.001
BSDD022 8 8.5	BSDD022		md	DD	Waste	Jinkas	mw	0.0022	0.0045	0.0071	0.26	<0.00005	0.022	0.059	<0.001	<0.001	0.003	0.0017	<0.001	<0.001	0.015	<0.001	<0.001
BSDD032 150 152	BSDD032		ts	DD	Waste	Jinkas	fr	0.00083	<0.001	0.0028	0.0061	<0.00005	0.0072	0.0035	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0076	<0.001	<0.001
BSDD047 30.82 32.89	BSDD047	ls	ts	DD	Waste	Jackson	mw	0.00062	<0.001	0.0071	0.11	<0.00005	0.043	0.0044	<0.001	<0.001	0.0017	<0.001	0.0042	<0.001	0.053	<0.001	<0.001
BSDD016 41 43.5	BSDD016		tbg	DD	Waste	Jinkas	fr	0.0038	0.003	0.0081	0.012	<0.00005	0.021	0.0061	<0.001	<0.001	0.0034	<0.001	0.0031	<0.001	0.0091	<0.001	<0.001
BSDD006 139 141	BSDD006		tbg	DD	Waste	Jinkas	fr ¹	<0.0005	<0.001	0.0047	0.045	<0.00005	0.02	0.0015	<0.001	<0.001	0.0024	<0.001	<0.001	<0.001	0.011	<0.001	<0.001
BSDD006 96 98	BSDD006		tbg	DD	Waste	Jinkas	fr ¹	<0.0005	<0.001	0.0068	0.021	<0.00005	0.021	0.0015	<0.001	<0.001	0.0032	<0.001	<0.001	<0.001	0.017	<0.001	<0.001
BSDD034 0.8 1.5	BSDD034		zl	DD	Waste	Dingo	cw	<0.0005	<0.001	<0.001	0.027	<0.00005	<0.001	0.0017	<0.001	<0.001	0.0015	<0.001	<0.001	<0.001	0.0064	<0.001	<0.001
BSDD035 1.5 3	BSDD035		zl	DD	Waste	Dingo	cw	<0.0005	<0.001	0.0039	0.018	<0.00005	<0.001	0.0034	<0.001	<0.001	0.0011	<0.001	<0.001	<0.001	0.0089	<0.001	<0.001
BSDD048 0 0.28	BSDD048	sl	zs	DD	Waste	Jackson	sw	0.0054	0.0013	<0.001	0.0055	<0.00005	0.26	0.0053	<0.001	<0.001	0.0035	<0.001	0.003	0.0011	0.085	<0.001	<0.001
BSRC1018 5 7	BSRC1018		zx	RC pulp	Waste	Jinkas																	

Appendix G - 1:3 MEND Leach (0.2 µm filtered) Metals Results

SRK sample ID	Hole ID	REG_GROUP	ROCK_TYP E_1	DH type	Grade	Pit Name	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	
							LOD	0.001	0.0005	0.001	0.002	0.01	0.001	0.001	0.001	0.001	0.005	0.1	0.005	0.005	0.005	0.01	
							Weathering	Tl	Th	Sn	Ti	W	U	V	Y	Zn	Zr	Si	NH ₃ as N	NO ₃ as N	NO ₂ as N	NO _x as N	Total P
BSDD016 57 59.85	BSDD016		tg	DD	Waste	Jinkas	fr	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	0.023	<0.001	0.0031	<0.005	5.5	0.18	0.53	0.0081	0.54	0.074
BSDD027 106.52 108.7	BSDD027		tg	DD	Waste	Jinkas	fr	<0.001	<0.0005	<0.001	0.022	<0.01	<0.001	0.0095	<0.001	0.0047	<0.005	7.4	0.029	0.049	<0.005	0.054	0.098
BSRC0955 44 48	BSRC0955		tg	RC pulp	Waste	Olympia	fr	<0.001	<0.0005	<0.001	<0.002	0.018	<0.001	0.0024	<0.001	0.0034	<0.005	3.3					0.24
BSDD005 16.3 18	BSDD005		tg	DD	Waste	Jinkas	pw	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	0.002	<0.001	0.034	<0.005	3.4	0.021	0.2	0.01	0.21	0.019
BSDD005 33.8 34	BSDD005		tg	DD	Waste	Jinkas	pw	<0.001	<0.0005	<0.001	0.0081	<0.01	<0.001	0.0017	0.0023	0.94	<0.005	9.2	2.2	0.012	<0.005	0.015	<0.01
BSDD041 14 15.98	BSDD041	ls	tg	DD	Waste	Jinkas	sw	<0.001	0.001	0.0018	0.12	0.032	<0.001	0.029	0.0068	0.15	0.013	78	0.057	0.53	0.11	0.64	0.67
BSRC0676 10 12	BSRC0676	lsa	tg	RC pulp	Waste	Jinkas	cw	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	<0.001	<0.001	0.0071	<0.005	11					0.017
BSDD008 44.7 46	BSDD008		tb	DD	Waste	Dingo	fr	<0.001	<0.0005	<0.001	<0.002	<0.01	0.0012	0.0044	<0.001	0.0035	<0.005	3.8	0.017	0.12	0.011	0.13	0.042
BSDD018 138 140	BSDD018		tb	DD	Waste	Jinkas	fr	<0.001	<0.0005	<0.001	0.33	<0.01	<0.001	0.11	0.0031	0.027	<0.005	28	<0.05	<0.05	<0.05	<0.05	0.36
BSDD036 54 56	BSDD036		tb	DD	Waste	Jinkas	fr	<0.001	<0.0005	<0.001	0.011	0.21	<0.001	0.0055	<0.001	0.0059	<0.005	4.9	0.0082	0.022	0.0099	0.032	0.11
BSDD005 105 105.5	BSDD005		tb	DD	Waste	Jinkas	fr ¹	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	0.0014	<0.001	0.0024	<0.005	3.7	0.011	0.13	<0.005	0.13	0.22
BSDD033 50 52	BSDD033		tb	DD	Waste	Dingo	vw	<0.001	<0.0005	<0.001	0.0059	<0.01	<0.001	0.0018	<0.001	0.0049	<0.005	2.6	0.046	0.014	<0.005	0.018	0.021
BSRC1181 43 45	BSRC1181		tb	RC pulp	Waste	Jinkas	vw	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	<0.001	<0.001	0.0062	<0.005	16					0.014
BSDD016 128 130	BSDD016		tm	DD	Waste	Jinkas	fr	<0.001	<0.0005	<0.001	0.002	<0.01	<0.001	<0.001	<0.001	0.004	<0.005		0.19	0.028	0.011	0.039	<0.01
BSDD033 70 72	BSDD033		tm	DD	Waste	Dingo	fr	<0.001	<0.0005	<0.001	0.0098	<0.01	<0.001	0.011	<0.001	0.013	<0.005	10	0.01	0.0056	<0.005	0.0089	0.074
BSRC0233 69 71	BSRC0233		tm	RC pulp	Waste	Jackson	fr	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	<0.001	0.013	0.75	<0.005	14					<0.01
BSDD006 87 89	BSDD006		tm	DD	Waste	Jinkas	fr ¹	<0.001	<0.0005	<0.001	<0.002	<0.01	0.0014	0.011	<0.001	0.0042	<0.005	5.4	0.026	0.26	0.0055	0.27	0.032
BSDD044 28.31 29	BSDD044	ls	tm	DD	Waste	Dingo	mw	<0.001	<0.0005	<0.001	0.091	<0.01	<0.001	0.036	0.016	0.063	<0.005	460	NT	NT	NT	NT	NT
BSDD033 22 24	BSDD033	usa	cy	DD	Waste	Dingo	sw	<0.001	0.0005	<0.001	<0.002	<0.01	<0.001	0.0018	<0.001	0.03	<0.005	9.5	<0.005	0.026	<0.005	0.03	0.015
BSDD048 23 25	BSDD048	lsa	cy	DD	Waste	Jackson	sw	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	0.001	<0.001	0.0049	<0.005	17	1.1	0.21	0.0094	0.22	0.039
BSDD002 31 33	BSDD002	lsa	cy	DD	Waste	Jinkas	cw	<0.001	<0.0005	<0.001	0.02	0.033	<0.001	0.0062	<0.001	0.006	<0.005	36	0.15	1.3	<0.05	1.4	0.82
BSDD002 40 42	BSDD002	lsa	cy	DD	Waste	Jinkas	cw	<0.001	<0.0005	<0.001	0.0041	<0.01	<0.001	0.0012	<0.001	0.12	<0.005	17	0.53	5.6	0.37	6	0.12
BSDD035 45 47	BSDD035	lsa	cy	DD	Waste	Dingo	cw	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	17	NT	NT	NT	NT	NT
BSDD036 11.17 13	BSDD036		cy	DD	Waste	Jinkas	cw	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	<0.001	<0.001	0.055	<0.005	6.1	0.49	0.31	<0.005	0.31	0.017
BSRC0130 69 71	BSRC0130		gm	RC pulp	Waste	Jackson	fr	<0.001	<0.0005	<0.001	<0.002	<0.01	0.0016	<0.001	0.025	1.2	<0.005	14	0.15	0.11	<0.005	0.11	<0.01
BSRC0234 56 58	BSRC0234		gm	RC pulp	Waste	Jackson	fr	<0.001	<0.0005	<0.001	<0.002	<0.01	0.0018	<0.001	<0.001	0.002	<0.005	5					0.2
BSDD037 50 52	BSDD037	ls	gm	DD	Waste	Jinkas	vw	<0.001	0.0032	<0.001	0.064	<0.01	<0.001	0.016	<0.001	0.013	0.0072	8.6	0.029	<0.005	<0.005	0.0079	0.3
BSRC1286 11 13	BSRC1286	ls	gm	RC pulp	Waste	Jackson	pw	<0.001	<0.0005	<0.001	<0.002	0.015	<0.001	0.0012	<0.001	0.0019	<0.005	4.2					0.056
BSRC1355 4 6	BSRC1355	ls	gm	RC pulp	Waste	Olympia	pw	<0.001	<0.0005	<0.001	0.044	<0.01	<0.001	0.0024	<0.001	0.0057	<0.005	18					0.089
BSRC1279 22 24	BSRC1279	ls	gm	RC pulp	Waste	Jinkas	mw	<0.001	<0.0005	<0.001	<0.002	0.028	<0.001	0.0048	<0.001	0.0015	<0.005	5.1					0.63
BSDD048 57 59	BSDD048		ti	DD	Waste	Jackson	fr	<0.001	<0.0005	<0.001	<0.002	<0.01	0.0016	<0.001	0.0054	0.62	<0.005	11	0.25	<0.005	<0.005	<0.005	<0.01
BSDD001 109 111	BSDD001		ti	DD	Waste	Jinkas	fr ¹	<0.001	<0.0005	<0.001	<0.002	<0.01	0.0011	0.0033	<0.001	0.0085	<0.005	4.5	0.027	0.36	0.0099	0.37	0.062
BSDD004 76 78	BSDD004		ti	DD	Waste	Jinkas	fr ¹	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	0.0082	<0.001	0.0026	<0.005	5.7	0.23	0.27	0.0054	0.27	0.032
BSDD035 48 49.74	BSDD035		ti	DD	Waste	Dingo	pw	<0.001	0.00088	<0.001	0.0045	0.12	<0.001	0.0039	<0.001	0.0062	<0.005	62	0.054	0.054	<0.05	0.088	0.25
BSRC0187 63 64	BSRC0187		xx	RC pulp	Waste	Dingo	fr	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS	INS					NT
BSDD002 54 55.6	BSDD002		xx	DD	Waste	Jinkas	fr ¹	<0.001	<0.0005	<0.001	0.0094	0.1	<0.001	0.014	<0.001	0.004	<0.005	12	0.039	0.27	0.0065	0.28	0.017
BSDD022 18 18.5	BSDD022		md	DD	Waste	Jinkas	vw	<0.001	0.00065	<0.001	0.13	<0.01	<0.001	0.11	0.0032	0.089	<0.005		0.031	<0.05	<0.05	<0.05	1.6
BSDD022 4.4 4.8	BSDD022		md	DD	Waste	Jinkas	mw	<0.001	<0.0005	<0.001	0.045	0.046	<0.001	0.016	<0.001	0.005	<0.005	7.4	0.053	0.07	0.013	0.084	0.11
BSDD022 8 8.5	BSDD022		md	DD	Waste	Jinkas	mw	<0.001	<0.0005	<0.001	0.33	<0.01	<0.001	0.092	0.0028	0.028	<0.005	29	0.02	<0.05	<0.05	<0.05	0.31
BSDD032 150 152	BSDD032		ts	DD	Waste	Jinkas	fr	<0.001	<0.0005	<0.001	0.0093	<0.01	<0.001	0.0096	<0.001	0.0095	<0.005	4.9	0.0055	0.076	<0.005	0.08	0.13
BSDD047 30.82 32.89	BSDD047	ls	ts	DD	Waste	Jackson	mw	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	<0.001	<0.001	0.0039	<0.005	9.9	0.64	0.029	<0.005	0.033	0.097
BSDD016 41 43.5	BSDD016		tbg	DD	Waste	Jinkas	fr	0.0022	0.0011	<0.001	0.0028	<0.01	<0.001	0.026	<0.001	0.011	<0.005	8.3	0.036	0.4	0.011	0.41	0.034
BSDD006 139 141	BSDD006		tbg	DD	Waste	Jinkas	fr ¹	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	0.0023	<0.001	0.0038	<0.005	4.1	0.011	0.32	<0.005	0.33	0.052
BSDD006 96 98	BSDD006		tbg	DD	Waste	Jinkas	fr ¹	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	0.0049	<0.001	0.0039	<0.005	3.7	0.023	0.42	0.0083	0.43	0.066
BSDD034 0.8 1.5	BSDD034		zl	DD	Waste	Dingo	cw	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	<0.001	<0.001	0.11	<0.005	2.5	0.32	1.9	<0.005	1.9	<0.01
BSDD035 1.5 3	BSDD035		zl	DD	Waste	Dingo	cw	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	<0.001	<0.001	0.26	<0.005	11	0.24	0.034	<0.005	0.036	0.011
BSDD048 0 0.28	BSDD048	sl	zs	DD	Waste	Jackson	sw	<0.001	0.00082	<0.001	0.039	<0.01	<0.001	0.016	0.0029	0.0051	<0.005	37	0.37	0.65	0.12	0.77	0.09
BSRC1018 5 7	BSRC1018		zx	RC pulp	Waste	Jinkas	pw	<0.001	<0.0005	<0.001	<0.002	<0.01	<0.001	<0.001	<0.001	0.022	<0.005	12					<0.02
BSDD038 0 1	BSDD038	sl	zx	DD	Waste	Jinkas	cw	<0.001	0.0011	<0.001	0.017	<0.01	<0.001	0.033	0.0054	0.024	0.01	52	0.24	<0.05	<0.05	<0.05	0.23
BSDD041 1 2	BSDD041	ls	gg	DD	Waste	Jinkas	sw	<0.001	0.00068	0.0017	0.098	0.075	<0.001	0.04	0.0042	0.062	<0.005	100	0.064	<0.05	<0.05	0.072	0.43
BS																							

Appendix G - 1:3 MEND Leach (0.2 µm filtered) Metals Results

SRK sample ID	Hole ID	REG_GROUP	ROCK_TYP E_1	DH type	Grade	Pit Name	Units	mg/L	mg/L	mg/L	mg/L
							LOD	0.005	0.1	0.02	0.02
							Weathering	PO ₄ as P	Total N	NO ₃ as NO ₃ calc	NO ₂ as NO ₂ calc
BSDD016 57 59.85	BSDD016		tg	DD	Waste	Jinkas	fr	0.067	1.7	2.3	0.027
BSDD027 106.52 108.7	BSDD027		tg	DD	Waste	Jinkas	fr	0.06	1.1	0.22	<0.02
BSRC0955 44 48	BSRC0955		tg	RC pulp	Waste	Olympia	fr		0.33		
BSDD005 16.3 18	BSDD005		tg	DD	Waste	Jinkas	pw	<0.005	0.76	0.87	0.033
BSDD005 33.8 34	BSDD005		tg	DD	Waste	Jinkas	pw	<0.005	3.5	0.054	<0.02
BSDD041 14 15.98	BSDD041	ls	tg	DD	Waste	Jinkas	sw	0.81	3.4	2.4	0.35
BSRC0676 10 12	BSRC0676	lsa	tg	RC pulp	Waste	Jinkas	cw		0.22		
BSDD008 44.7 46	BSDD008		tb	DD	Waste	Dingo	fr	0.032	0.71	0.54	0.035
BSDD018 138 140	BSDD018		tb	DD	Waste	Jinkas	fr	0.48	0.4	<0.2	<0.2
BSDD036 54 56	BSDD036		tb	DD	Waste	Jinkas	fr	0.078	0.52	0.099	0.032
BSDD005 105 105.5	BSDD005		tb	DD	Waste	Jinkas	fr ¹	0.015	0.46	0.58	<0.02
BSDD033 50 52	BSDD033		tb	DD	Waste	Dingo	ww	<0.005	0.81	0.064	<0.02
BSRC1181 43 45	BSRC1181		tb	RC pulp	Waste	Jinkas	ww		0.46		
BSDD016 128 130	BSDD016		tm	DD	Waste	Jinkas	fr	<0.005	1.6	0.13	0.036
BSDD033 70 72	BSDD033		tm	DD	Waste	Dingo	fr	0.034	0.34	0.025	<0.02
BSRC0233 69 71	BSRC0233		tm	RC pulp	Waste	Jackson	fr		1.3		
BSDD006 87 89	BSDD006		tm	DD	Waste	Jinkas	fr ¹	0.028	0.53	1.2	<0.02
BSDD044 28.31 29	BSDD044	ls	tm	DD	Waste	Dingo	mw	NT	NT	NT	NT
BSDD033 22 24	BSDD033	usa	cy	DD	Waste	Dingo	sw	0.0063	0.74	0.12	<0.02
BSDD048 23 25	BSDD048	lsa	cy	DD	Waste	Jackson	sw	<0.005		0.92	0.031
BSDD002 31 33	BSDD002	lsa	cy	DD	Waste	Jinkas	cw	0.95	2.7	5.9	<0.2
BSDD002 40 42	BSDD002	lsa	cy	DD	Waste	Jinkas	cw	0.078	7.3	25	1.2
BSDD035 45 47	BSDD035	lsa	cy	DD	Waste	Dingo	cw	NT	3	NT	NT
BSDD036 11.17 13	BSDD036		cy	DD	Waste	Jinkas	cw	<0.005	1.8	1.4	<0.02
BSRC0130 69 71	BSRC0130		gm	RC pulp	Waste	Jackson	fr	<0.005	0.35	0.48	<0.02
BSRC0234 56 58	BSRC0234		gm	RC pulp	Waste	Jackson	fr		0.36		
BSDD037 50 52	BSDD037	ls	gm	DD	Waste	Jinkas	ww	0.16	0.56	<0.02	<0.02
BSRC1286 11 13	BSRC1286	ls	gm	RC pulp	Waste	Jackson	pw		0.18		
BSRC1355 4 6	BSRC1355	ls	gm	RC pulp	Waste	Olympia	pw		0.5		
BSRC1279 22 24	BSRC1279	ls	gm	RC pulp	Waste	Jinkas	mw		0.65		
BSDD048 57 59	BSDD048		ti	DD	Waste	Jackson	fr	<0.005	1.3	<0.02	<0.02
BSDD001 109 111	BSDD001		ti	DD	Waste	Jinkas	fr ¹	0.03	1.4	1.6	0.033
BSDD004 76 78	BSDD004		ti	DD	Waste	Jinkas	fr ¹	0.02	0.82	1.2	<0.02
BSDD035 48 49.74	BSDD035		ti	DD	Waste	Dingo	pw	0.28	1.7	0.24	<0.2
BSRC0187 63 64	BSRC0187		xx	RC pulp	Waste	Dingo	fr		NT		
BSDD002 54 55.6	BSDD002		xx	DD	Waste	Jinkas	fr ¹	<0.005	0.88	1.2	0.021
BSDD022 18 18.5	BSDD022		md	DD	Waste	Jinkas	ww	2.4	0.64	<0.2	<0.2
BSDD022 4.4 4.8	BSDD022		md	DD	Waste	Jinkas	mw	0.11	0.61	0.31	0.044
BSDD022 8 8.5	BSDD022		md	DD	Waste	Jinkas	mw	0.42	0.42	<0.2	<0.2
BSDD032 150 152	BSDD032		ts	DD	Waste	Jinkas	fr	0.022	0.49	0.34	<0.02
BSDD047 30.82 32.89	BSDD047	ls	ts	DD	Waste	Jackson	mw	0.0099	1.8	0.13	<0.02
BSDD016 41 43.5	BSDD016		tbg	DD	Waste	Jinkas	fr	0.017	1.8	1.8	0.035
BSDD006 139 141	BSDD006		tbg	DD	Waste	Jinkas	fr ¹	0.041	0.5	1.4	<0.02
BSDD006 96 98	BSDD006		tbg	DD	Waste	Jinkas	fr ¹	0.036	0.75	1.9	0.027
BSDD034 0.8 1.5	BSDD034		zl	DD	Waste	Dingo	cw	<0.005	3.2	8.2	<0.02
BSDD035 1.5 3	BSDD035		zl	DD	Waste	Dingo	cw	<0.005	1.2	0.15	<0.02
BSDD048 0 0.28	BSDD048	sl	zs	DD	Waste	Jackson	sw	0.057	4	2.9	0.4
BSRC1018 5 7	BSRC1018		zx	RC pulp	Waste	Jinkas	pw		2.9		
BSDD038 0 1	BSDD038	sl	zx	DD	Waste	Jinkas	cw	0.13	3.5	<0.2	<0.2
BSDD041 1 2	BSDD041	ls	gg	DD	Waste	Jinkas	sw	0.65	1.3	0.21	<0.2
BSDD009 89 89.5 ore	BSDD009		tm	DD	Ore	Dingo	fr		0.26		
BSDD008 51.73 52.73 ore	BSDD008		tm	DD	Ore	Dingo	fr ¹		0.23		
BSDD047 27.69 28.47 ore	BSDD047	ls	tm	DD	Ore	Jackson	mw		0.77		
BSDD048 25.4 26.05 ore	BSDD048	lsa	cy	DD	Ore	Jackson	sw		0.52		
BSDD041 2.46 4.8 ore	BSDD041	usa	cy	DD	Ore	Jinkas	cw		<0.1		
BSDD048 51.81 52.37 ore	BSDD048		ti	DD	Ore	Jackson	fr		0.51		
BSDD005 59 59.5 ore	BSDD005		ti	DD	Ore	Jinkas	fr ¹		1.3		
BSDD031 66.87 67.87 ore	BSDD031		tbg	DD	Ore	Jinkas	fr		0.36		
BSDD047 36.12 36.62 ore	BSDD047	ls	tf	DD	Ore	Jackson	mw		0.52		

Notes: NT - not tested; INS - insufficient sample

1. Not originally logged instead estimated based on leapfrog model

Appendix G - Leach summary statistics

Grade				Waste																																		
Lithology Code				tb				tbg				tg				ti				tm				ts				md				gg		gm				xx
Lithology				Biotite (dominant) quartz granulite (gneiss)				Biotite Garnet Gneiss				Garnet (dominant) quartz granulite (gneiss)				Intermediate granulite (gneiss)				Mafic granulite (gneiss)				Speckled mafic granulite (gneiss)				Dolerite				Granite		Monzogranite				Calc-silicate rock n = 1
Sample count				n = 6				n = 3				n = 7				n = 4				n = 5				n = 2				n = 3				n = 1		n = 6				n = 1
Parameter	Units	LOD		Min	Median	Average	Max	Min	Median	Average	Max	Min	Median	Average	Max	Min	Median	Average	Max	Min	Median	Average	Max	Min	Median	Average	Max	Min	Median	Average	Max	Min	Median	Average	Max	-		
pH ¹	pH units			7.0	8.2	7.6	8.9	8.2	8.3	8.3	8.3	4.2	8.1	5.0	8.7	4.4	7.8	5.0	8.2	4.7	8.1	5.3	8.5	8.2	8.6	8.5	9.0	8.1	8.3	8.3	9.0	8.7	4.2	8.3	5.0	8.9	9.3	
EC	µS/cm	2		150	285	395	1,100	160	170	187	230	160	270	623	2,500	180	265	425	990	130	260	813	2,600	100	550	550	1,000	220	360	317	370	88	170	400	743	2,400	200	
HCO ₃	mg/L	5		26	45	51	99	48	49	50	54	<5	52	45	100	<5	40	36	58	6.6	42	37	59	34	67	67	100	68	82	81	92	53	<5	56	56	120	33	
CO ₃	mg/L	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	7.1	20	<5	<5	<5	<5	<5	<5	<5	5.6	5.6	6.2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		
OH	mg/L	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		
Total Alk	mg/L	5		26	45	51	99	48	49	50	54	<5	52	48	120	<5	40	36	58	6.6	42	37	59	34	72	72	110	68	82	81	92	53	<5	56	56	120	33	
Acidity	mg/L	5		<5	<5	5.02	5.1	<5	<5	<5	<5	<5	<5	<5	7.7	23	<5	5.1	41	150	<5	<5	11	29	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	53	290	<5	
Ca	mg/L	0.5		<0.5	4.1	4.6	10	2.4	5.1	4.7	7	0.9	3.2	6.1	17	1.7	8.7	10.3	22	0.5	5.8	63.0	240	6.0	10.5	10.5	15	0.9	1.4	1.6	3	1.4	<0.5	3.7	51.6	240	16.0	
Mg	mg/L	0.5		0.52	2.3	3.4	11	1.4	1.8	1.8	2	1.0	3.8	7.3	23	1.2	7.2	10.4	26	2.2	6.7	51.4	190	0.8	10.9	10.9	21	1.4	3.4	6.9	16	5.4	<0.5	1.8	22.5	110	0.8	
K	mg/L	0.5		2.3	6	6.7	12.0	3.4	7	5.9	7.3	<2.5	6	8.2	23.0	1.3	4	8.3	23.0	0.9	4	7.3	20.0	0.9	3	2.7	4.5	1.2	3	2.4	3.5	1.4	1.6	4	8.1	22.0	2.3	
Na	mg/L	0.5		8.0	26	52	8	9.3	12	15	9	5.5	26	83	6	8.5	12	21	9	8.4	17	32	8	6.4	78	78	6	40.0	53	55	40	16.0	5.0	43	39	5	10.0	
Cl	mg/L	1		5.3	8	58	310	6.9	12	11	14	3.5	20	123	720	4.0	9.7	23	68	2.9	4.9	24	9.5	5.3	33	33	61	4.6	5.4	6.1	8.2	3.6	14	26	32	65	7.4	
SO ₄	mg/L	1		10	26	34	77	6.5	7.9	10	17	4.7	37	66	220	11	17	131	480	3.9	19.0	361	1,700	2.5	126	126	250	31	69	58	74	3.3	9	35	297	1,400	44	
F	mg/L	0.1		0.23	0.29	0.61	1.4	0.2	0.21	0.27	0.39	0.2	0.31	1.02	5	0.2	0.33	0.47	1	0.2	0.2	0.24	0.37	0.2	0.46	0.46	0.72	0.62	1.1	1.5	2.7	0.48	0.21	0.99	1.02	2.2	0.2	
Al	mg/L	0.01		<0.01	0.14	0.85	4.5	0.093	0.15	0.14	0.17	<0.01	0.11	1.98	11	0.072	0.13	0.58	2	0.042	0.71	2.04	8.6	<0.01	0.23	0.23	0.45	0.22	4.2	4.8	10	4.8	0.025	0.25	1.5	6.4	0.18	
Sb	mg/L	0.001		<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0011	0.0014	<0.001	<0.001	0.0011	0.0014	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0024		
As	mg/L	0.001		<0.001	0.0011	0.0033	0.0079	0.0012	0.0026	0.0066	0.016	<0.001	0.0011	0.0021	0.0058	<0.001	0.0027	0.0031	0.0058	<0.001	<0.001	0.0019	0.0057	<0.001	0.0012	0.0013	0.0015	0.0022	0.0036	0.0073	0.016	0.039	<0.001	<0.001	0.0011	0.0018	0.018	
Ba	mg/L	0.001		0.0021	0.0057	0.025	0.075	0.0027	0.0044	0.0047	0.0069	0.0053	0.0068	0.021	0.078	<0.001	0.0029	0.017	0.062	0.0015	0.011	0.0091	0.015	0.001	0.0015	0.0015	0.0019	0.032	0.055	0.053	0.073	0.14	0.0023	0.022	0.027	0.073	0.0025	
Be	mg/L	0.0005		<0.0005	<0.0005	0.0005	0.00054	<0.0005	<0.0005	0.0014	0.0033	<0.0005	<0.0005	0.0012	0.0052	<0.0005	0.00033	0.0009	0.0019	<0.0005	0.00064	0.0009	0.0018	0.00062	0.00069	0.0007	0.00076	<0.0005	0.00087	0.00092	0.0014	<0.0005	<0.0005	0.0008	0.0019	0.00054		
Bi	mg/L	0.001		<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	0.0015	0.0024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Bd	mg/L	0.02		<0.02	0.042	0.045	0.068	<0.02	0.022	0.023	0.028	<0.02	0.033	0.064	0.17	0.023	0.033	0.046	0.094	<0.02	0.034	0.043	0.092	0.055	0.055	0.055	0.055	0.09	0.09	0.097	0.11	0.078	<0.02	0.03	0.033	0.055	0.036	
C	mg/L	0.0001		<0.0001	0.00015	0.00021	0.00058	0.00014	0.00026	0.0011	0.0028	<0.0001	0.00024	0.0004	0.0014	0.00016	0.00043	0.001	0.0028	0.00039	0.00086	0.00089	0.0016	0.00052	0.00059	0.00059	0.00066	0.00016	0.00034	0.00037	0.0006	0.00049	<0.0001	<0.0001	0.00051	0.0018	0.0005	
Cs	mg/L	0.001		<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	0.0018	0.0034	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0011	0.0015	<0.001	<0.001	0.0011	0.0013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Ce	mg/L	0.001		<0.001	<0.001	<0.0014	0.0035	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0028	0.012	<0.001	<0.001	0.002	0.005	<0.001	<0.001	0.005	0.013	<0.001	<0.001	<0.001	<0.001	<0.001	0.0032	0.0046	0.0096	0.014	<0.001	0.0032	0.0074	0.03	<0.001	
Cr	mg/L	0.001		<0.001	<0.001	0.0017	0.005	<0.001	<0.001	0.0019	0.0037	<0.001	<0.001	0.005	0.028	<0.001	<0.001	0.0011	0.0013	<0.001	0.0018	0.007	0.028	0.0014	0.0016	0.0016	0.0018	<0.001	0.0051	0.012	0.03	0.016	<0.001	0.0013	0.0019	0.0048	0.0012	
Co	mg/L	0.001		<0.001	0.001	0.0046	0.018	<0.001	<0.001	0.0018	0.0033	<0.001	<0.001	0.054	0.33	<0.001	<0.001	0.21	0.83	<0.001	0.0024	0.13	0.64	<0.001	0.001	0.0011	0.0011	<0.001	0.017	0.024	0.055	0.016	<0.001	<0.001	0.071	0.42	<0.001	
Cu	mg/L	0.001		<0.001	0.0024	0.0056	0.023	0.0022	0.0023	0.0035	0.006	<0.001	0.0027	0.15	0.72	0.0028	0.005	0.098	0.38	0.0021	0.0038	0.014	0.037	0.0018	0.0027	0.0027	0.0035	0.0024	0.012	0.012	0.022	0.16	<0.001	0.0028	0.0074	0.03	0.006	
Ga	mg/L	0.001		<0.001	<0.001	0.0015	0.0036	0.0013	0.0015	0.0019	0.003	<0.001	<0.001	0.0015	0.0043	<0.001	<0.001	0.0011	0.0014	<0.001	<0.001	0.0019	0.0033	<0.001	0.0012	0.0013	0.0015	<0.001	0.0034	0.0034	0.0058	0.0034	<0.001	0.0011	0.0015	0.0028	<0.001	
Ge	mg/L	0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Hf	mg/L	0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
In	mg/L	0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Fe	mg/L	0.01		<0.01	0.13	1.5	8.7	0.025	0.04	0.041	0.057	<0.01	0.071	3	20	0.017	0.042	3.5	14	0.02	0.79	3.9	15	0.025	0.18	0.18	0.33	0.21	8.2	8.8	18	10	<0.01	0.655	11	63	0.36	
La	mg/L	0.0005		<0.0005	<0.0005	0.0008	0.0021	<0.0005	<0.0005	0.0016	0.0038	<0.0005	<0.0005	0.0013	0.005	<0.0005	0.00035	0.0013	0.0037	<0.0005	0.0011	0.0025	0.007	0.00062	0.00073	0.00073	0.00083	<0.0005	0.0022	0.0019	0.0029	0.0049						

Notes: Blue shading indicates values that exceed the ANZECC 95% SLP threshold; bold indicates values that exceed the Livestock drinking water threshold; Statistics have been calculated using LOD value.

1. Hydrogen ion concentrations were calculated to assist with the preparation of summary statistics involving pH measurements.
2. pH values outside of the indicated range are considered exceedances of trigger values.
3. Unknown or low reliability guideline value (ANZECC and ARMICANZ, 2000).
4. Based on SLP grading values of nitrogen following NIWA (2013) and ANZECC and ARMICANZ (2000).

Appendix G - Leach summary

Grade		Ore																				ANZECC										
Lithology Code		cy				zl				zs	zx				tbg	tf	ti				tm				cy				Species limit of protection (95% SLP)	Livestock drinking water		
Lithology		Clay				Lateritic duricrust				Soil	Exotic overburden (roadbase) dump material				Biotite Garnet Gneiss	Felsic granulite (gneiss)	Intermediate granulite (gneiss)				Mafic granulite (gneiss)				Clay							
Sample count		n = 6				n = 2				n = 1	n = 2				n = 1	n = 1	n = 2				n = 3				n = 2							
Parameter	Units	LOD	Min	Median	Average	Max	Min	Median	Average	Max	-	Min	Median	Average	Max	-	-	Min	Median	Average	Max	Min	Median	Average	Max	Min	Median	Average	Max			
pH	pH units		4.4	6.4	5.1	7.3	5.1	5.4	5.3	5.7	7.1	6.1	6.6	6.4	7.1	8.1	6.3	7.0	7.3	7.2	7.5	2.5	8.0	3.0	8.4	6.9	7.1	7.1	7.3	6.5 – 8.5 ¹	6.5 – 8.5 ¹	
EC	µS/cm	2	880	1,100	2,396	5,200	380	940	940	1,500	1,000	220	760	760	1,300	88	610	290	350	350	410	270	270	3,013	8,500	450	1,075	1,075	1,700			
HCO ₃	mg/L	5	<5	6.2	10	22	5	5.7	6	6.3	26	13	40	40	67	23	9.5	11	20	20	28	<5	45	34	53	9	39	39	69			
CO ₃	mg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5			
OH	mg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5			
Total Alk	mg/L	5	<5	6.2	10	22	5	5.7	6	6.3	26	13	40	40	67	23	9.5	11	20	20	28	<5	45	34	53	9	39	39	69			
Acidity	mg/L	5	5.6	6.1	6.9	9.8	6.4	7.2	7.2	8	<5	6.4	8.2	8.2	10	5.4	9.3	5.1	6	6	6.8	<5	<5	1,803	5,400	5.8	9.9	10	14			
Ca	mg/L	0.5	<0.5	1.1	4.4	17	<0.5	0.4	0.6	1	6.3	1.9	4.9	4.9	8	0.8	27	17	23	23	29	32	35	149	380	1	2.7	2.7	4		1000	
Mg	mg/L	0.5	1.3	5.0	21.4	74	4.2	4.4	4.4	5	12.0	2.4	6.7	6.7	11	1.2	36	4.5	10	10	16	4.1	5.4	49.8	140	3.3	13	13	23		500	
K	mg/L	0.5	2.0	5	7.3	18.0	0.9	1	1.2	1.5	3.3	1.7	4	3.6	5.5	8.2	9.3	6.3	7	6.9	7.5	0.5	2	2.0	3.0	2	3	2.9	3.7			
Na	mg/L	0.5	150.0	185	353	150	43.0	137	137	43	150.0	34.0	117	117	34	7.7	39	9.5	11	11	10	3.5	5	8	4	78	149	149	78			
Cl	mg/L	1	160	285	495	1,400	97	209	209	320	260	22	176	176	330	2.6	5.7	9.1	10	10	11	3.0	4.9	5.4	8.2	24	232	232	440			
SO ₄	mg/L	1	21	86	253	920	3.5	77	77	150	41	13	28	28	42	11	350	80	105	105	130	30	53	2,861	8,500	88	99	99	110		500	
F	mg/L	0.1	0.2	0.23	0.48	1.2	0.2	0.2	0.2	0.2	0.45	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.27	0.27	0.34	0.2	0.2	0.2	0.35	0.48	0.48	0.6		2		
Al	mg/L	0.01	<0.01	0.024	0.081	0.29	<0.01	<0.01	<0.01	<0.01	0.55	<0.01	2.8	2.8	5.5	0.33	0.28	0.026	0.041	0.041	0.055	0.011	0.8	60	180	0.03	0.2	0.2	0.36	0.055 ¹	5	
Sb	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.009 ¹		
As	mg/L	0.001	<0.001	<0.001	0.0011	0.0014	<0.001	<0.001	<0.001	<0.001	<0.0012	<0.001	0.0023	0.0023	0.0036	<0.001	<0.001	<0.001	0.0011	0.0012	0.0013	<0.001	<0.001	0.0043	0.011	<0.001	<0.001	<0.001	<0.001	0.013	0.025	
Ba	mg/L	0.001	0.0026	0.0045	0.007	0.014	0.0072	0.016	0.016	0.025	0.079	0.073	0.097	0.097	0.12	0.0056	0.025	0.022	0.034	0.034	0.046	<0.001	0.0038	0.0047	0.0092	0.0017	0.014	0.014	0.026			
Be	mg/L	0.0005	<0.0005	<0.0005	0.0006	0.001	<0.0005	<0.0005	<0.0005	<0.0005	0.00053	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.004	0.011	<0.0005	<0.0005	<0.0005	<0.0005		0.06	
Bi	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0018	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
B	mg/L	0.02	0.075	0.11	0.14	0.24	0.064	0.11	0.11	0.16	0.22	0.16	0.24	0.24	0.31	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.026	0.029	0.042	0.053	0.21	0.21	0.36	0.94	5	
Cd	mg/L	0.0001	0.00019	0.00036	0.00044	0.00089	0.00026	0.0003	0.0003	0.00033	0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	0.00012	0.00034	0.00034	0.00056	<0.0001	<0.0001	0.0044	0.013	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	0.01	
Cs	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
Ce	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0099	0.0012	0.014	0.014	0.026	<0.001	0.0048	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0038	0.23	0.7	<0.001	0.0027	0.0027	0.0044		
Cr	mg/L	0.001	<0.001	0.0015	0.002	0.0036	<0.001	<0.001	<0.001	<0.001	0.0017	<0.001	0.008	0.008	0.015	<0.001	0.0011	<0.001	<0.001	<0.001	<0.001	<0.001	0.0048	0.3	0.88	<0.001	0.0013	0.0014	0.0017	0.001	0.05	
Co	mg/L	0.001	<0.001	0.0016	0.003	0.0096	<0.001	0.0014	0.0014	0.0018	0.0013	0.002	0.0023	0.0023	0.0025	<0.001	0.12	0.0095	0.04125	0.041	0.073	<0.001	0.0042	0.22	0.65	<0.001	0.0012	0.0012	0.0014	0.0014	0.0014 ¹	1
Cu	mg/L	0.001	0.0018	0.0032	0.0053	0.015	0.0018	0.0032	0.0032	0.0045	0.017	<0.001	0.017	0.017	0.033	<0.001	0.048	0.0046	0.0069	0.0069	0.0091	<0.001	0.23	15	44	0.0047	0.0094	0.0094	0.014	0.0014	1	
Ga	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0017	0.0017	0.0024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.017	0.049	<0.001	<0.001	<0.001	<0.001			
Ge	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0013	0.0013	0.0016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0028	0.0064	<0.001	<0.001	<0.001	<0.001			
Hf	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0012	0.0015	<0.001	<0.001	<0.001	<0.001			
In	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001										

Appendix H Acid base characterisation curve results

Appendix H - ABCC results

SRK ID		BSDD001_58.82_59.59	
MRL ID		PFL0924-02	
LITH		tb	
Sample Date		16/05/2025	
ANC		10	
Weathering		fr	
HCl Molarity		0.1	
mL Increments		0.2	
Weight (g)		2	
ANC to pH 7		1	
ANC to pH 6		1	
ANC to pH 4.5		4	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	9.52
1	0.2	0.49	7.51
2	0.4	0.98	6.46
3	0.6	1.47	5.97
4	0.8	1.96	5.56
5	1	2.45	5.35
6	1.2	2.94	5.09
7	1.4	3.43	4.82
8	1.6	3.92	4.57
9	1.8	4.41	4.33
10	2	4.9	4.11
11	2.2	5.39	3.87
12	2.4	5.88	3.69
13	2.6	6.37	3.54
14	2.8	6.86	3.44
15	3	7.35	3.35
16	3.2	7.84	3.27
17	3.4	8.33	3.18
18	3.6	8.82	3.72
19	3.8	9.31	3.45
20	4	9.8	3.28
21	4.2	10.29	3.16
22	4.4	10.78	3.06
23	4.6	11.27	2.99
24	4.8	11.76	2.93
25	5	12.25	2.87
26	5.2	12.74	2.81
27	5.4	13.23	2.77
28	5.6	13.72	2.73
29	5.8	14.21	2.69
30	6	14.7	2.65
31	6.2	15.19	2.61
32	6.4	15.68	2.58
33	6.6	16.17	2.54
34	6.8	16.66	2.52
35	7	17.15	2.49

SRK ID		BSDD001_96_98	
MRL ID		PFL0924-03	
LITH		tg	
Sample Date		21/05/2025	
ANC		400	
Weathering		fr	
HCl Molarity		0.5	
mL Increments		1	
Weight (g)		2	
ANC to pH 7		25	
ANC to pH 6		193	
ANC to pH 4.5		228	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	9.98
1	1	12.25	7.34
2	2	24.5	7
3	3	36.75	6.84
4	4	49	6.74
5	5	61.25	6.69
6	6	73.5	6.64
7	7	85.75	6.6
8	8	98	6.57
9	9	110.25	6.49
10	10	122.5	6.48
11	11	134.75	6.42
12	12	147	6.4
13	13	159.25	6.33
14	14	171.5	6.2
15	15	183.75	6.05
16	16	196	5.98
17	17	208.25	5.76
18	18	220.5	5.15
19	19	232.75	4.02
20	20	245	2.79
21	21	257.25	2.59
22	22	269.5	2.27

SRK ID		BSDD002_54_55.6	
MRL ID		PFL0924-10	
LITH		xx	
Sample Date		16/05/2025	
ANC		230	
Weathering		fr	
HCl Molarity		0.5	
mL Increments		0.4	
Weight (g)		2	
ANC to pH 7		26	
ANC to pH 6		63	
ANC to pH 4.5		77	
Addition	mLs added (total)	kg H ₂ SO ₄	pH
0	0	0	9.9
1	0.4	4.9	7.99
2	0.8	9.8	7.51
3	1.2	14.7	7.28
4	1.6	19.6	7.08
5	2	24.5	7.06
6	2.4	29.4	6.85
7	2.8	34.3	6.75
8	3.2	39.2	6.77
9	3.6	44.1	6.74
10	4	49	6.68
11	4.4	53.9	6.58
12	4.8	58.8	6.41
13	5.2	63.7	5.9
14	5.6	68.6	5.83
15	6	73.5	4.98
16	6.4	78.4	4.22
17	6.8	83.3	3.58
18	7.2	88.2	5.15
19	7.6	93.1	3.83
20	8	98	3.39
21	8.4	102.9	3.35
22	8.8	107.8	3.3
23	9.2	112.7	3.28
24	9.6	117.6	3.23
25	10	122.5	3.09
26	10.4	127.4	2.88
27	10.8	132.3	2.74
28	11.2	137.2	2.67
29	11.6	142.1	2.54
30	12	147	2.42

SRK ID		BSDD006_87_89	
MRL ID		PFL0924-19	
LITH		tm	
Sample Date		16/05/2025	
ANC		25	
Weathering		fr	
HCl Molarity		0.1	
mL Increments		0.5	
Weight (g)		2	
ANC to pH 7		2	
ANC to pH 6		5	
ANC to pH 4.5		7	
Addition	mLs added (total)	kg H ₂ SO ₄	pH
0	0	0	9.56
1	0.5	1.225	8.27
2	1	2.45	6.8
3	1.5	3.675	6.56
4	2	4.9	6.05
5	2.5	6.125	5.52
6	3	7.35	4.36
7	3.5	8.575	4.11
8	4	9.8	4.02
9	4.5	11.025	3.96
10	5	12.25	3.7
11	5.5	13.475	3.42
12	6	14.7	3.23
13	6.5	15.925	3.11
14	7	17.15	2.94
15	7.5	18.375	2.84
16	8	19.6	2.82
17	8.5	20.825	2.74
18	9	22.05	3.28
19	9.5	23.275	3.01
20	10	24.5	2.85
21	10.5	25.725	2.73
22	11	26.95	2.65
23	11.5	28.175	2.58
24	12	29.4	2.52
25	12.5	30.625	2.46

SRK ID		BSDD008_47.88_49.17	
MRL ID		PFL0924-25	
LITH		xx	
Sample Date		21/05/2025	
ANC		650	
Weathering		fr	
HCl Molarity		0.5	
mL Increments		1	
Weight (g)		2	
ANC to pH 7		29	
ANC to pH 6		203	
ANC to pH 4.5		267	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	9.85
1	1	12.25	7.34
2	2	24.5	7.05
3	3	36.75	6.91
4	4	49	6.82
5	5	61.25	6.76
6	6	73.5	6.71
7	7	85.75	6.65
8	8	98	6.56
9	9	110.25	6.47
10	10	122.5	6.51
11	11	134.75	6.51
12	12	147	6.46
13	13	159.25	6.35
14	14	171.5	6.27
15	15	183.75	6.23
16	16	196	6.06
17	17	208.25	5.95
18	18	220.5	5.74
19	19	232.75	5.39
20	20	245	5.43
21	21	257.25	4.9
22	22	269.5	4.42
23	23	281.75	2.73
24	24	294	2.37

SRK ID		BSDD016_41_43.5	
MRL ID		PFL0924-32	
LITH		tbg	
Sample Date		16/05/2025	
ANC		12	
Weathering		fr	
HCl Molarity		0.1	
mL Increments		0.2	
Weight (g)		2	
ANC to pH 7		1	
ANC to pH 6		2	
ANC to pH 4.5		5	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	9.53
1	0.2	0.49	8.12
2	0.4	0.98	7.54
3	0.6	1.47	6.88
4	0.8	1.96	6.41
5	1	2.45	5.72
6	1.2	2.94	5.46
7	1.4	3.43	5.3
8	1.6	3.92	5.16
9	1.8	4.41	4.96
10	2	4.9	4.73
11	2.2	5.39	4.52
12	2.4	5.88	4.35
13	2.6	6.37	4.23
14	2.8	6.86	4.04
15	3	7.35	3.89
16	3.2	7.84	3.81
17	3.4	8.33	3.74
18	3.6	8.82	3.59
19	3.8	9.31	3.58
20	4	9.8	4.1
21	4.2	10.29	3.85
22	4.4	10.78	3.73
23	4.6	11.27	3.51
24	4.8	11.76	3.25
25	5	12.25	3.15
26	5.2	12.74	3.07
27	5.4	13.23	3
28	5.6	13.72	2.94
29	5.8	14.21	2.89
30	6	14.7	2.84
31	6.2	15.19	2.8
32	6.4	15.68	2.76
33	6.6	16.17	2.73
34	6.8	16.66	2.7
35	7	17.15	2.66
36	7.2	17.64	2.63
37	7.4	18.13	2.6
38	7.6	18.62	2.59
39	7.8	19.11	2.56
40	8	19.6	2.53
41	8.2	20.09	2.51
42	8.4	20.58	2.49

SRK ID		BSDD022_4.4_4.8	
MRL ID		PFL0924-43	
LITH		md	
Sample Date		16/05/2025	
ANC		28	
Weathering		mw	
HCl Molarity		0.1	
mL Increments		0.5	
Weight (g)		2	
ANC to pH 7		1	
ANC to pH 6		2	
ANC to pH 4.5		3	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	9.39
1	0.5	1.225	6.89
2	1	2.45	4.57
3	1.5	3.675	4.18
4	2	4.9	3.86
5	2.5	6.125	3.66
6	3	7.35	3.44
7	3.5	8.575	3.32
8	4	9.8	3.19
9	4.5	11.025	3.06
10	5	12.25	2.97
11	5.5	13.475	2.86
12	6	14.7	2.8
13	6.5	15.925	2.74
14	7	17.15	2.66
15	7.5	18.375	2.6
16	8	19.6	2.59
17	8.5	20.825	2.5
18	9	22.05	2.84
19	9.5	23.275	2.71
20	10	24.5	2.61
21	10.5	25.725	2.54
22	11	26.95	2.47

SRK ID		BSDD026_98_100	
MRL ID		PFL0924-53	
LITH		tg	
Sample Date		16/05/2025	
ANC		50	
Weathering		fr	
HCl Molarity		0.5	
mL Increments		0.2	
Weight (g)		2	
ANC to pH 7		14	
ANC to pH 6		18	
ANC to pH 4.5		22	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	9.76
1	0.2	2.45	8.27
2	0.4	4.9	7.98
3	0.6	7.35	7.74
4	0.8	9.8	7.64
5	1	12.25	7.4
6	1.2	14.7	6.84
7	1.4	17.15	6.35
8	1.6	19.6	5.11
9	1.8	22.05	4.37
10	2	24.5	3.92
11	2.2	26.95	3.5
12	2.4	29.4	3.24
13	2.6	31.85	3.05
14	2.8	34.3	2.86
15	3	36.75	2.72
16	3.2	39.2	2.63
17	3.4	41.65	2.56
18	3.6	44.1	2.44

SRK ID BSDD027_106.52_108.7			
MRL ID PFL0924-57			
LITH tg			
Sample Date 16/05/2025			
ANC 19			
Weathering fr			
HCl Molarity 0.1			
mL Increments 0.2			
Weight (g) 2			
ANC to pH 7 5			
ANC to pH 6 6			
ANC to pH 4.5 10			
Addition	mLs added (total)	kg H ₂ SO ₄	pH
0	0	0	9.62
1	0.2	0.49	8.79
2	0.4	0.98	8.37
3	0.6	1.47	8.18
4	0.8	1.96	8.07
5	1	2.45	7.99
6	1.2	2.94	7.89
7	1.4	3.43	7.69
8	1.6	3.92	7.63
9	1.8	4.41	7.48
10	2	4.9	7.25
11	2.2	5.39	6.87
12	2.4	5.88	6.22
13	2.6	6.37	5.98
14	2.8	6.86	5.78
15	3	7.35	5.46
16	3.2	7.84	5.22
17	3.4	8.33	5.13
18	3.6	8.82	4.91
19	3.8	9.31	4.98
20	4	9.8	5.26
21	4.2	10.29	4.41
22	4.4	10.78	4.23
23	4.6	11.27	4.04
24	4.8	11.76	3.82
25	5	12.25	3.67
26	5.2	12.74	3.55
27	5.4	13.23	3.45
28	5.6	13.72	3.34
29	5.8	14.21	3.28
30	6	14.7	3.24
31	6.2	15.19	3.21
32	6.4	15.68	3.13
33	6.6	16.17	3.08
34	6.8	16.66	3.01
35	7	17.15	2.98
36	7.2	17.64	2.95
37	7.4	18.13	2.89
38	7.6	18.62	2.86
39	7.8	19.11	2.83
40	8	19.6	2.77
41	8.2	20.09	2.76
42	8.4	20.58	2.74
43	8.6	21.07	2.73
44	8.8	21.56	2.7
45	9	22.05	3.02
46	9.2	22.54	3.01
47	9.4	23.03	2.94
48	9.6	23.52	2.89
49	9.8	24.01	2.83
50	10	24.5	2.78
51	10.2	24.99	2.74
52	10.4	25.48	2.7
53	10.6	25.97	2.67
54	10.8	26.46	2.64
55	11	26.95	2.61
56	11.2	27.44	2.58
57	11.4	27.93	2.56
58	11.6	28.42	2.54
59	11.8	28.91	2.51
60	12	29.4	2.5
61	12.2	29.89	2.48

SRK ID BSDD032_59.12_60.5			
MRL ID PFL0924-65			
LITH tm			
Sample Date 16/05/2025			
ANC 33			
Weathering fr			
HCl Molarity 0.1			
mL Increments 0.5			
Weight (g) 2			
ANC to pH 7 1			
ANC to pH 6 2			
ANC to pH 4.5 4			
Addition	mLs added (total)	kg H ₂ SO ₄	pH
0	0	0	9.55
1	0.5	1.225	6.86
2	1	2.45	5.39
3	1.5	3.675	4.74
4	2	4.9	4.25
5	2.5	6.125	3.91
6	3	7.35	3.82
7	3.5	8.575	3.62
8	4	9.8	3.49
9	4.5	11.025	3.33
10	5	12.25	3.26
11	5.5	13.475	3.12
12	6	14.7	3.04
13	6.5	15.925	2.94
14	7	17.15	2.83
15	7.5	18.375	2.77
16	8	19.6	2.75
17	8.5	20.825	2.68
18	9	22.05	3.21
19	9.5	23.275	2.97
20	10	24.5	2.81
21	10.5	25.725	2.7
22	11	26.95	2.62
23	11.5	28.175	2.57
24	12	29.4	2.53
25	12.5	30.625	2.46

SRK ID		BSDD032_150_152	
MRL ID		PFL0924-66	
LITH		ts	
Sample Date		16/05/2025	
ANC		24	
Weathering		fr	
HCl Molarity		0.1	
mL Increments		0.5	
Weight (g)		2	
ANC to pH 7		2	
ANC to pH 6		2	
ANC to pH 4.5		4	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	9.69
1	0.5	1.225	7.43
2	1	2.45	5.74
3	1.5	3.675	4.6
4	2	4.9	4.16
5	2.5	6.125	3.89
6	3	7.35	3.58
7	3.5	8.575	3.34
8	4	9.8	3.3
9	4.5	11.025	3.2
10	5	12.25	3.08
11	5.5	13.475	2.94
12	6	14.7	2.89
13	6.5	15.925	2.82
14	7	17.15	2.73
15	7.5	18.375	2.65
16	8	19.6	2.64
17	8.5	20.825	2.58
18	9	22.05	2.96
19	9.5	23.275	2.8
20	10	24.5	2.67
21	10.5	25.725	2.59
22	11	26.95	2.52
23	11.5	28.175	2.45

SRK ID		BSDD032_163_164	
MRL ID		PFL0924-67	
LITH		ti	
Sample Date		16/05/2025	
ANC		36	
Weathering		fr	
HCl Molarity		0.1	
mL Increments		0.5	
Weight (g)		2	
ANC to pH 7		11	
ANC to pH 6		14	
ANC to pH 4.5		19	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	9.71
1	0.5	1.225	8.47
2	1	2.45	7.38
3	1.5	3.675	7.24
4	2	4.9	7.36
5	2.5	6.125	7.26
6	3	7.35	7.42
7	3.5	8.575	7.31
8	4	9.8	7.37
9	4.5	11.025	6.94
10	5	12.25	6.47
11	5.5	13.475	6.37
12	6	14.7	5.92
13	6.5	15.925	5.74
14	7	17.15	5.28
15	7.5	18.375	4.84
16	8	19.6	4.41
17	8.5	20.825	4.1
18	9	22.05	4.67
19	9.5	23.275	3.81
20	10	24.5	3.53
21	10.5	25.725	3.28
22	11	26.95	3.14
23	11.5	28.175	2.99
24	12	29.4	2.84
25	12.5	30.625	2.76
26	13	31.85	2.71
27	13.5	33.075	2.66
28	14	34.3	2.61
29	14.5	35.525	2.56
30	15	36.75	2.51
31	15.5	37.975	2.47

SRK ID		BSDD032_164.46_166	
MRL ID		PFL0924-68	
LITH		tb	
Sample Date		16/05/2025	
ANC		40	
Weathering		fr	
HCl Molarity		0.1	
mL Increments		0.5	
Weight (g)		2	
ANC to pH 7		6	
ANC to pH 6		7	
ANC to pH 4.5		10	
Addition	mLs added (total)	kg H ₂ SO ₄	pH
0	0	0	9.74
1	0.5	1.225	8.4
2	1	2.45	7.77
3	1.5	3.675	7.22
4	2	4.9	7.14
5	2.5	6.125	6.88
6	3	7.35	5.52
7	3.5	8.575	4.58
8	4	9.8	4.48
9	4.5	11.025	4.24
10	5	12.25	3.95
11	5.5	13.475	3.77
12	6	14.7	3.58
13	6.5	15.925	3.43
14	7	17.15	3.27
15	7.5	18.375	3.2
16	8	19.6	3.12
17	8.5	20.825	3.02
18	9	22.05	3.74
19	9.5	23.275	3.31
20	10	24.5	3.07
21	10.5	25.725	2.91
22	11	26.95	2.8
23	11.5	28.175	2.71
24	12	29.4	2.66
25	12.5	30.625	2.59
26	13	31.85	2.55
27	13.5	33.075	2.51
28	14	34.3	2.46

SRK ID		BSDD033_50_52	
MRL ID		PFL0924-71	
LITH		tb	
Sample Date		16/05/2025	
ANC		23	
Weathering		ww	
HCl Molarity		0.1	
mL Increments		0.5	
Weight (g)		2	
ANC to pH 7		3	
ANC to pH 6		5	
ANC to pH 4.5		7	
Addition	mLs added (total)	kg H ₂ SO ₄	pH
0	0	0	9.64
1	0.5	1.225	8.33
2	1	2.45	7.4
3	1.5	3.675	6.83
4	2	4.9	5.94
5	2.5	6.125	4.8
6	3	7.35	4.19
7	3.5	8.575	3.84
8	4	9.8	3.85
9	4.5	11.025	3.65
10	5	12.25	3.43
11	5.5	13.475	3.27
12	6	14.7	3.13
13	6.5	15.925	3
14	7	17.15	2.89
15	7.5	18.375	2.82
16	8	19.6	2.77
17	8.5	20.825	2.7
18	9	22.05	3.23
19	9.5	23.275	3
20	10	24.5	2.83
21	10.5	25.725	2.72
22	11	26.95	2.65
23	11.5	28.175	2.57
24	12	29.4	2.53
25	12.5	30.625	2.48

SRK ID		BSDD037_50_52	
MRL ID		PFL0924-82	
LITH		gm	
Sample Date		16/05/2025	
ANC		12	
Weathering		ww	
HCl Molarity		0.1	
mL Increments		0.2	
Weight (g)			
ANC to pH 7		1	
ANC to pH 6		1	
ANC to pH 4.5		5	
Addition	mLs added (total)	kg H ₂ SO ₄	pH
0	0	0	8.79
1	0.2	0.49	7.55
2	0.4	0.98	6.66
3	0.6	1.47	5.98
4	0.8	1.96	5.65
5	1	2.45	5.41
6	1.2	2.94	5.29
7	1.4	3.43	5.1
8	1.6	3.92	4.96
9	1.8	4.41	4.81
10	2	4.9	4.64
11	2.2	5.39	4.48
12	2.4	5.88	4.32
13	2.6	6.37	4.14
14	2.8	6.86	4
15	3	7.35	3.83
16	3.2	7.84	3.73
17	3.4	8.33	3.68
18	3.6	8.82	3.55
19	3.8	9.31	3.51
20	4	9.8	4.01
21	4.2	10.29	3.74
22	4.4	10.78	3.57
23	4.6	11.27	3.39
24	4.8	11.76	3.24
25	5	12.25	3.14
26	5.2	12.74	3.08
27	5.4	13.23	3
28	5.6	13.72	2.95
29	5.8	14.21	2.89
30	6	14.7	2.86
31	6.2	15.19	2.82
32	6.4	15.68	2.77
33	6.6	16.17	2.74
34	6.8	16.66	2.71
35	7	17.15	2.68
36	7.2	17.64	2.67
37	7.4	18.13	2.63
38	7.6	18.62	2.6
39	7.8	19.11	2.57
40	8	19.6	2.54
41	8.2	20.09	2.53

SRK ID		BSRC1450_56_58	
MRL ID		PFL0924-CD	
LITH		gm	
Sample Date		16/05/2025	
ANC		22	
Weathering		fr	
HCl Molarity		0.1	
mL Increments		0.5	
Weight (g)		2	
ANC to pH 7		2	
ANC to pH 6		3	
ANC to pH 4.5		5	
Addition	mLs added (total)	kg H ₂ SO ₄	pH
0	0	0	9.26
1	0.5	1.225	7.31
2	1	2.45	6.2
3	1.5	3.675	5.17
4	2	4.9	4.35
5	2.5	6.125	3.82
6	3	7.35	3.51
7	3.5	8.575	3.3
8	4	9.8	3.17
9	4.5	11.025	3.35
10	5	12.25	3.3
11	5.5	13.475	3.47
12	6	14.7	3.66
13	6.5	15.925	3.46
14	7	17.15	3.24
15	7.5	18.375	3.11
16	8	19.6	3.04
17	8.5	20.825	2.97
18	9	22.05	3.57
19	9.5	23.275	3.23
20	10	24.5	3.02
21	10.5	25.725	2.86
22	11	26.95	2.77
23	11.5	28.175	2.68
24	12	29.4	2.62
25	12.5	30.625	2.55
26	13	31.85	2.53
27	13.5	33.075	2.48

SRK ID		BSRC1451_75_76	
MRL ID		PFL0924-CF	
LITH		tm	
Sample Date		16/05/2025	
ANC		170	
Weathering		fr	
HCl Molarity		0.5	
mL Increments		0.2	
Weight (g)		2	
ANC to pH 7		14	
ANC to pH 6		20	
ANC to pH 4.5		25	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	9.74
1	0.2	2.45	8.4
2	0.4	4.9	7.81
3	0.6	7.35	7.41
4	0.8	9.8	7.04
5	1	12.25	7.44
6	1.2	14.7	6.91
7	1.4	17.15	6.44
8	1.6	19.6	6.05
9	1.8	22.05	5.03
10	2	24.5	4.57
11	2.2	26.95	3.97
12	2.4	29.4	3.5
13	2.6	31.85	3.35
14	2.8	34.3	3.34
15	3	36.75	3.17
16	3.2	39.2	3.05
17	3.4	41.65	2.96
18	3.6	44.1	4.04
19	3.8	46.55	3.22
20	4	49	2.91
21	4.2	51.45	2.69
22	4.4	53.9	2.56
23	4.6	56.35	2.47

SRK ID		BSDD009_89_89.5_ore	
MRL ID		PFL0924-CO	
LITH		tm	
Sample Date		16/05/2025	
ANC		22	
Weathering		fr	
HCl Molarity		0.1	
mL Increments		0.5	
Weight (g)		2	
ANC to pH 7		5	
ANC to pH 6		8	
ANC to pH 4.5		11	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	9.56
1	0.5	1.225	8.33
2	1	2.45	7.57
3	1.5	3.675	7.39
4	2	4.9	6.86
5	2.5	6.125	6.63
6	3	7.35	6.42
7	3.5	8.575	5.64
8	4	9.8	5.13
9	4.5	11.025	4.71
10	5	12.25	4.16
11	5.5	13.475	3.87
12	6	14.7	3.62
13	6.5	15.925	3.43
14	7	17.15	3.26
15	7.5	18.375	3.18
16	8	19.6	3.13
17	8.5	20.825	3.07
18	9	22.05	4.66
19	9.5	23.275	3.94
20	10	24.5	3.64
21	10.5	25.725	3.42
22	11	26.95	3.31
23	11.5	28.175	3.24
24	12	29.4	3.12
25	12.5	30.625	3.02
26	13	31.85	2.91
27	13.5	33.075	2.86
28	14	34.3	2.78
29	14.5	35.525	2.72
30	15	36.75	2.66
31	15.5	37.975	2.6
32	16	39.2	2.58
33	16.5	40.425	2.54
34	17	41.65	2.5
35	17.5	42.875	2.46

SRK ID		BSDD048_51.81_52.37_ore	
MRL ID		PFL0924-CY	
LITH		ti	
Sample Date		16/05/2025	
ANC		13	
Weathering		fr	
HCl Molarity		0.1	
mL Increments		0.2	
Weight (g)		2	
ANC to pH 7		1	
ANC to pH 6		1	
ANC to pH 4.5		4	
Addition	mLs added (total)	kg H₂SO₄	pH
0	0	0	8.04
1	0.2	0.49	7.03
2	0.4	0.98	6.17
3	0.6	1.47	5.84
4	0.8	1.96	5.67
5	1	2.45	5.46
6	1.2	2.94	5.21
7	1.4	3.43	4.84
8	1.6	3.92	4.56
9	1.8	4.41	4.33
10	2	4.9	4.13
11	2.2	5.39	4.05
12	2.4	5.88	3.94
13	2.6	6.37	3.84
14	2.8	6.86	3.76
15	3	7.35	3.64
16	3.2	7.84	3.59
17	3.4	8.33	3.55
18	3.6	8.82	3.47
19	3.8	9.31	3.45
20	4	9.8	4.45
21	4.2	10.29	4.17
22	4.4	10.78	3.95
23	4.6	11.27	3.76
24	4.8	11.76	3.57
25	5	12.25	3.42
26	5.2	12.74	3.33
27	5.4	13.23	3.24
28	5.6	13.72	3.18
29	5.8	14.21	3.13
30	6	14.7	3.09
31	6.2	15.19	3.03
32	6.4	15.68	3.01
33	6.6	16.17	2.95

Addition	mLs added (total)	kg H ₂ SO ₄	pH
34	6.8	16.66	2.93
35	7	17.15	2.9
36	7.2	17.64	2.87
37	7.4	18.13	2.81
38	7.6	18.62	2.79
39	7.8	19.11	2.77
40	8	19.6	2.73
41	8.2	20.09	2.73
42	8.4	20.58	2.71
43	8.6	21.07	2.67
44	8.8	21.56	2.66
45	9	22.05	3.07
46	9.2	22.54	3.06
47	9.4	23.03	2.98
48	9.6	23.52	2.93
49	9.8	24.01	2.87
50	10	24.5	2.81
51	10.2	24.99	2.77
52	10.4	25.48	2.74
53	10.6	25.97	2.7
54	10.8	26.46	2.67
55	11	26.95	2.64
56	11.2	27.44	2.62
57	11.4	27.93	2.59
58	11.6	28.42	2.56
59	11.8	28.91	2.55
60	12	29.4	2.53
61	12.2	29.89	2.5
62	12.4	30.38	2.49

Appendix I Physical test results

Appendix I - Physical test results

Slake durability test

MRL ID	SRK ID	Rock type	Grade	Pit name	Weathering class	Report No.	1st cycle (%)	2nd cycle (%)	Slaking fluid	Slaking fluid temperature (°C)	Appearance of fragments in the drum	Appearance of material passing through the drum	Slake durability class ¹
PFL0924-80	BSDD036_87_89	tg	Waste	Jinkas	fr	ARC25660-1	99.7	99.6	Tap Water	21	Retained specimens remain virtually unchanged	Slight Silt Appearance	Extremely durable
PFL0924-24	BSDD008_44.7_46	tb	Waste	Dingo	fr	ARC25660-1	99.9	99.8	Tap Water	21	Retained specimens remain virtually unchanged	Slight Silt Appearance	Extremely durable
PFL0924-41	BSDD018_129_131	tb	Waste	Jinkas	fr	ARC25660-1	99.2	99.1	Tap Water	21	Retained specimens remain virtually unchanged	Slight Silt Appearance	Extremely durable
PFL0924-81	BSDD036_121_123	tm	Waste	Jinkas	fr	ARC25660-1	99.4	99.1	Tap Water	21	Retained specimens remain virtually unchanged	Slight Silt Appearance	Extremely durable
PFL0924-AC	BSDD044_66_68	tm	Waste	Dingo	fr	ARC25660-1	99.8	99.7	Tap Water	21	Retained specimens remain virtually unchanged	Slight Silt Appearance	Extremely durable
PFL0924-46	BSDD022_47.3_47.8	gm	Waste	Jinkas	fr	ARC25660-1	100.4	100.3	Tap Water	21	Retained specimens remain virtually unchanged	Slight Silt Appearance	Extremely durable
PFL0924-AL	BSDD048_57_59	ti	Waste	Jackson	fr	ARC25660-1	99.8	99.7	Tap Water	21	Retained specimens remain virtually unchanged	Slight Silt Appearance	Extremely durable
PFL0924-10	BSDD002_54_55.6	xx	Waste	Jinkas	fr	ARC25660-1	99.6	99.5	Tap water	21	Retained specimens remain virtually unchanged	Slight silty appearance	Extremely durable
PFL0924-66	BSDD032_150_152	ts	Waste	Jinkas	fr	ARC25660-1	99.8	99.6	Tap Water	21	Retained specimens remain virtually unchanged	Slight Silt Appearance	Extremely durable

Notes: Sample BSDD022_18_18.5 could not be tested due to insufficient material.

¹. Interpretation based on classification

CEC, ESP and Emersons results

MRL ID	SRK ID	Rock type	Grade	Pit name	Weathering class	Exchangeable cations (meq/100g)					ESP (%)	CEC rating ¹	ESP rating ²	Emersons class	Emersons soil description	Emersons dispersion risk ³
						Ca	K	Mg	Na	CEC						
PFL0924-06	BSDD002_8_10	tg	Waste	Jinkas	sw	0.9	0.5	2.1	2.2	5.7	38	Very low	Strongly sodic	8	Rock	No dispersion
PFL0924-11	BSDD004_4_5.8	tb	Waste	Jinkas	sw	3.7	0.8	2.5	0.6	7.6	7.9	Low	Marginally sodic to sodic	8	Rock	No dispersion
PFL0924-50	BSDD024_19.5_22	tb	Waste	Jinkas	cw	0.4	0.8	1.5	2.0	4.7	43	Very low	Strongly sodic	5	Silty Sand with Gravel	Slight dispersion
PFL0924-08	BSDD002_31_33	cy	Waste	Jinkas	cw	0.7	0.8	3.1	2.6	7.2	37	Low	Strongly sodic	5	Silty Sand with Gravel	Slight dispersion
PFL0924-69	BSDD033_22_24	cy	Waste	Dingo	sw	0.4	0.3	2.9	2.3	5.9	39	Very low	Strongly sodic	5	Silty Sand with Gravel	Slight dispersion
PFL0924-94	BSDD041_8_10	cy	Waste	Jinkas	cw	2	0.6	2.8	2.1	7.5	28	Low	Strongly sodic	2	Sandy Clay with Gravel	Some dispersion
PFL0924-AK	BSDD048_23_25	cy	Waste	Jackson	sw	0.4	0.3	7.5	7.9	16	49	Moderate	Strongly sodic	5	Sandy Silt with Gravel	Slight dispersion
PFL0924-BK	BSRC0948_13_15	cy	Waste	Olympia	cw	0.6	0.9	6.7	7.1	15	46	Moderate	Strongly sodic	-	-	-
PFL0924-BY	BSRC1357_6_8	cy	Waste	Olympia	sw	0.2	0.7	8.5	10	20	53	Moderate	Strongly sodic	-	-	-
PFL0924-BP	BSRC1064_10_12	gm	Waste	Jackson	sw	1.6	0.6	0.9	1.8	4.8	37	Very low	Strongly sodic	-	-	-
PFL0924-12	BSDD004_15_17	ti	Waste	Jinkas	sw	9.2	0.6	1.6	0.9	12	7	Low	Marginally sodic to sodic	8	Crushed Rock	No dispersion
PFL0924-BB	BSRC0494_18_20	md	Waste	Jackson	sw	2.8	0.4	8.0	7.7	19	41	Moderate	Strongly sodic	-	-	-
PFL0924-73	BSDD034_0.8_1.5	zl	Waste	Dingo	cw	0.3	0.1	2.0	0.8	3.2	24	Very low	Strongly sodic	6	Silty Sand with Gravel	Negligible dispersion
PFL0924-74	BSDD035_1.5_3	zl	Waste	Dingo	cw	0.3	0.3	4.0	3.9	8.4	46	Low	Strongly sodic	6	Silty Sand with Gravel	Negligible dispersion
PFL0924-77	BSDD036_0_0.1	zs	Waste	Jinkas	cw	0.9	0.4	0.7	0.6	2.6	21	Very low	Strongly sodic	5	Silty Sand	Slight dispersion
PFL0924-AH	BSDD048_0_0.28	zs	Waste	Jackson	sw	1.7	0.5	3.7	1.1	7.0	16	Low	Strongly sodic	2	Sandy Clay	Some dispersion
PFL0924-BJ	BSRC0765_0_2	zs	Waste	Jinkas	cw	2.5	0.3	1.5	0.3	4.7	7.2	Very low	Marginally sodic to sodic	-	-	-
PFL0924-85	BSDD038_0_1	zx	Waste	Jinkas	cw	2.4	0.5	3.4	1.4	7.7	19	Low	Strongly sodic	2	Silty Sand with Gravel	Some dispersion
PFL0924-BO	BSRC1018_5_7	zx	Waste	Jinkas	pw	0.9	0.3	1.6	1.3	4.1	32	Very low	Strongly sodic	-	-	-
PFL0924-93	BSDD041_1_2	gg	Waste	Jinkas	sw	2.3	0.5	1.7	1.9	6.5	30	Low	Strongly sodic	5	Gravel	Slight dispersion

Notes:
¹. Based on Hazelton and Murphy (2007) rating
². Based on Northcote and Skene (1972) rating
³. Based on Hazelton and Murphy (2007) rating

Appendix J Laboratory certificates

QUANTITATIVE X-RAY DIFFRACTION ANALYSIS

REPORT PREPARED FOR	MPL LABORATORIES M. CONROY
CLIENT CODE	438.00
JOB CODE	2506382
No. of SAMPLES	19
CLIENT O/N	PFL0924
SAMPLE SUBMISSION No.	PFL0924
PROJECT	
STATE	
DATE RECEIVED	29/04/2025
DATE COMPLETED	9/06/2025
DATE WRITTEN	9/06/2025
WRITTEN BY	Dr Cat Kealley
ANALYSING LABORATORY	Perth

SAMPLE DETAILS

DISCLAIMER

This report relates specifically to the sample(s) that were drawn and/or provided by the client or their nominated third party. The reported result(s) provide no warranty or verification on the sample(s) representing any specific goods and/or shipment and only relate to the sample(s) as received and tested. This report is prepared solely for the use of the client named in this report. Intertek accepts no responsibility for any loss, damage or liability suffered by a third party as a result of any reliance upon or use of this report.

The results provided are not intended for commercial settlement purposes.

SIGNIFICANT FIGURES

The detection limit for most crystalline phases is approximately 0.5 wt%. However, this is dependent on instrument conditions, matrix, crystallinity and whether the pattern for the phase has been sufficiently deconvoluted in the presence of overlapping reflections.

Uncertainty in the analysis should reflect errors (absolute) of no greater than: +/-10% for phases 50-95%, +/- 5% for phases 10-50% and +/- 2% for phases <10%.

Please note that results are rounded off to integer values

LEGEND

ND	Not Detected
EMPTY CELL	Phase not included in refinement

JOB INFORMATION

PREPARATION

XRD16 (dry 50C, mill < 60um, micronised)

ANALYTICAL METHOD

XRDQUANT01 - Quantitative analysis, crystalline and amorphous content

SAMPLING

Sample(s) coned and quartered, then grab(s) taken

AMORPHOUS CONTENT DETERMINATION

Internal standard single scan

ADDITIONS

Internal standard CaF₂ (fluorite)

SAMPLE PRESENTATION

Sample(s) packed and presented as unoriented powder mount(s) of the total sample

JOB INFORMATION

INSTRUMENTATION AND PARAMETERS

INSTRUMENT: PANalytical Cubix³ XRD
Cobalt radiation (operating at 40 kV and 40 mA)
BBHD monochromator (incident beam)

PARAMETERS:

Parameter	Setting
Start angle (deg 2 θ)	5
End angle (deg 2 θ)	95
Step size (deg 2 θ)	0.02
Time/active length (secs)	30
Active length (deg 2 θ)	4.01

SOFTWARE:
Qualitative analysis: Bruker Diffrac.EVA 6.0 Search/Match
ICDD PDF-2 (2023) database

Quantitative analysis: SIROQUANT Version 4
ICSD (2023) database

RESULTS

The quantitative analysis of the crystalline and amorphous content of each sample is given in the file, **438.00_2506382 XRD RESULTS.xlsx**, attached to the report email.

Calculation of the phase abundances has been based on the Brindley contrast corrections using a particle diameter of 10 μm .

NOTES

1

The amorphous content may contain some of the more poorly crystalline clay phases and conversely the clay phase content may contain some poorly crystalline or amorphous material. Where there is a significant presence of clay material, the distinction between poorly crystalline material and amorphous content can be imprecise.

2

For confirmation of the clay mineralogy, a clay separation followed by analysis of oriented clay mounts (glycol and heat treated) would be required.

QUALITY CONTROL

A standard is used for quality control on the instrument and software.

A standard reference material (SRM) is a powder which consists of sub-micrometre, equi-axed, non-aggregated grains that do not display the effects of absorption contrast, extinction, or preferred orientation.

An aliquot of the NIST SRM656 reference material, spiked with 10% Al₂O₃ (SRM 676a) for the amorphous content determination, was prepared as un-oriented powder mount of the total sample.

Sample ID NIST SRM656 (High α Phase Powder)

		2506382	method	SRM	SRM
			std dev	certified	uncert
Phase	Formula	wt%	wt%	wt%	wt%
Amorphous content		9.6	0.5	9.6	0.6
Si ₃ N ₄ , alpha	Si ₃ N ₄	87.5	0.5	87.4	0.6
Si ₃ N ₄ , beta	Si ₃ N ₄	2.9	0.1	3.0	0.1

Each interval defined by the certified value and its uncertainty is a 95% confidence interval for the true value of the mean in the absence of systematic error.

METHOD DESCRIPTION

A diffraction pattern is calculated using the Rietveld method^{1,2}, and the difference between the calculated and measured diffraction patterns is minimised. The total calculated pattern is the sum of the calculated patterns of the individual crystalline phases.

Results are given as the weight percentages of the individual crystalline phases and total amorphous content, as described overleaf.

The total amorphous content includes amorphous material and unanalysed materials, such as unknown minerals, or known minerals for which there is not a suitable crystal structure.

Corrections are incorporated into the process that allows for a more accurate description of the mineral's contribution to the measured pattern and to allow for variation due to atomic substitution, layer disordering, preferred orientation, and other factors that affect the acquisition of the XRD scan.

Some limitations of qualitative XRD analysis are as follows:

There is a limit of detection of approximately 0.5 wt% on the crystalline phases. The detection of a phase may be dependent on its crystallinity. Where there exist multiple phases, overlap of diffracted reflections can occur, thus rendering some ambiguity into the interpretation. Overlapping reflections of a major phase can mask the presence of minor or trace phases.

Some phases cannot be unambiguously identified, as they are present in minor or trace amounts.

Some limitations of quantitative XRD analysis by a full-profile Rietveld method are as follows:

The limitations for qualitative XRD analysis apply.

The method as described is standardless: it relies solely on the published crystallographic data available for each phase. Some data may not exactly describe the phases present.

Particle size is important with respect to the absorption of the X-rays by the sample. Micronising reduces the particle size to that more suitable for quantitative analysis.

The accuracy of the analysis is dependent on sampling and sample preparation in addition to the calculated profiles being exactly representative of the chemistry of the component phases and their crystallinity. Some preferred orientation effects and reflection overlaps may occur which cannot be adequately resolved.

References:

1. Rietveld, H. M. (1969). A profile refinement method for nuclear and magnetic structures. J. Appl. Cryst. 2, 65-71.
2. Loopstra, B. O. & Rietveld, H. M. (1969). The structure of some alkaline-earth metal uranates. Acta Cryst. B25, 787-791.

AMORPHOUS CONTENT

INTERNAL STANDARD METHOD

The amorphous content is determined from the addition of a known amount of a well-characterised, crystalline reference material (spike) to each sample^{1,2}.

Single scan

When amorphous material is present, the calculated weight percentage of the spike is larger than actually weighed out. The amount of amorphous material is calculated by scaling the calculated spike's weight percentage to be equal to its known addition.

Double scan

Diffraction data are collected from both unspiked and spiked specimens. The weight percentages calculated from an unspiked specimen are often more accurate as the intensities are not diluted by the spike addition. The weight percentages from the unspiked sample are normalised by the amorphous content calculated from the spiked specimen.

EXTERNAL STANDARD METHOD

The amorphous content is determined by the comparison of the diffracted intensities of an unspiked specimen with a specimen of a well-characterised, crystalline reference material³.

References:

1. Hill, R. J. & Howard, C. J. (1987). Quantitative phase analysis from neutron powder diffraction data using the Rietveld method. *J. Appl. Cryst.* 20, pp. 467–474.
2. I. C. Madsen, N. V. Y. Scarlett, R. Kleeberg and K. Knorr (2019) "Quantitative phase analysis", in *International Tables for Crystallography Volume H Powder Diffraction*, eds. C. J. Gilmore, J. A. Kaduk and H. Schenk, Chapter 3.9, pp.344 – 373, London: Wiley.
3. O'Connor, B.H., and Raven, M.D. (1988), "Application of the Rietveld refinement procedure in assaying powdered mixtures", *Powder Diffraction* 3, pp. 2-6.

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- b) the cost of having those services supplied again.

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MINERALS TEST REPORT

CLIENT

MPL LABORATORIES

PO Box 4024
MYAREE BC, W.A. 6960
AUSTRALIA

JOB INFORMATION

JOB CODE : 438.0/2500640
NO. SAMPLES : 175
NO. ELEMENTS : 48
CLIENT ORDER NO. : PFL0924 (Job 1 of 1)
SAMPLE SUBMISSION NO. : PFL0924
PROJECT :
SAMPLE TYPE : Pulp
DATE RECEIVED : 15/01/2025
DATE TESTED : 19/01/2025 - 24/01/2025
DATE REPORTED : 24/01/2025
DATE PRINTED : 24/01/2025

REPORT NOTES

TESTED BY

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APPROVED SIGNATURE FOR



Andrew RILEY
Regional Manager
Geochemistry Western Australia

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For more information on the uncertainty on individual reported values, please contact the laboratory.

MEASUREMENT OF UNCERTAINTY

Measurement of uncertainty estimates are available for most tests upon request.

SAMPLE STORAGE

All solid samples (assay pulps, bulk pulps and residues) will be stored for 60 days without charge. Following this samples will be stored at a daily rate until clients written advice regarding return, collection or disposal is received. If storage information is not supplied on the submission, or arranged with the laboratory in writing the default will be to store the samples with the applicable charges. Storage is charged at \$4.00 per m3 per day, expenses related to the return or disposal of samples will also be charged. Current disposal costs including packaging in a Class2 waste disposal facility is charged at \$175.00 per m3.

Samples received as liquids, waters or solutions will be held for 60 days free of charge then disposed of, unless written advice for return or collection is received.

LEGEND	X	= Less than Detection Limit	NA	= Not Analysed
	SNR	= Sample Not Received	UA	= Unable to Assay
	LNR	= Lab Not Received	>	= Value beyond Limit of Method
	DTF	= Result still to come	+	= Extra Sample Received Not Listed
	I/S	= Insufficient Sample for Analysis	HJ	= Photon assay pot is < 50% full, will not analyze

UNITS	ppm for Solid Samples	= mg/Kg
	ppb for Solid Samples	= µg/Kg
	ppm for Liquid Samples	= mg/L
	ppb for Liquid Samples	= µg/L



ELEMENTS	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.05	50	0.5	0.1	0.05	0.01	50	0.02	0.01	0.1
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	MS	MS	MS	MS	OE	MS	MS	MS
SAMPLE NUMBERS										
0001 PFL0924-01	0.07	7.66%	2.5	774.7	1.08	0.07	3.74%	0.11	45.88	31.4
0002 PFL0924-02	0.05	7.43%	1.8	793.8	1.22	0.04	2.71%	0.38	55.38	14.1
0003 PFL0924-03	0.32	4.51%	17.1	586.6	1.14	0.99	21.50%	0.15	30.31	5.4
0004 PFL0924-04	0.05	7.71%	2.0	587.6	1.44	0.18	4.94%	0.06	53.18	10.6
0005 PFL0924-05	0.07	8.72%	4.9	128.7	1.10	0.29	7.52%	0.08	24.45	49.9
0006 PFL0924-06	X	7.85%	0.8	591.6	1.45	0.10	2.83%	0.06	52.67	11.6
0007 PFL0924-07	X	8.37%	1.4	443.3	0.72	0.02	1.97%	0.05	53.81	23.8
0008 PFL0924-08	0.06	8.81%	2.2	658.3	2.14	0.10	1.18%	0.09	70.30	24.9
0009 PFL0924-09	1.98	8.42%	19.9	1618.1	4.12	0.13	4.48%	0.46	124.92	183.8
0010 PFL0924-10	0.08	6.04%	18.0	806.3	1.24	0.25	15.38%	0.22	52.69	13.1
0011 PFL0924-11	X	5.63%	2.3	989.6	0.91	0.06	6.20%	0.20	67.60	55.7
0012 PFL0924-12	0.05	7.98%	0.7	591.0	1.60	0.09	3.13%	0.05	50.92	12.2
0013 PFL0924-13	0.11	8.18%	X	716.4	1.38	0.03	4.80%	0.08	54.40	33.3
0014 PFL0924-14	0.06	8.20%	2.0	464.2	1.43	0.11	3.47%	0.06	47.52	12.9
0015 PFL0924-15	0.08	7.56%	0.8	934.8	1.19	0.02	2.64%	0.07	44.47	12.1
0016 PFL0924-16	0.11	7.11%	0.8	626.5	0.53	0.18	1.37%	0.08	80.14	10.0
0017 PFL0924-17	0.10	7.51%	0.6	487.2	1.46	0.03	3.85%	0.11	45.41	13.5
0018 PFL0924-18	0.20	7.58%	2.1	724.2	1.03	0.07	1.46%	0.06	50.02	10.9
0019 PFL0924-19	0.07	6.55%	3.6	92.3	1.70	0.04	7.14%	0.22	23.63	46.1
0020 PFL0924-20	0.07	8.08%	1.7	529.6	1.13	0.12	3.37%	0.11	59.49	22.3
0021 PFL0924-21	0.08	7.10%	0.7	271.0	1.41	0.15	4.90%	0.17	57.85	18.8
0022 PFL0924-22	0.10	5.85%	7.7	250.1	1.14	0.07	4.89%	0.12	35.45	64.2
0023 PFL0924-23	0.07	5.91%	11.1	236.4	1.26	0.51	17.29%	0.17	50.66	10.6
0024 PFL0924-24	0.12	8.01%	X	548.0	1.17	0.01	3.05%	0.10	60.44	13.3
0025 PFL0924-25	X	1.44%	4.3	135.0	0.39	0.09	27.51%	0.07	16.74	2.5
0026 PFL0924-26	0.09	7.36%	X	106.9	1.21	0.16	7.40%	0.15	38.59	52.9
0027 PFL0924-27	0.06	7.98%	X	127.1	1.02	0.10	6.89%	0.19	31.30	50.1
0028 PFL0924-28	0.09	6.83%	14.7	127.8	1.21	0.04	7.43%	0.18	37.54	63.7
0029 PFL0924-29	0.06	9.47%	0.8	244.3	1.44	0.15	6.56%	0.13	32.93	34.5
0030 PFL0924-30	X	6.46%	1.9	436.8	1.12	0.03	6.22%	0.09	46.84	8.9
0031 PFL0924-31	X	7.55%	0.6	475.6	1.70	0.18	3.09%	0.10	23.71	5.3
0032 PFL0924-32	0.12	6.37%	6.1	387.6	1.00	0.03	1.80%	0.22	59.15	31.7
0033 PFL0924-33	0.11	8.20%	2.6	377.3	1.64	0.13	3.67%	0.12	49.12	35.4
0034 PFL0924-34	0.07	7.59%	28.8	160.2	2.30	0.21	7.42%	0.32	44.01	29.7
0035 PFL0924-35	0.06	7.33%	12.5	301.7	1.05	0.14	5.28%	0.12	37.91	48.5
0036 PFL0924-36	0.70	5.73%	1.1	276.8	1.19	0.04	4.99%	0.25	45.88	49.1
0037 PFL0924-37	0.06	7.35%	X	113.7	1.00	0.16	6.42%	0.14	30.68	42.3
0038 PFL0924-38	0.10	8.70%	X	611.1	1.25	0.01	2.01%	0.05	67.34	10.6
0039 PFL0924-40	0.08	6.74%	X	448.5	1.00	0.14	6.68%	0.15	35.07	39.7
0040 PFL0924-41	0.08	7.89%	1.3	120.2	1.17	0.18	6.58%	0.20	38.22	50.2



ELEMENTS	Cr	Cs	Cu	Fe	Ga	Ge	Hf	In	K	La
UNITS	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	1	0.05	0.5	0.01	0.05	0.1	0.05	0.01	20	0.01
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	OE	MS	MS	OE	MS	MS	MS	MS	OE	MS
SAMPLE NUMBERS										
0001 PFL0924-01	32	0.24	49.7	6.83	18.49	1.3	2.29	0.05	1.54%	21.43
0002 PFL0924-02	42	0.06	27.8	1.71	17.62	0.8	3.45	0.03	1.26%	28.23
0003 PFL0924-03	8	0.78	123.4	2.67	10.45	0.8	2.22	0.02	1.96%	15.16
0004 PFL0924-04	24	0.86	16.3	3.10	18.58	1.0	3.01	0.03	2.70%	27.06
0005 PFL0924-05	210	1.11	19.6	6.83	17.01	1.4	1.53	0.03	7044	10.39
0006 PFL0924-06	51	0.09	19.7	3.84	19.58	0.9	2.90	0.03	1.63%	26.16
0007 PFL0924-07	117	1.63	24.8	4.27	17.05	1.0	1.63	0.02	1.32%	27.96
0008 PFL0924-08	29	1.94	38.0	2.85	20.49	1.4	4.22	0.03	3.97%	32.88
0009 PFL0924-09	21	2.15	151.4	4.37	20.51	1.1	5.49	0.04	1.18%	56.58
0010 PFL0924-10	24	0.46	69.2	3.71	14.10	1.0	2.09	0.03	1.92%	24.60
0011 PFL0924-11	364	2.04	100.6	8.48	14.55	1.4	2.21	0.06	2.42%	33.67
0012 PFL0924-12	49	0.12	25.0	4.07	19.61	0.8	2.98	0.03	1.41%	26.55
0013 PFL0924-13	60	0.19	70.8	5.67	19.06	1.2	2.36	0.04	1.83%	26.62
0014 PFL0924-14	20	0.13	22.0	3.86	19.77	0.9	3.42	0.03	8354	25.51
0015 PFL0924-15	45	0.09	24.6	2.80	17.87	0.7	2.96	0.02	1.69%	24.57
0016 PFL0924-16	29	0.53	37.4	3.07	16.26	0.7	3.39	0.01	2.22%	42.34
0017 PFL0924-17	31	0.34	40.5	5.62	18.76	1.0	2.53	0.04	2.05%	22.82
0018 PFL0924-18	283	0.83	57.5	4.26	18.42	1.1	4.36	0.04	8911	27.01
0019 PFL0924-19	72	0.09	65.5	9.71	16.69	1.5	1.38	0.07	2161	9.81
0020 PFL0924-20	48	0.41	37.9	6.12	19.92	0.8	3.08	0.03	1.73%	30.69
0021 PFL0924-21	19	0.15	58.9	11.44	18.27	1.1	2.19	0.05	6528	27.65
0022 PFL0924-22	768	2.77	138.8	7.35	14.01	1.1	1.79	0.04	1.02%	16.98
0023 PFL0924-23	18	0.47	39.2	2.91	13.61	0.7	2.32	0.02	9028	24.90
0024 PFL0924-24	26	0.38	38.8	4.57	19.35	0.9	3.22	0.04	1.30%	31.57
0025 PFL0924-25	2	0.64	0.7	0.87	3.39	0.4	0.64	X	4821	8.60
0026 PFL0924-26	80	0.13	87.1	12.10	20.33	1.6	1.45	0.09	2757	13.46
0027 PFL0924-27	241	X	72.5	9.98	18.14	1.7	1.25	0.09	1631	11.35
0028 PFL0924-28	542	0.09	97.0	9.76	17.92	1.4	1.77	0.09	3695	12.72
0029 PFL0924-29	176	0.17	17.4	6.58	20.14	1.3	1.14	0.05	5015	14.75
0030 PFL0924-30	14	0.20	9.8	4.67	14.48	0.9	2.13	0.03	1.29%	23.48
0031 PFL0924-31	13	0.20	7.4	1.70	18.68	1.1	1.63	0.01	1.66%	13.10
0032 PFL0924-32	322	0.57	67.9	6.09	17.38	1.3	3.98	0.05	1.10%	29.78
0033 PFL0924-33	141	0.56	72.1	6.15	20.65	1.2	4.32	0.05	8469	23.25
0034 PFL0924-34	131	0.20	42.1	5.66	17.71	1.4	2.28	0.05	2680	20.16
0035 PFL0924-35	260	0.65	50.3	8.22	18.85	1.2	2.54	0.07	8290	17.72
0036 PFL0924-36	129	0.86	279.1	12.43	15.02	1.4	1.82	0.09	9470	19.60
0037 PFL0924-37	196	0.09	65.7	8.31	17.45	1.6	1.42	0.07	2698	12.74
0038 PFL0924-38	35	0.50	15.5	3.17	19.59	0.8	3.77	0.02	1.81%	35.44
0039 PFL0924-40	158	0.13	67.4	7.75	16.65	1.3	1.54	0.05	4832	15.36
0040 PFL0924-41	196	0.12	110.8	9.80	19.25	1.5	1.51	0.08	2893	15.38



ELEMENTS	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.1	20	1	0.1	20	0.05	0.5	50	0.5	0.05
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	OE	MS	OE	MS	MS	OE	MS	MS
SAMPLE NUMBERS										
0001 PFL0924-01	13.5	1.57%	1180	1.0	2.47%	8.21	36.4	1035	16.7	27.99
0002 PFL0924-02	10.6	3521	617	1.1	3.20%	7.64	37.8	696	10.6	21.36
0003 PFL0924-03	4.3	7983	5352	1.4	7676	4.64	8.9	283	9.9	59.62
0004 PFL0924-04	11.6	8664	1065	1.4	1.50%	6.44	19.7	691	14.5	95.58
0005 PFL0924-05	17.8	4.59%	1201	1.1	2.49%	4.38	175.6	190	8.7	17.84
0006 PFL0924-06	10.1	3863	657	0.9	2.67%	7.07	31.3	792	12.2	37.44
0007 PFL0924-07	17.7	1.25%	501	0.5	3.12%	3.63	115.1	460	11.9	29.43
0008 PFL0924-08	21.9	1997	955	1.2	5958	8.56	93.2	401	20.5	128.95
0009 PFL0924-09	12.4	1609	7383	3.2	7633	9.58	150.0	579	25.6	50.65
0010 PFL0924-10	10.1	1.45%	3404	2.9	1.38%	3.64	26.7	860	13.6	52.84
0011 PFL0924-11	15.3	3.63%	1324	0.5	1.82%	11.83	185.2	472	14.0	98.00
0012 PFL0924-12	14.8	5137	852	1.0	2.69%	6.63	32.9	788	12.0	35.39
0013 PFL0924-13	19.1	2.17%	1211	1.3	2.65%	5.00	67.3	817	12.0	43.70
0014 PFL0924-14	16.1	9532	682	0.6	2.78%	6.66	17.9	683	15.1	16.57
0015 PFL0924-15	13.6	2914	580	1.1	2.54%	6.94	38.2	734	13.8	36.71
0016 PFL0924-16	19.5	6221	551	1.4	2.78%	6.00	17.7	352	22.1	60.99
0017 PFL0924-17	13.8	1.43%	2028	1.2	1.80%	5.23	27.7	683	14.2	49.70
0018 PFL0924-18	10.9	4149	90	0.9	1.59%	6.63	53.2	130	22.3	69.03
0019 PFL0924-19	16.0	3.27%	2047	0.7	1.44%	6.55	66.5	553	5.2	1.81
0020 PFL0924-20	13.8	1.29%	1375	2.1	1.91%	7.08	44.1	737	13.4	48.80
0021 PFL0924-21	9.4	1.78%	6084	1.7	1.17%	6.55	31.3	1007	7.7	17.62
0022 PFL0924-22	13.9	5.44%	1427	1.0	1.86%	7.95	550.9	814	6.8	29.12
0023 PFL0924-23	7.5	6385	3583	1.1	1.41%	6.88	22.0	647	11.2	26.95
0024 PFL0924-24	16.3	9089	1424	1.1	2.62%	6.56	23.4	820	14.9	33.81
0025 PFL0924-25	1.3	3522	6520	0.8	1470	1.59	3.7	122	6.4	18.61
0026 PFL0924-26	14.9	3.98%	2153	1.2	1.81%	9.13	77.7	652	3.6	2.47
0027 PFL0924-27	12.4	4.33%	1523	1.2	1.81%	6.40	111.7	451	3.4	1.06
0028 PFL0924-28	29.4	4.85%	1627	0.8	1.50%	6.58	305.2	508	3.6	4.63
0029 PFL0924-29	11.3	3.36%	1468	1.7	2.49%	3.52	89.5	249	8.2	9.30
0030 PFL0924-30	21.1	2.68%	3335	0.8	2.15%	5.08	16.6	572	9.4	35.67
0031 PFL0924-31	15.4	4999	436	0.8	2.27%	2.38	8.7	314	11.8	50.78
0032 PFL0924-32	17.3	2.54%	812	2.0	1.51%	7.75	160.7	190	19.7	58.34
0033 PFL0924-33	16.3	2.21%	936	4.1	2.17%	10.56	89.2	1233	16.2	38.39
0034 PFL0924-34	13.4	2.71%	1021	1.3	1.50%	5.92	89.1	1169	10.4	4.18
0035 PFL0924-35	13.7	3.45%	1398	0.7	1.52%	5.75	175.7	726	6.8	27.14
0036 PFL0924-36	15.4	3.83%	2490	1.8	1.54%	6.25	123.2	958	5.9	35.90
0037 PFL0924-37	14.6	3.69%	1328	2.7	1.61%	6.17	99.2	630	4.6	3.80
0038 PFL0924-38	18.2	6383	639	0.9	2.65%	5.90	26.8	444	17.3	46.86
0039 PFL0924-40	9.9	2.73%	2144	1.1	1.64%	6.52	86.5	1000	6.3	11.03
0040 PFL0924-41	16.9	4.01%	1536	0.6	1.76%	7.82	104.4	1149	34.1	3.74



ELEMENTS	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.002	50	0.05	0.1	0.5	0.1	0.05	0.01	0.2	0.01
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	MS	MS	MS	MS	MS	MS	MS	MS
SAMPLE NUMBERS										
0001 PFL0924-01	X	1047	0.22	23.0	0.6	0.9	275.90	0.51	X	1.82
0002 PFL0924-02	X	425	X	8.6	X	0.7	212.85	0.60	X	5.99
0003 PFL0924-03	X	179	0.89	3.6	X	0.7	230.58	0.37	X	10.85
0004 PFL0924-04	X	253	0.11	8.5	0.6	0.7	210.02	0.47	X	5.24
0005 PFL0924-05	X	454	0.29	23.4	X	0.9	207.52	0.38	X	3.22
0006 PFL0924-06	X	X	0.13	12.0	0.5	0.7	270.31	0.47	X	1.53
0007 PFL0924-07	X	162	0.14	10.7	X	0.4	236.82	0.21	X	7.49
0008 PFL0924-08	X	154	0.46	9.6	0.7	1.1	91.60	1.01	X	11.47
0009 PFL0924-09	X	947	1.87	8.1	1.0	1.9	87.40	0.83	X	32.81
0010 PFL0924-10	0.002	1592	0.75	9.7	X	0.8	342.23	0.26	X	5.42
0011 PFL0924-11	X	63	0.17	27.6	0.8	0.9	251.41	0.79	X	8.93
0012 PFL0924-12	X	311	X	11.7	X	0.6	283.50	0.36	X	1.90
0013 PFL0924-13	X	3004	X	18.6	X	0.9	483.17	0.24	X	2.70
0014 PFL0924-14	X	77	0.05	9.6	X	0.4	252.85	0.49	X	3.39
0015 PFL0924-15	X	590	0.08	6.4	X	0.5	350.15	0.47	X	1.42
0016 PFL0924-16	X	1395	X	7.6	0.6	0.2	179.22	0.37	X	15.45
0017 PFL0924-17	X	1163	X	11.6	0.5	0.7	212.85	0.26	X	1.81
0018 PFL0924-18	X	215	X	13.3	0.8	0.3	102.83	0.39	X	9.30
0019 PFL0924-19	X	1641	0.26	31.5	0.7	1.0	150.34	0.87	X	1.25
0020 PFL0924-20	X	1197	0.27	14.2	0.8	0.6	266.32	0.43	X	6.82
0021 PFL0924-21	X	2324	X	11.4	0.9	1.0	160.31	0.39	X	3.19
0022 PFL0924-22	X	2812	0.07	11.4	0.6	0.5	218.12	0.50	X	0.94
0023 PFL0924-23	X	1060	0.52	5.8	X	1.0	216.28	0.59	X	6.70
0024 PFL0924-24	X	2195	X	9.5	X	0.5	232.86	0.41	X	7.08
0025 PFL0924-25	X	77	0.21	1.4	X	0.4	168.06	0.13	X	2.08
0026 PFL0924-26	X	3096	X	41.8	1.3	1.3	213.48	0.53	X	0.32
0027 PFL0924-27	X	X	X	40.8	0.7	1.1	140.56	0.36	X	0.18
0028 PFL0924-28	X	1023	X	37.4	1.1	1.3	153.75	0.38	X	0.49
0029 PFL0924-29	X	246	0.08	22.4	X	0.5	261.71	0.20	X	0.79
0030 PFL0924-30	X	492	0.23	6.8	X	0.5	203.22	0.35	X	5.41
0031 PFL0924-31	X	419	0.07	3.3	X	0.3	200.22	0.16	X	0.99
0032 PFL0924-32	X	2955	X	18.3	0.6	0.1	155.41	0.45	X	13.77
0033 PFL0924-33	0.002	2427	X	21.4	0.9	0.2	196.38	0.87	X	3.52
0034 PFL0924-34	X	1133	0.89	18.0	X	1.3	296.63	0.59	X	4.50
0035 PFL0924-35	X	914	0.37	28.7	0.7	1.1	245.27	0.36	X	1.83
0036 PFL0924-36	X	2.79%	X	19.1	1.0	1.0	182.19	0.39	0.2	1.51
0037 PFL0924-37	0.002	968	X	32.2	X	1.0	125.74	0.36	X	0.58
0038 PFL0924-38	X	514	0.06	8.3	X	0.5	263.29	0.40	X	10.38
0039 PFL0924-40	X	2293	X	26.8	0.6	0.2	196.91	0.38	X	0.45
0040 PFL0924-41	0.002	1685	X	36.8	1.2	1.3	139.58	0.51	X	1.02



ELEMENTS	Ti	Tl	U	V	W	Y	Zn	Zr
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	5	0.02	0.01	1	0.1	0.05	1	0.1
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	OE	MS	MS	OE	MS	MS	MS	MS
SAMPLE NUMBERS								
0001 PFL0924-01	5658	0.13	0.59	173	1.7	16.69	120	80.2
0002 PFL0924-02	3182	0.09	1.47	56	1.1	10.41	126	126.1
0003 PFL0924-03	1791	0.23	2.34	27	5.0	7.33	51	68.7
0004 PFL0924-04	3107	0.43	1.18	60	1.3	10.20	59	112.4
0005 PFL0924-05	3076	0.11	1.79	133	2.5	12.51	71	48.9
0006 PFL0924-06	3533	0.16	0.50	80	0.4	13.71	65	112.9
0007 PFL0924-07	2531	0.14	0.55	62	0.5	9.10	62	61.1
0008 PFL0924-08	3506	0.60	2.25	60	74.1	20.78	118	151.6
0009 PFL0924-09	3842	0.28	7.67	115	26.2	28.35	269	185.9
0010 PFL0924-10	1969	0.21	1.43	49	109.0	11.54	79	74.3
0011 PFL0924-11	8229	0.42	0.53	164	1.5	11.84	108	79.5
0012 PFL0924-12	3631	0.17	0.55	71	4.0	9.90	71	119.5
0013 PFL0924-13	4250	0.24	0.38	128	2.1	12.13	82	93.8
0014 PFL0924-14	3727	0.07	0.60	76	2.9	9.31	62	126.6
0015 PFL0924-15	3426	0.19	0.51	83	0.6	5.92	56	115.8
0016 PFL0924-16	3483	0.32	1.11	68	0.2	10.28	56	123.7
0017 PFL0924-17	3202	0.23	0.47	80	4.3	13.70	100	94.1
0018 PFL0924-18	2766	0.34	1.45	79	3.7	18.43	58	136.1
0019 PFL0924-19	7079	X	0.85	260	1.0	22.34	146	46.6
0020 PFL0924-20	4675	0.22	0.75	100	0.6	17.24	91	118.8
0021 PFL0924-21	3306	0.10	0.49	69	0.3	21.75	141	81.6
0022 PFL0924-22	4378	0.20	0.35	90	1.4	7.51	86	68.0
0023 PFL0924-23	2773	0.12	2.93	44	2.4	11.61	66	84.4
0024 PFL0924-24	3632	0.18	1.00	77	1.1	11.91	84	122.0
0025 PFL0924-25	648	0.10	0.77	8	3.2	4.99	31	20.8
0026 PFL0924-26	9551	0.02	0.15	322	0.5	34.49	124	35.6
0027 PFL0924-27	6301	X	0.12	249	X	29.60	110	39.8
0028 PFL0924-28	6232	0.03	0.20	227	1.0	29.75	131	55.6
0029 PFL0924-29	2727	0.05	0.25	117	0.6	14.90	98	37.5
0030 PFL0924-30	2449	0.16	0.94	48	0.5	9.25	67	82.5
0031 PFL0924-31	1610	0.31	0.37	26	21.1	2.31	57	58.2
0032 PFL0924-32	3574	0.35	1.65	114	0.2	24.02	108	137.8
0033 PFL0924-33	6109	0.22	1.09	173	0.3	11.48	111	159.5
0034 PFL0924-34	3506	0.03	1.96	115	1.3	14.63	101	79.5
0035 PFL0924-35	5868	0.13	0.60	192	1.4	19.20	102	87.3
0036 PFL0924-36	4193	0.17	0.47	95	1.7	13.48	150	63.0
0037 PFL0924-37	5060	0.02	0.30	201	51.8	23.94	94	46.4
0038 PFL0924-38	3189	0.22	1.24	56	0.4	11.75	56	141.2
0039 PFL0924-40	6715	0.07	0.27	183	0.2	19.88	120	54.3
0040 PFL0924-41	7150	0.02	0.30	249	0.3	27.35	131	52.1



ELEMENTS	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.05	50	0.5	0.1	0.05	0.01	50	0.02	0.01	0.1
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	MS	MS	MS	MS	OE	MS	MS	MS
SAMPLE NUMBERS										
0041 PFL0924-42	0.05	7.47%	0.6	87.2	1.09	0.02	7.19%	0.12	32.92	46.0
0042 PFL0924-43	0.05	7.13%	0.7	360.4	0.69	0.26	6.94%	0.11	32.17	54.6
0043 PFL0924-44	X	7.09%	0.6	384.0	0.82	0.06	6.62%	0.06	30.39	58.6
0044 PFL0924-45	0.07	7.39%	0.9	238.4	1.63	0.09	4.46%	0.12	34.26	70.4
0045 PFL0924-46	X	7.89%	4.0	1043.2	1.69	0.07	2.14%	0.08	74.18	8.7
0046 PFL0924-47	0.06	8.45%	1.0	224.8	1.71	0.17	6.57%	0.08	43.23	45.8
0047 PFL0924-48	1.00	9.97%	1.2	616.8	1.11	0.02	489	X	30.48	7.7
0048 PFL0924-49	0.07	7.50%	1.2	382.0	1.20	0.12	4.91%	0.06	65.10	20.6
0049 PFL0924-50	0.21	8.32%	X	649.3	1.61	X	2.07%	0.03	47.18	12.5
0050 PFL0924-51	0.07	8.03%	0.8	666.7	1.34	0.09	3.45%	0.03	42.29	11.6
0051 PFL0924-52	3.44	7.82%	5.5	180.8	1.75	0.02	8.36%	0.24	55.50	18.8
0052 PFL0924-53	0.11	7.38%	6.6	458.1	1.72	0.12	3.45%	0.11	54.51	11.0
0053 PFL0924-54	0.07	7.80%	1.7	574.0	1.60	0.01	4.13%	0.09	49.67	13.7
0054 PFL0924-55	0.08	8.46%	3.3	228.8	1.42	0.14	2.77%	0.06	62.60	19.8
0055 PFL0924-56	0.11	7.42%	1.6	1134.4	1.68	0.02	4.49%	0.18	76.95	39.4
0056 PFL0924-57	0.08	7.86%	X	676.3	1.16	0.10	3.01%	0.05	52.66	10.6
0057 PFL0924-58	0.12	8.15%	4.3	920.7	1.61	0.03	4.14%	0.07	35.52	20.4
0058 PFL0924-59	0.25	8.19%	8.2	746.9	1.82	0.11	5.71%	0.10	56.44	23.3
0059 PFL0924-60	X	7.82%	0.8	715.0	1.25	0.02	3.95%	0.06	49.83	10.1
0060 PFL0924-61	0.08	8.45%	2.6	619.6	1.32	0.09	3.24%	0.08	56.76	21.1
0061 PFL0924-62	0.08	8.67%	1.4	353.7	1.66	0.02	5.44%	0.11	58.13	39.6
0062 PFL0924-63	0.52	9.07%	5.8	1178.3	1.43	0.06	1225	X	161.90	11.3
0063 PFL0924-64	0.13	7.69%	2.6	675.3	0.72	X	7993	0.09	67.44	25.5
0064 PFL0924-65	0.08	8.66%	4.7	493.5	1.30	0.19	6.87%	0.06	73.78	39.4
0065 PFL0924-66	0.10	8.78%	X	65.6	0.55	0.11	8.49%	0.09	14.74	57.2
0066 PFL0924-67	0.06	8.03%	3.2	445.6	1.74	0.13	6.25%	0.18	53.09	14.5
0067 PFL0924-68	0.09	8.51%	1.5	576.1	1.10	0.03	2.47%	0.17	75.86	24.9
0068 PFL0924-69	2.78	12.63%	3.7	368.8	2.22	0.06	790	X	111.68	7.0
0069 PFL0924-70	0.51	7.86%	X	180.8	0.84	0.04	5.84%	0.10	20.85	58.1
0070 PFL0924-71	0.12	7.96%	X	465.8	0.96	0.07	3.62%	0.08	52.07	28.2
0071 PFL0924-72	0.14	7.48%	X	99.3	1.14	0.03	7.51%	0.26	30.80	53.0
0072 PFL0924-73	0.30	12.26%	13.7	23.0	0.75	0.16	193	X	10.01	9.0
0073 PFL0924-74	1.72	12.80%	4.4	51.0	0.66	0.10	153	X	13.13	9.8
0074 PFL0924-75	2.02	4.09%	39.5	174.2	2.33	0.28	7570	1.23	74.05	70.0
0075 PFL0924-76	3.43	6.25%	7.7	191.2	1.19	0.04	1.00%	1.10	33.94	29.9
0076 PFL0924-77	4.63	10.49%	16.0	67.1	0.92	0.17	499	0.03	27.67	8.1
0077 PFL0924-78	0.68	10.57%	1.7	335.7	0.59	0.03	146	X	163.01	4.0
0078 PFL0924-79	0.15	7.72%	4.4	597.8	0.92	0.01	2.10%	0.06	57.71	23.0
0079 PFL0924-80	0.06	7.62%	0.5	392.6	1.43	0.05	2.97%	0.07	46.21	11.6
0080 PFL0924-81	0.09	8.48%	2.2	222.1	1.18	0.08	6.54%	0.08	62.60	37.4



ELEMENTS	Cr	Cs	Cu	Fe	Ga	Ge	Hf	In	K	La
UNITS	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	1	0.05	0.5	0.01	0.05	0.1	0.05	0.01	20	0.01
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	OE	MS	MS	OE	MS	MS	MS	MS	OE	MS
SAMPLE NUMBERS										
0041 PFL0924-42	243	X	47.3	8.81	16.99	1.7	1.72	0.07	2795	13.10
0042 PFL0924-43	145	0.15	45.7	10.27	17.01	1.4	2.20	0.08	9507	14.29
0043 PFL0924-44	132	0.22	62.9	10.46	18.17	1.6	2.48	0.08	1.11%	13.36
0044 PFL0924-45	122	0.29	42.2	9.60	20.37	1.2	2.63	0.07	6892	15.71
0045 PFL0924-46	40	0.21	1.8	2.24	19.75	0.9	3.11	0.02	2.55%	38.97
0046 PFL0924-47	176	0.32	37.5	7.07	19.67	1.3	1.35	0.05	7286	17.94
0047 PFL0924-48	73	0.46	54.8	4.67	24.80	1.0	4.21	0.04	1.27%	22.18
0048 PFL0924-49	25	0.21	53.0	7.79	20.12	1.0	3.43	0.03	1.27%	33.20
0049 PFL0924-50	22	0.37	21.4	2.37	20.36	1.0	3.12	0.02	2.54%	26.76
0050 PFL0924-51	17	0.16	6.4	2.79	19.43	0.9	2.99	0.02	1.98%	22.62
0051 PFL0924-52	25	0.15	33.3	5.43	20.09	0.8	2.29	0.04	5345	27.97
0052 PFL0924-53	29	0.62	34.0	3.72	17.89	1.0	3.29	0.03	3.36%	28.03
0053 PFL0924-54	21	0.18	13.7	3.63	19.37	0.9	2.50	0.03	1.44%	24.37
0054 PFL0924-55	43	0.21	60.9	4.14	23.24	0.8	2.32	0.04	6099	32.23
0055 PFL0924-56	52	0.88	107.9	11.07	22.76	1.4	2.06	0.06	2.94%	38.27
0056 PFL0924-57	44	0.19	22.9	3.02	19.85	0.8	2.97	0.02	1.67%	30.23
0057 PFL0924-58	23	0.33	72.7	4.37	20.01	0.9	1.70	0.03	1.73%	19.01
0058 PFL0924-59	36	0.40	74.3	4.74	20.39	1.0	2.94	0.04	1.41%	27.47
0059 PFL0924-60	29	0.19	6.9	3.57	18.72	0.9	2.98	0.02	1.85%	27.01
0060 PFL0924-61	61	0.26	53.7	4.03	20.82	0.8	2.87	0.03	1.91%	32.21
0061 PFL0924-62	204	0.47	21.7	8.03	22.32	1.4	1.43	0.06	8537	26.10
0062 PFL0924-63	54	0.29	78.8	4.75	22.35	1.0	2.53	0.04	2.50%	83.40
0063 PFL0924-64	32	0.13	17.7	4.16	17.87	0.8	3.39	0.02	2.39%	38.16
0064 PFL0924-65	204	0.67	20.5	6.84	21.09	1.2	1.45	0.04	1.16%	32.60
0065 PFL0924-66	221	0.07	59.5	7.50	15.99	1.5	1.33	0.03	5153	7.15
0066 PFL0924-67	38	0.71	10.2	3.94	19.32	1.1	2.58	0.04	8446	26.76
0067 PFL0924-68	98	1.39	29.6	4.92	20.47	0.7	3.08	0.03	1.41%	39.08
0068 PFL0924-69	269	0.94	148.1	6.19	30.00	1.6	2.93	0.06	1.02%	57.37
0069 PFL0924-70	239	0.18	80.3	9.17	17.01	1.5	1.42	0.05	4304	8.92
0070 PFL0924-71	78	0.26	43.7	5.55	19.40	1.0	2.83	0.04	8842	30.70
0071 PFL0924-72	129	0.12	64.9	11.74	19.61	1.4	1.32	0.09	3091	12.54
0072 PFL0924-73	212	0.57	21.5	9.02	28.69	1.8	3.53	0.09	767	5.75
0073 PFL0924-74	240	0.28	58.4	9.88	30.79	1.6	3.14	0.07	1079	6.33
0074 PFL0924-75	32	0.74	39.2	8.53	11.27	0.6	2.51	0.02	7530	43.89
0075 PFL0924-76	27	1.49	54.3	2.40	15.41	1.1	2.40	0.02	1.24%	17.59
0076 PFL0924-77	300	0.44	31.1	13.36	27.37	1.3	3.69	0.12	1811	9.43
0077 PFL0924-78	220	0.83	48.4	4.13	28.58	1.3	4.06	0.04	6349	144.09
0078 PFL0924-79	73	0.59	54.5	5.89	18.85	0.9	2.66	0.03	1.64%	32.27
0079 PFL0924-80	28	0.40	22.1	4.60	18.45	1.0	2.87	0.03	1.51%	25.77
0080 PFL0924-81	128	0.29	49.6	6.34	20.36	1.1	1.55	0.05	6642	28.61



ELEMENTS	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.1	20	1	0.1	20	0.05	0.5	50	0.5	0.05
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	OE	MS	OE	MS	MS	OE	MS	MS
SAMPLE NUMBERS										
0041 PFL0924-42	17.8	4.03%	1361	0.5	1.69%	5.98	107.1	477	5.8	1.84
0042 PFL0924-43	23.6	4.08%	1527	0.6	2.04%	7.99	98.0	723	5.8	54.19
0043 PFL0924-44	28.7	4.03%	1621	0.5	1.96%	8.54	119.4	774	3.8	62.19
0044 PFL0924-45	39.5	3.26%	1533	1.4	2.40%	7.92	145.1	829	6.7	31.35
0045 PFL0924-46	8.8	8357	321	3.8	3.32%	3.61	27.1	637	23.8	77.75
0046 PFL0924-47	14.9	4.54%	1524	1.2	2.30%	4.74	161.4	352	11.6	21.40
0047 PFL0924-48	6.4	1111	291	0.8	2386	9.95	30.7	268	12.3	56.06
0048 PFL0924-49	11.3	1.22%	3640	1.8	1.55%	7.00	35.3	734	12.0	34.35
0049 PFL0924-50	15.2	4506	382	0.9	1.41%	5.49	20.6	500	18.8	85.31
0050 PFL0924-51	16.3	9522	698	0.6	2.65%	5.66	15.5	793	12.4	58.64
0051 PFL0924-52	7.7	7362	2831	1.3	1.78%	7.82	35.4	819	17.6	8.20
0052 PFL0924-53	25.9	1.78%	1203	4.2	1.45%	5.74	20.9	722	48.8	85.14
0053 PFL0924-54	9.6	1.50%	1641	0.6	2.62%	5.39	23.9	880	12.5	27.92
0054 PFL0924-55	29.0	9301	847	1.2	3.33%	9.57	44.5	1140	8.1	16.80
0055 PFL0924-56	8.4	1.75%	2038	1.7	1.87%	12.65	50.1	1424	13.1	70.27
0056 PFL0924-57	14.7	4908	622	1.2	2.26%	6.11	21.0	830	15.4	42.71
0057 PFL0924-58	12.3	9206	1314	1.2	2.29%	9.48	41.2	908	12.3	36.63
0058 PFL0924-59	14.6	1.37%	1778	1.1	2.45%	7.76	54.3	878	13.0	29.60
0059 PFL0924-60	7.8	5913	986	0.9	2.97%	8.22	18.7	680	14.9	44.03
0060 PFL0924-61	14.1	9103	758	1.3	2.78%	8.12	56.2	879	15.6	40.08
0061 PFL0924-62	18.5	3.93%	1858	2.6	2.44%	6.33	147.4	1597	10.4	30.31
0062 PFL0924-63	7.0	2774	622	0.9	9834	7.02	50.3	384	13.8	86.84
0063 PFL0924-64	18.1	8008	946	0.7	3.39%	7.41	59.2	791	24.0	58.89
0064 PFL0924-65	25.9	3.96%	1363	1.5	2.23%	6.31	142.4	2751	8.8	46.48
0065 PFL0924-66	12.9	5.23%	1215	2.5	1.62%	2.75	202.9	205	3.7	8.69
0066 PFL0924-67	14.8	1.48%	1973	1.1	2.25%	5.96	45.2	1246	11.3	22.64
0067 PFL0924-68	42.0	2.09%	995	0.8	2.97%	8.60	91.5	960	25.8	48.10
0068 PFL0924-69	10.5	1161	225	3.4	1735	8.28	52.3	770	44.3	28.74
0069 PFL0924-70	16.3	3.87%	1507	1.2	2.24%	3.65	85.2	219	3.2	4.22
0070 PFL0924-71	21.2	1.37%	1271	1.4	2.36%	6.60	65.2	770	10.9	27.46
0071 PFL0924-72	12.4	3.29%	2896	0.9	1.73%	7.32	86.4	669	4.5	2.16
0072 PFL0924-73	26.3	719	131	3.0	499	10.38	52.6	80	15.1	6.28
0073 PFL0924-74	16.4	1064	109	2.5	1638	8.69	47.2	125	12.3	6.23
0074 PFL0924-75	4.9	1.11%	4236	2.5	6418	4.38	252.2	615	28.8	30.26
0075 PFL0924-76	17.8	6372	660	0.9	7254	5.04	146.2	417	6.2	58.49
0076 PFL0924-77	18.9	589	91	3.4	694	9.53	56.4	127	21.5	9.92
0077 PFL0924-78	8.2	445	139	0.8	1007	12.75	23.3	306	83.4	18.39
0078 PFL0924-79	16.5	1.55%	1168	1.1	3.40%	7.76	57.3	674	11.0	22.79
0079 PFL0924-80	15.9	5596	1699	1.4	1.35%	6.84	23.7	822	8.7	47.11
0080 PFL0924-81	22.3	3.19%	1208	1.4	2.02%	5.87	123.9	1442	8.1	19.74



ELEMENTS	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.002	50	0.05	0.1	0.5	0.1	0.05	0.01	0.2	0.01
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	MS	MS	MS	MS	MS	MS	MS	MS
SAMPLE NUMBERS										
0041 PFL0924-42	X	677	X	34.8	0.6	1.2	122.26	0.37	X	0.71
0042 PFL0924-43	0.002	3682	0.05	42.2	0.7	0.9	201.60	0.49	X	1.84
0043 PFL0924-44	0.003	2253	X	43.7	0.7	1.0	204.80	0.53	X	1.99
0044 PFL0924-45	X	1630	X	42.6	0.6	1.0	416.11	0.47	X	3.72
0045 PFL0924-46	X	187	0.25	4.8	0.5	0.7	616.34	0.16	X	11.44
0046 PFL0924-47	0.002	568	X	22.7	X	1.3	216.87	0.36	X	1.13
0047 PFL0924-48	X	437	0.07	14.4	0.9	0.6	56.27	0.68	X	4.50
0048 PFL0924-49	X	1234	0.06	15.1	X	0.9	205.82	0.45	X	7.83
0049 PFL0924-50	X	279	X	7.3	0.6	0.5	236.21	0.30	X	3.55
0050 PFL0924-51	X	146	X	7.3	X	0.6	329.81	0.27	X	2.17
0051 PFL0924-52	X	1490	0.12	12.3	0.7	1.7	169.18	0.55	X	6.06
0052 PFL0924-53	0.004	2077	0.22	8.1	X	0.9	117.86	0.42	X	6.13
0053 PFL0924-54	X	322	0.07	9.6	0.6	0.4	309.75	0.33	X	2.94
0054 PFL0924-55	X	1929	0.07	8.1	X	0.6	327.58	0.42	X	3.98
0055 PFL0924-56	X	3240	X	6.9	0.9	2.3	668.15	0.55	X	2.03
0056 PFL0924-57	X	635	X	6.7	X	0.5	300.45	0.35	X	3.85
0057 PFL0924-58	X	1269	0.10	10.6	X	0.5	341.48	0.60	X	1.62
0058 PFL0924-59	X	1710	0.31	14.0	X	1.0	309.24	0.59	X	5.01
0059 PFL0924-60	X	X	0.07	9.3	X	0.8	286.83	0.59	X	4.53
0060 PFL0924-61	X	311	0.05	10.0	0.6	0.6	286.04	0.50	X	4.45
0061 PFL0924-62	X	753	0.07	18.4	0.9	0.9	271.00	0.35	X	1.81
0062 PFL0924-63	X	151	0.15	12.9	1.5	1.0	149.49	0.40	X	9.40
0063 PFL0924-64	X	X	X	11.3	X	0.4	201.95	0.44	X	10.78
0064 PFL0924-65	X	610	0.24	18.6	0.9	1.1	304.12	0.37	X	3.09
0065 PFL0924-66	X	542	X	25.0	X	0.6	178.63	0.23	X	0.45
0066 PFL0924-67	X	283	0.17	8.8	X	0.9	238.88	0.56	X	5.51
0067 PFL0924-68	X	968	0.09	8.9	X	0.4	264.66	0.43	X	13.28
0068 PFL0924-69	0.014	136	0.75	25.3	0.8	1.0	56.07	0.51	X	4.33
0069 PFL0924-70	X	X	X	34.3	X	0.8	145.87	0.22	X	0.35
0070 PFL0924-71	X	3719	X	13.2	X	0.4	309.73	0.33	X	6.48
0071 PFL0924-72	0.002	3991	X	38.3	1.0	1.4	251.15	0.45	X	0.19
0072 PFL0924-73	X	361	0.25	33.8	2.5	1.5	5.79	0.68	X	18.59
0073 PFL0924-74	X	413	0.21	38.4	2.0	1.1	4.78	0.52	X	10.90
0074 PFL0924-75	0.003	100	2.77	4.2	0.5	3.7	51.09	0.36	X	9.76
0075 PFL0924-76	X	397	1.26	6.4	X	1.4	67.06	0.28	X	2.39
0076 PFL0924-77	X	207	0.34	24.2	1.0	1.2	18.03	0.68	X	18.29
0077 PFL0924-78	X	328	0.08	31.4	0.8	1.0	84.27	0.91	X	5.13
0078 PFL0924-79	X	2685	X	11.0	X	0.6	344.87	0.42	X	6.15
0079 PFL0924-80	X	907	X	10.0	X	0.3	205.43	0.38	X	3.23
0080 PFL0924-81	X	1454	0.12	18.1	0.7	1.0	194.84	0.30	X	3.11



ELEMENTS	Ti	Tl	U	V	W	Y	Zn	Zr
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	5	0.02	0.01	1	0.1	0.05	1	0.1
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	OE	MS	MS	OE	MS	MS	MS	MS
SAMPLE NUMBERS								
0041 PFL0924-42	5230	X	0.25	220	0.2	26.53	96	56.7
0042 PFL0924-43	9577	0.21	0.42	349	0.4	23.80	102	80.6
0043 PFL0924-44	9743	0.24	0.45	358	0.2	25.36	110	86.2
0044 PFL0924-45	9308	0.13	0.81	339	7.1	23.42	151	96.0
0045 PFL0924-46	1967	0.39	0.89	40	2.3	7.80	44	126.4
0046 PFL0924-47	2678	0.11	0.32	115	0.4	13.73	103	39.0
0047 PFL0924-48	4886	0.29	0.82	104	11.7	5.47	64	159.2
0048 PFL0924-49	4288	0.17	1.01	91	0.8	19.37	80	128.4
0049 PFL0924-50	3182	0.37	0.75	54	2.3	8.29	68	115.0
0050 PFL0924-51	3637	0.27	0.75	60	0.3	6.65	57	109.2
0051 PFL0924-52	3892	0.05	1.78	66	5.0	14.03	154	80.7
0052 PFL0924-53	3037	0.38	1.40	58	6.2	10.94	64	121.1
0053 PFL0924-54	3134	0.12	0.86	61	0.6	9.99	70	90.8
0054 PFL0924-55	4492	0.07	0.80	87	1.4	10.16	70	89.4
0055 PFL0924-56	6224	0.33	0.34	40	20.4	19.39	176	76.8
0056 PFL0924-57	3327	0.18	0.65	73	0.2	7.10	65	109.3
0057 PFL0924-58	4800	0.20	0.51	81	1.0	8.71	60	67.7
0058 PFL0924-59	3791	0.15	1.50	87	1.3	16.51	79	106.8
0059 PFL0924-60	3834	0.15	1.00	71	1.7	13.62	56	108.8
0060 PFL0924-61	3876	0.18	0.83	80	15.8	11.78	96	108.4
0061 PFL0924-62	3655	0.17	0.49	114	0.8	16.28	163	48.0
0062 PFL0924-63	3782	0.36	1.27	84	22.1	44.12	100	90.8
0063 PFL0924-64	3715	0.25	0.84	84	2.6	13.90	70	127.1
0064 PFL0924-65	4729	0.21	0.96	123	3.7	17.06	96	50.5
0065 PFL0924-66	3315	0.05	0.20	147	0.4	12.10	62	42.0
0066 PFL0924-67	2576	0.11	1.60	59	1.5	12.15	102	90.2
0067 PFL0924-68	4362	0.21	0.80	84	1.1	8.36	166	119.6
0068 PFL0924-69	6174	0.18	1.97	194	795.6	22.67	60	100.7
0069 PFL0924-70	4771	0.03	0.19	212	20.2	17.55	81	38.3
0070 PFL0924-71	4312	0.16	0.56	105	2.8	12.21	78	105.9
0071 PFL0924-72	9130	X	0.07	330	0.8	31.11	212	30.4
0072 PFL0924-73	6674	0.07	2.79	230	13.7	2.61	28	111.1
0073 PFL0924-74	5906	0.05	1.22	276	16.8	2.74	61	101.7
0074 PFL0924-75	1925	0.28	2.13	47	59.0	19.08	458	99.9
0075 PFL0924-76	2793	0.79	0.74	53	26.8	8.70	409	86.7
0076 PFL0924-77	4788	0.07	1.45	290	47.6	3.43	32	122.4
0077 PFL0924-78	5884	0.12	0.72	188	9.5	5.70	28	154.5
0078 PFL0924-79	4208	0.12	0.59	86	24.1	10.87	59	108.5
0079 PFL0924-80	3328	0.20	0.67	67	0.8	17.53	39	105.5
0080 PFL0924-81	4058	0.10	0.77	132	4.8	16.29	64	57.4



ELEMENTS	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.05	50	0.5	0.1	0.05	0.01	50	0.02	0.01	0.1
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	MS	MS	MS	MS	OE	MS	MS	MS
SAMPLE NUMBERS										
0081 PFL0924-82	X	7.90%	X	1113.3	1.42	0.01	1.92%	0.03	88.16	9.7
0082 PFL0924-83	X	7.35%	9.3	806.9	1.39	0.12	5.32%	0.11	42.85	12.9
0083 PFL0924-84	0.11	6.98%	1.3	936.3	1.42	X	3.96%	0.16	43.55	23.9
0084 PFL0924-85	0.70	7.73%	7.8	139.8	0.67	0.06	1365	0.03	49.62	5.7
0085 PFL0924-86	0.90	9.07%	10.4	560.8	2.14	0.06	2.32%	0.17	58.76	104.3
0086 PFL0924-87	0.05	7.45%	1.1	120.1	1.07	0.01	6.42%	0.17	25.39	46.8
0087 PFL0924-88	0.09	8.16%	0.7	683.7	1.37	0.06	3.18%	0.10	43.65	13.5
0088 PFL0924-89	X	6.36%	0.6	623.3	0.60	X	1.31%	0.02	57.10	6.1
0089 PFL0924-90	0.06	7.48%	0.6	340.6	1.42	0.10	2.82%	0.04	21.09	9.4
0090 PFL0924-91	2.12	9.23%	5.4	430.3	2.00	0.05	1.46%	0.02	29.19	7.5
0091 PFL0924-92	0.08	7.89%	1.2	1118.4	1.30	0.06	1.97%	0.02	59.04	7.9
0092 PFL0924-93	4.89	8.09%	2.0	1102.1	1.17	0.02	3.84%	0.14	37.87	26.3
0093 PFL0924-94	9.70	7.63%	3.4	864.7	1.27	0.07	1.96%	0.10	58.15	18.3
0094 PFL0924-95	2.00	7.46%	11.3	541.5	2.43	0.02	1.24%	0.20	76.23	79.6
0095 PFL0924-96	0.10	7.90%	X	187.8	1.31	0.04	6.79%	0.15	40.38	50.2
0096 PFL0924-97	0.38	9.56%	0.9	170.2	1.88	0.05	2557	0.04	56.29	70.2
0097 PFL0924-98	1.35	9.56%	1.0	139.4	1.88	0.11	2.86%	0.44	27.20	62.9
0098 PFL0924-99	0.07	8.32%	X	99.9	0.69	0.04	7.07%	0.12	20.16	45.1
0099 PFL0924-AA (100)	0.08	2.65%	7.9	192.5	1.22	0.13	15.12%	0.21	26.29	4.9
0100 PFL0924-AB (101)	X	8.00%	1.1	217.3	1.11	0.02	2.50%	0.10	59.81	9.2
0101 PFL0924-AC (102)	0.12	7.39%	X	101.2	1.02	0.01	7.26%	0.19	29.19	59.3
0102 PFL0924-AD (103)	0.38	13.11%	0.6	88.1	1.30	0.05	1156	X	67.59	1.1
0103 PFL0924-AE (104)	0.14	9.32%	1.1	124.2	1.32	0.10	5.80%	0.11	42.64	59.2
0104 PFL0924-AF (105)	0.13	8.52%	X	73.0	0.72	0.10	6.09%	0.07	15.39	55.0
0105 PFL0924-AG (106)	0.09	7.86%	X	641.9	1.32	X	2.29%	0.08	43.62	15.6
0106 PFL0924-AH (107)	6.64	5.84%	2.6	576.7	0.71	0.09	4094	0.02	36.63	5.8
0107 PFL0924-AI (108)	0.14	9.16%	X	1761.8	1.81	X	1.96%	0.02	215.39	6.7
0108 PFL0924-AJ (109)	0.20	8.99%	0.9	276.2	2.04	0.12	5.32%	0.16	46.42	102.3
0109 PFL0924-AK (110)	0.16	14.36%	0.7	344.2	1.56	0.11	511	X	40.55	10.8
0110 PFL0924-AL (111)	0.29	5.83%	X	378.8	1.20	0.25	4.76%	0.13	35.46	50.1
0111 PFL0924-AM (112)	X	7.33%	X	672.4	1.80	X	2.32%	0.04	58.92	81.3
0112 PFL0924-AN (113)	X	13.41%	4.9	196.1	0.87	0.07	381	X	12.21	27.4
0113 PFL0924-AO (114)	0.12	7.63%	X	673.3	1.26	0.04	2.02%	0.87	48.31	9.5
0114 PFL0924-AP (115)	0.38	5.04%	X	300.5	1.36	0.28	3.72%	0.14	30.30	32.5
0115 PFL0924-AQ (116)	0.35	7.72%	X	840.6	1.47	0.06	3.08%	0.10	47.14	12.8
0116 PFL0924-AR (117)	0.05	7.84%	X	542.5	1.59	0.06	2.70%	0.03	43.83	14.3
0117 PFL0924-AS (118)	X	7.88%	0.8	787.2	1.31	0.01	2.98%	0.04	43.31	9.8
0118 PFL0924-AT (119)	X	7.39%	X	371.9	1.05	X	3.59%	0.06	23.94	18.7
0119 PFL0924-AU (120)	0.14	8.05%	0.6	127.1	0.81	0.06	7.06%	0.12	20.95	59.4
0120 PFL0924-AV (121)	0.30	4.83%	2.4	349.2	1.40	0.87	5.49%	0.13	36.19	51.3



ELEMENTS	Cr	Cs	Cu	Fe	Ga	Ge	Hf	In	K	La
UNITS	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	1	0.05	0.5	0.01	0.05	0.1	0.05	0.01	20	0.01
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	OE	MS	MS	OE	MS	MS	MS	MS	OE	MS
SAMPLE NUMBERS										
0081 PFL0924-82	44	0.14	0.8	2.50	19.97	0.8	3.12	0.02	2.55%	49.35
0082 PFL0924-83	28	0.27	18.0	4.29	17.52	0.9	2.33	0.03	1.95%	22.41
0083 PFL0924-84	22	0.23	88.7	10.36	18.84	1.2	2.06	0.10	1.64%	19.89
0084 PFL0924-85	194	0.27	40.0	3.48	19.64	1.1	3.45	0.06	2943	28.54
0085 PFL0924-86	92	0.31	169.8	9.03	25.27	0.9	2.05	0.11	7561	25.17
0086 PFL0924-87	85	0.15	27.7	9.40	18.68	1.3	1.77	0.07	3290	11.54
0087 PFL0924-88	43	0.30	15.6	5.38	19.95	1.1	2.26	0.03	2.10%	24.23
0088 PFL0924-89	35	0.10	8.7	2.41	14.96	0.8	2.83	0.02	2.48%	33.32
0089 PFL0924-90	38	0.18	7.6	2.88	18.37	0.8	2.28	0.03	1.04%	12.92
0090 PFL0924-91	100	0.16	44.4	3.63	28.20	1.0	2.28	0.03	6313	56.81
0091 PFL0924-92	41	0.22	1.9	2.27	20.16	0.9	2.49	0.02	2.53%	34.48
0092 PFL0924-93	101	0.29	48.4	5.22	18.53	1.0	1.96	0.03	1.73%	20.42
0093 PFL0924-94	98	0.64	94.9	5.04	19.18	1.1	2.65	0.04	1.72%	30.31
0094 PFL0924-95	43	1.26	78.1	4.85	19.06	1.0	4.01	0.04	2.12%	39.40
0095 PFL0924-96	106	0.07	80.6	10.64	21.29	1.7	1.31	0.09	2444	17.70
0096 PFL0924-97	292	0.45	165.7	10.80	21.97	1.2	1.71	0.07	6428	31.01
0097 PFL0924-98	267	0.60	97.4	10.12	22.48	1.3	1.85	0.06	3195	18.40
0098 PFL0924-99	267	0.11	37.2	8.57	19.13	1.7	1.48	0.05	4217	9.61
0099 PFL0924-AA (100)	8	0.18	4.1	4.35	6.33	1.1	1.58	0.02	3239	15.15
0100 PFL0924-AB (101)	13	0.10	24.8	2.81	19.85	1.0	0.93	0.01	6648	32.76
0101 PFL0924-AC (102)	165	0.15	97.2	11.12	19.71	1.7	1.39	0.09	2636	11.79
0102 PFL0924-AD (103)	152	0.13	7.0	0.61	30.56	0.8	4.40	0.07	1681	40.17
0103 PFL0924-AE (104)	333	0.42	19.0	7.16	18.58	1.6	1.39	0.04	4946	19.01
0104 PFL0924-AF (105)	312	0.19	37.4	10.23	15.18	1.4	1.24	0.03	4510	7.45
0105 PFL0924-AG (106)	52	0.40	13.0	4.78	19.26	1.0	2.78	0.03	2.34%	25.08
0106 PFL0924-AH (107)	75	0.44	11.1	5.28	16.52	0.8	2.82	0.03	1.08%	20.48
0107 PFL0924-AI (108)	36	0.46	29.7	1.68	23.07	0.8	3.48	0.02	1.82%	122.22
0108 PFL0924-AJ (109)	217	0.26	29.9	8.14	22.67	1.3	1.97	0.05	6289	21.13
0109 PFL0924-AK (110)	358	0.23	26.6	2.69	28.11	2.0	2.15	0.04	4553	22.61
0110 PFL0924-AL (111)	410	3.08	219.5	10.68	16.76	1.4	1.98	0.05	1.17%	17.54
0111 PFL0924-AM (112)	75	0.20	41.8	3.58	19.07	0.8	3.30	0.02	1.04%	36.14
0112 PFL0924-AN (113)	166	0.46	67.3	12.00	31.35	1.6	2.58	0.11	614	4.94
0113 PFL0924-AO (114)	23	0.20	39.7	2.59	20.13	0.8	3.05	0.02	2.01%	26.93
0114 PFL0924-AP (115)	23	0.52	62.0	15.51	15.41	1.6	1.55	0.03	8726	15.96
0115 PFL0924-AQ (116)	37	0.29	25.9	3.63	19.92	0.9	2.64	0.03	2.04%	25.10
0116 PFL0924-AR (117)	43	0.45	14.7	3.44	21.25	0.9	2.35	0.02	1.46%	25.74
0117 PFL0924-AS (118)	33	0.58	8.0	2.51	20.56	0.9	2.27	0.02	2.66%	25.29
0118 PFL0924-AT (119)	52	0.10	32.8	4.20	19.91	1.0	1.16	0.02	1.12%	12.62
0119 PFL0924-AU (120)	223	0.56	93.9	9.23	16.63	1.3	1.30	0.06	5260	9.10
0120 PFL0924-AV (121)	554	5.89	66.2	11.02	13.34	1.8	1.55	0.03	1.60%	17.80



ELEMENTS	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.1	20	1	0.1	20	0.05	0.5	50	0.5	0.05
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	OE	MS	OE	MS	MS	OE	MS	MS
SAMPLE NUMBERS										
0081 PFL0924-82	10.1	8794	377	0.9	3.47%	3.29	30.4	780	19.6	74.46
0082 PFL0924-83	9.4	1.39%	1928	1.3	2.09%	5.42	29.0	690	12.7	47.46
0083 PFL0924-84	3.9	2.08%	4033	1.3	2.18%	11.25	31.3	896	10.0	29.15
0084 PFL0924-85	7.4	1214	327	1.6	1502	14.29	25.0	231	24.0	13.12
0085 PFL0924-86	9.3	7544	1298	1.3	3.00%	8.38	206.3	734	15.2	16.04
0086 PFL0924-87	13.3	3.15%	1301	0.7	1.11%	6.08	69.2	564	3.5	6.60
0087 PFL0924-88	10.6	1.49%	1912	1.1	2.37%	5.54	29.3	1004	15.8	43.01
0088 PFL0924-89	11.9	3228	357	0.7	2.04%	7.04	14.5	727	10.1	57.70
0089 PFL0924-90	19.3	4433	625	1.1	2.53%	12.17	20.6	395	8.7	17.46
0090 PFL0924-91	10.3	1313	122	0.6	1.93%	8.13	32.3	204	8.9	50.71
0091 PFL0924-92	19.2	7466	351	0.8	3.13%	2.94	24.2	591	22.6	60.63
0092 PFL0924-93	15.3	1.92%	923	3.0	2.63%	5.50	80.2	583	12.3	33.99
0093 PFL0924-94	11.8	8817	670	8.3	1.67%	8.85	55.0	483	15.3	45.43
0094 PFL0924-95	10.3	4427	2389	3.1	1.22%	8.41	89.8	645	15.9	71.47
0095 PFL0924-96	16.3	3.00%	1662	0.8	2.16%	10.15	72.4	948	4.1	2.13
0096 PFL0924-97	23.2	1.27%	354	0.7	1.67%	3.69	150.4	218	3.0	31.64
0097 PFL0924-98	13.6	1.40%	722	0.6	1.80%	5.13	132.4	207	4.4	6.26
0098 PFL0924-99	10.3	3.77%	1145	0.3	2.14%	3.85	64.4	114	3.2	3.94
0099 PFL0924-AA (100)	10.7	6.83%	6866	0.9	3438	3.52	9.0	124	4.7	14.24
0100 PFL0924-AB (101)	23.8	5983	581	0.6	3.89%	2.45	14.7	765	3.8	19.57
0101 PFL0924-AC (102)	13.8	3.80%	1877	0.8	1.80%	6.94	111.6	653	3.0	3.57
0102 PFL0924-AD (103)	5.9	752	257	0.9	553	9.60	4.9	212	29.6	6.93
0103 PFL0924-AE (104)	19.2	3.76%	1344	1.4	2.02%	4.20	196.5	195	6.3	12.23
0104 PFL0924-AF (105)	11.6	4.07%	2599	3.0	1.76%	2.71	249.1	220	3.6	7.27
0105 PFL0924-AG (106)	17.0	4893	1234	1.7	2.42%	5.57	35.5	718	10.7	65.79
0106 PFL0924-AH (107)	10.5	1072	146	6.7	9946	8.15	14.8	89	26.6	33.40
0107 PFL0924-AI (108)	6.2	2420	136	1.3	3.52%	3.36	24.0	327	20.6	52.60
0108 PFL0924-AJ (109)	15.4	2.53%	2026	5.6	2.73%	6.09	201.5	231	8.8	12.92
0109 PFL0924-AK (110)	34.3	2876	92	1.3	3693	3.55	104.3	204	12.3	9.92
0110 PFL0924-AL (111)	27.6	3.49%	2562	6.5	2.37%	5.21	226.5	600	8.2	53.50
0111 PFL0924-AM (112)	12.1	5434	650	2.1	2.34%	6.62	55.1	152	11.3	40.18
0112 PFL0924-AN (113)	19.6	1704	316	1.5	1037	11.23	46.5	X	11.0	5.40
0113 PFL0924-AO (114)	13.9	5131	715	3.3	3.51%	4.60	12.9	558	80.4	50.55
0114 PFL0924-AP (115)	18.3	1.87%	6859	16.2	2.12%	3.45	26.0	415	9.4	17.92
0115 PFL0924-AQ (116)	16.8	9130	1320	1.8	3.10%	4.61	21.4	648	26.1	52.10
0116 PFL0924-AR (117)	26.0	9216	1030	2.0	3.19%	4.18	28.6	596	10.1	46.57
0117 PFL0924-AS (118)	18.1	7901	469	1.3	2.30%	3.79	19.2	576	11.6	76.98
0118 PFL0924-AT (119)	17.9	1.25%	764	3.3	2.72%	3.24	37.1	463	4.5	19.22
0119 PFL0924-AU (120)	18.7	4.97%	1503	9.3	1.85%	4.15	213.9	379	4.5	8.46
0120 PFL0924-AV (121)	44.2	4.67%	4597	19.5	1.49%	4.41	413.3	609	8.5	67.04



ELEMENTS	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.002	50	0.05	0.1	0.5	0.1	0.05	0.01	0.2	0.01
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	MS	MS	MS	MS	MS	MS	MS	MS
SAMPLE NUMBERS										
0081 PFL0924-82	X	91	X	5.2	X	0.8	678.61	0.11	X	14.12
0082 PFL0924-83	X	400	0.33	9.7	X	0.6	254.24	0.33	X	3.52
0083 PFL0924-84	X	2697	X	26.6	X	1.3	301.96	0.74	X	0.77
0084 PFL0924-85	X	137	0.20	19.4	0.7	0.8	38.49	0.94	X	10.50
0085 PFL0924-86	X	143	0.17	34.9	0.6	1.5	325.02	0.51	X	1.73
0086 PFL0924-87	0.003	503	0.06	29.7	X	0.9	209.18	0.40	X	0.54
0087 PFL0924-88	X	629	X	9.1	X	0.6	252.69	0.30	X	2.04
0088 PFL0924-89	X	53	0.05	5.7	X	0.3	312.45	0.35	X	4.30
0089 PFL0924-90	X	180	0.06	6.9	X	0.3	268.09	0.88	X	0.44
0090 PFL0924-91	X	166	0.27	12.1	X	0.8	154.93	0.54	X	5.48
0091 PFL0924-92	X	164	X	4.8	X	0.8	664.08	0.09	X	8.23
0092 PFL0924-93	X	53	0.18	11.2	X	1.5	479.48	0.29	X	2.00
0093 PFL0924-94	X	108	0.13	12.1	0.6	0.9	320.09	0.47	X	4.89
0094 PFL0924-95	0.002	181	0.10	12.1	0.6	3.0	136.32	0.53	X	11.47
0095 PFL0924-96	X	202	X	37.0	0.6	1.2	220.57	0.66	X	0.44
0096 PFL0924-97	X	56	0.18	43.7	0.6	0.7	78.95	0.22	X	0.31
0097 PFL0924-98	X	53	0.10	39.8	X	1.3	128.91	0.31	X	0.39
0098 PFL0924-99	X	X	X	38.0	X	0.7	155.92	0.23	X	0.41
0099 PFL0924-AA (100)	X	X	0.49	2.3	X	0.9	43.73	0.57	X	11.45
0100 PFL0924-AB (101)	X	1862	X	4.0	0.6	0.1	252.43	0.11	X	1.44
0101 PFL0924-AC (102)	0.002	4025	X	37.0	0.6	1.1	216.38	0.40	X	0.38
0102 PFL0924-AD (103)	X	220	0.10	19.2	0.5	1.3	13.38	0.62	X	7.59
0103 PFL0924-AE (104)	X	89	0.13	27.9	X	1.2	207.14	0.26	X	1.66
0104 PFL0924-AF (105)	X	301	0.09	22.6	X	0.8	164.32	0.18	X	1.07
0105 PFL0924-AG (106)	X	X	0.19	7.9	X	0.7	250.59	0.27	X	1.88
0106 PFL0924-AH (107)	X	116	0.16	6.2	0.7	0.7	195.83	0.35	X	8.79
0107 PFL0924-AI (108)	X	100	X	4.2	1.1	0.5	982.81	0.06	X	10.41
0108 PFL0924-AJ (109)	X	X	0.06	28.8	X	1.3	293.71	0.37	X	1.31
0109 PFL0924-AK (110)	X	471	0.13	25.8	X	0.6	54.86	0.17	X	3.84
0110 PFL0924-AL (111)	0.004	2.22%	X	16.8	1.1	1.5	235.82	0.28	0.2	0.72
0111 PFL0924-AM (112)	X	X	X	7.7	0.6	0.3	349.22	0.30	X	9.44
0112 PFL0924-AN (113)	X	284	0.13	35.6	3.9	1.8	8.97	0.74	X	7.06
0113 PFL0924-AO (114)	X	3158	0.08	5.9	X	1.0	280.60	0.32	X	4.03
0114 PFL0924-AP (115)	0.004	3.07%	X	7.6	0.7	1.5	174.13	0.28	0.4	1.00
0115 PFL0924-AQ (116)	X	3065	X	9.7	X	1.1	315.54	0.39	0.2	2.44
0116 PFL0924-AR (117)	X	1685	0.06	7.3	X	0.8	348.22	0.28	X	3.06
0117 PFL0924-AS (118)	X	910	X	5.7	X	0.7	437.96	0.22	X	3.19
0118 PFL0924-AT (119)	X	1624	0.06	11.4	X	0.7	230.23	0.17	X	0.21
0119 PFL0924-AU (120)	X	4896	0.13	27.4	0.7	1.0	186.25	0.26	0.2	0.49
0120 PFL0924-AV (121)	0.008	2.67%	0.21	16.0	0.9	1.0	145.55	0.31	0.4	2.89



ELEMENTS	Ti	Tl	U	V	W	Y	Zn	Zr
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	5	0.02	0.01	1	0.1	0.05	1	0.1
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	OE	MS	MS	OE	MS	MS	MS	MS
SAMPLE NUMBERS								
0081 PFL0924-82	1944	0.37	0.55	42	1.0	9.34	44	122.2
0082 PFL0924-83	2832	0.21	1.06	57	16.4	11.62	73	80.7
0083 PFL0924-84	6324	0.15	0.30	133	0.9	18.47	124	79.6
0084 PFL0924-85	8174	0.09	1.07	176	15.6	6.16	32	123.6
0085 PFL0924-86	5947	0.10	0.87	201	9.0	25.38	298	68.8
0086 PFL0924-87	7222	0.03	0.24	244	1.5	23.93	90	59.0
0087 PFL0924-88	3011	0.22	0.46	66	0.3	7.81	116	85.5
0088 PFL0924-89	3291	0.25	0.39	69	1.1	6.76	23	110.7
0089 PFL0924-90	3671	0.09	0.30	52	1.0	2.07	51	89.8
0090 PFL0924-91	4435	0.08	0.95	91	30.7	8.52	97	80.2
0091 PFL0924-92	1859	0.30	0.51	36	0.5	6.40	47	98.8
0092 PFL0924-93	3429	0.17	0.35	79	5.4	11.67	71	73.1
0093 PFL0924-94	4100	0.23	0.76	83	28.4	13.35	83	96.4
0094 PFL0924-95	4159	0.32	1.17	90	46.4	44.09	94	145.5
0095 PFL0924-96	9320	X	0.15	317	0.8	30.62	125	39.6
0096 PFL0924-97	5376	0.14	0.54	192	12.9	27.24	155	47.1
0097 PFL0924-98	5985	0.04	0.47	181	4.2	22.86	105	52.5
0098 PFL0924-99	4933	0.03	0.16	217	0.9	18.90	80	40.6
0099 PFL0924-AA (100)	739	0.06	2.81	19	3.5	6.14	76	48.8
0100 PFL0924-AB (101)	1011	0.09	0.24	17	0.9	8.85	43	36.4
0101 PFL0924-AC (102)	8660	0.03	0.10	304	2.8	30.15	122	36.4
0102 PFL0924-AD (103)	6309	0.03	1.10	148	8.8	6.15	6	168.9
0103 PFL0924-AE (104)	2894	0.08	0.43	160	1.6	20.72	111	39.6
0104 PFL0924-AF (105)	2984	0.11	0.36	133	9.8	13.37	69	42.2
0105 PFL0924-AG (106)	3190	0.29	0.40	65	4.7	9.05	73	93.2
0106 PFL0924-AH (107)	3102	0.21	0.83	160	2.7	5.48	14	98.3
0107 PFL0924-AI (108)	2806	0.48	0.59	41	1.0	13.13	50	137.1
0108 PFL0924-AJ (109)	3466	0.11	0.50	149	1.4	33.73	165	59.6
0109 PFL0924-AK (110)	3804	0.05	0.63	152	10.8	4.43	47	76.5
0110 PFL0924-AL (111)	4789	0.40	0.28	136	1.3	14.08	116	74.0
0111 PFL0924-AM (112)	3989	0.17	0.66	80	0.6	20.61	73	134.8
0112 PFL0924-AN (113)	1.12%	0.05	0.72	390	5.1	3.77	59	82.3
0113 PFL0924-AO (114)	2401	0.28	0.61	45	7.2	8.17	483	118.3
0114 PFL0924-AP (115)	2260	0.10	0.32	134	14.8	11.00	80	62.4
0115 PFL0924-AQ (116)	2662	0.26	0.50	64	4.5	12.10	79	100.5
0116 PFL0924-AR (117)	2892	0.25	0.50	61	4.0	8.05	54	89.7
0117 PFL0924-AS (118)	2430	0.38	0.67	49	9.4	5.64	48	91.8
0118 PFL0924-AT (119)	3471	0.11	0.13	88	4.9	8.63	49	39.5
0119 PFL0924-AU (120)	5251	0.10	0.14	196	16.1	18.25	105	37.9
0120 PFL0924-AV (121)	4032	0.60	0.65	116	10.5	13.39	115	52.1



ELEMENTS	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.05	50	0.5	0.1	0.05	0.01	50	0.02	0.01	0.1
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	MS	MS	MS	MS	OE	MS	MS	MS
SAMPLE NUMBERS										
0121 PFL0924-AW (122)	0.12	7.77%	3.1	789.6	1.41	0.05	3.35%	0.07	61.51	19.2
0122 PFL0924-AX (123)	0.05	9.65%	0.9	170.1	1.15	0.11	5.79%	0.12	15.93	75.2
0123 PFL0924-AY (124)	0.08	5.95%	4.3	475.1	1.29	0.12	6.14%	0.17	47.76	46.3
0124 PFL0924-AZ (125)	X	8.18%	1.0	737.3	1.60	0.01	2.59%	0.04	39.88	12.3
0125 PFL0924-BA (126)	0.07	7.09%	1.8	482.9	1.53	0.01	3.08%	0.17	58.38	33.1
0126 PFL0924-BB (127)	X	7.26%	0.8	1320.6	1.60	0.01	4.11%	0.14	97.03	33.7
0127 PFL0924-BC (128)	0.10	7.71%	2.9	391.9	1.30	X	2.90%	0.10	35.02	18.5
0128 PFL0924-BD (129)	0.05	8.25%	X	475.5	0.76	X	2.35%	0.04	41.12	10.3
0129 PFL0924-BE (130)	0.06	7.83%	2.4	627.2	1.43	X	3.50%	0.07	51.99	16.5
0130 PFL0924-BF (131)	0.05	8.11%	2.7	439.1	1.19	0.01	3.67%	0.08	72.81	15.1
0131 PFL0924-BG (132)	0.06	7.68%	0.6	700.8	1.38	X	3.26%	0.06	58.96	13.9
0132 PFL0924-BH (133)	X	8.76%	10.3	674.6	3.42	0.09	1.72%	0.06	78.59	43.7
0133 PFL0924-BI (134)	X	10.16%	1.6	742.0	1.06	X	1262	X	96.02	6.5
0134 PFL0924-BJ (135)	X	12.21%	18.9	83.6	1.27	0.20	6143	X	63.94	11.1
0135 PFL0924-BK (136)	X	7.70%	60.8	798.4	1.42	0.07	1.36%	0.03	73.73	24.3
0136 PFL0924-BL (137)	0.19	7.98%	2.4	975.0	1.37	X	2.40%	0.18	47.08	17.1
0137 PFL0924-BM (138)	X	7.07%	1.7	127.7	2.14	0.02	2.36%	0.09	44.30	82.3
0138 PFL0924-BN (139)	X	7.26%	0.5	142.6	0.65	0.02	7.12%	0.06	26.90	51.7
0139 PFL0924-BO (140)	X	7.90%	6.6	116.4	0.79	0.07	2065	0.02	40.07	9.8
0140 PFL0924-BP (141)	0.13	7.69%	0.5	1141.4	1.49	0.04	1.59%	0.06	58.75	9.2
0141 PFL0924-BQ (142)	0.06	10.58%	6.1	457.1	1.39	0.07	6132	0.03	75.97	24.2
0142 PFL0924-BR (143)	X	11.64%	1.4	71.2	0.43	0.05	183	0.02	108.20	8.0
0143 PFL0924-BS (144)	0.08	10.54%	3.5	350.1	1.24	0.08	3.29%	0.38	40.47	104.6
0144 PFL0924-BT (145)	X	5.36%	1.8	30.5	0.47	0.09	1580	X	8.66	8.0
0145 PFL0924-BU (146)	0.09	7.87%	1.1	1171.4	1.29	0.16	1.56%	0.03	41.08	8.7
0146 PFL0924-BV (147)	X	7.84%	X	957.1	1.36	0.02	1.45%	0.02	36.36	5.9
0147 PFL0924-BW (148)	0.13	7.85%	X	1053.0	1.47	0.03	1.58%	0.06	56.46	6.7
0148 PFL0924-BX (149)	X	7.93%	1.0	698.7	1.87	0.04	1.94%	0.02	58.58	9.3
0149 PFL0924-BY (150)	X	6.92%	4.3	388.6	0.58	0.05	2072	0.04	6.98	47.9
0150 PFL0924-BZ (151)	0.07	7.84%	X	1097.9	1.51	0.07	1.86%	0.05	61.44	7.9
0151 PFL0924-CA (152)	0.12	7.85%	1.3	816.3	0.91	0.01	3996	0.06	41.47	8.9
0152 PFL0924-CB (153)	0.14	3.27%	14.2	416.0	3.27	0.66	1.47%	0.87	55.45	407.2
0153 PFL0924-CC (154)	0.10	7.08%	6.5	760.1	2.05	0.38	3.71%	0.17	71.95	63.9
0154 PFL0924-CD (155)	0.05	7.64%	X	856.2	1.24	0.02	1.95%	0.05	38.75	14.5
0155 PFL0924-CE (156)	0.10	7.86%	1.5	832.0	1.07	X	2.54%	0.22	44.46	15.2
0156 PFL0924-CF (157)	0.11	1.59%	8.9	154.0	0.57	0.27	3.99%	0.12	24.65	148.9
0157 PFL0924-CG (158)	X	8.52%	1.8	1324.3	1.22	0.03	1.62%	0.05	66.04	23.8
0158 PFL0924-CH (159)	0.07	7.23%	1.7	388.3	1.38	0.01	3.37%	0.39	38.20	17.5
0159 PFL0924-CI (160)	0.08	8.00%	1.9	444.8	1.13	0.02	3.31%	0.06	37.37	22.2
0160 PFL0924-CJ (161)	0.08	9.29%	0.8	286.6	1.95	0.11	5.08%	0.10	46.24	53.2



ELEMENTS	Cr	Cs	Cu	Fe	Ga	Ge	Hf	In	K	La
UNITS	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	1	0.05	0.5	0.01	0.05	0.1	0.05	0.01	20	0.01
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	OE	MS	MS	OE	MS	MS	MS	MS	OE	MS
SAMPLE NUMBERS										
0121 PFL0924-AW (122)	82	0.41	44.4	3.83	19.23	0.9	2.66	0.03	2.04%	34.62
0122 PFL0924-AX (123)	328	0.53	45.9	8.26	16.50	1.8	1.63	0.04	4790	6.82
0123 PFL0924-AY (124)	379	0.79	72.9	9.61	16.73	1.5	1.75	0.07	1.54%	23.41
0124 PFL0924-AZ (125)	67	0.32	21.4	3.05	19.55	0.8	2.36	0.03	1.86%	24.17
0125 PFL0924-BA (126)	51	0.16	133.6	9.03	21.53	1.0	2.59	0.06	8622	29.32
0126 PFL0924-BB (127)	61	0.39	25.9	9.91	22.03	1.5	8.59	0.11	1.61%	45.56
0127 PFL0924-BC (128)	89	0.50	41.8	4.55	20.39	0.8	2.81	0.03	9780	20.21
0128 PFL0924-BD (129)	31	0.41	12.0	2.36	19.57	0.7	2.72	0.02	1.92%	24.45
0129 PFL0924-BE (130)	65	0.59	20.6	5.04	19.51	0.8	3.22	0.02	1.29%	29.65
0130 PFL0924-BF (131)	55	0.33	16.5	5.52	20.28	0.9	3.71	0.04	8171	36.80
0131 PFL0924-BG (132)	56	0.49	25.2	3.93	19.53	0.9	2.74	0.03	1.88%	32.36
0132 PFL0924-BH (133)	161	1.18	66.8	4.52	22.02	0.8	2.86	0.04	1.16%	35.63
0133 PFL0924-BI (134)	69	1.00	51.5	3.25	25.85	1.1	3.61	0.03	1.89%	68.10
0134 PFL0924-BJ (135)	314	0.45	10.2	7.67	30.53	1.4	4.65	0.12	1607	16.43
0135 PFL0924-BK (136)	530	0.36	42.5	7.46	19.86	0.8	3.50	0.04	1.51%	43.56
0136 PFL0924-BL (137)	44	0.32	56.0	3.55	19.66	0.7	2.42	0.02	2.13%	27.33
0137 PFL0924-BM (138)	30	0.31	129.8	12.46	24.48	1.5	5.21	0.16	7735	16.96
0138 PFL0924-BN (139)	139	0.13	33.2	10.35	17.50	1.3	2.25	0.08	4101	12.59
0139 PFL0924-BO (140)	61	0.34	34.7	3.25	20.15	1.0	2.65	0.03	2673	17.27
0140 PFL0924-BP (141)	45	0.36	48.9	2.41	20.76	0.8	2.54	0.01	2.42%	34.29
0141 PFL0924-BQ (142)	200	0.84	188.4	7.74	29.07	1.4	3.16	0.07	9481	37.27
0142 PFL0924-BR (143)	55	1.08	72.9	3.28	26.94	1.0	3.96	0.06	3180	55.90
0143 PFL0924-BS (144)	277	0.69	62.7	9.52	22.43	1.2	1.64	0.06	7083	21.93
0144 PFL0924-BT (145)	51	0.34	5.0	1.09	12.59	0.9	3.32	0.03	451	5.52
0145 PFL0924-BU (146)	34	0.31	56.3	2.32	19.85	0.6	1.96	0.01	2.21%	24.06
0146 PFL0924-BV (147)	27	0.27	10.6	1.89	20.40	0.7	2.75	0.02	2.39%	21.28
0147 PFL0924-BW (148)	29	0.39	19.4	2.24	20.64	0.8	2.52	0.01	2.31%	32.56
0148 PFL0924-BX (149)	28	0.48	27.7	3.01	19.90	0.7	3.11	0.02	2.18%	33.33
0149 PFL0924-BY (150)	117	0.59	45.9	8.65	18.63	0.9	2.62	0.04	5856	3.67
0150 PFL0924-BZ (151)	42	0.58	9.1	2.27	20.63	0.8	3.06	0.02	2.50%	34.71
0151 PFL0924-CA (152)	78	0.54	44.8	2.10	20.91	0.8	4.11	0.02	2.10%	24.10
0152 PFL0924-CB (153)	3274	0.58	164.7	20.67	11.90	1.0	2.20	0.07	2226	24.28
0153 PFL0924-CC (154)	788	1.50	130.3	6.95	19.12	1.1	3.23	0.05	1.04%	35.86
0154 PFL0924-CD (155)	74	0.35	14.8	3.30	18.36	0.7	2.47	0.02	2.06%	21.54
0155 PFL0924-CE (156)	50	0.22	38.3	3.47	19.21	0.7	2.69	0.03	1.54%	25.28
0156 PFL0924-CF (157)	1559	5.93	130.1	12.96	5.97	1.5	0.88	0.03	6929	11.48
0157 PFL0924-CG (158)	69	0.36	23.7	3.31	19.39	0.8	1.44	0.02	3.06%	32.35
0158 PFL0924-CH (159)	52	0.08	34.5	9.27	18.31	1.0	2.16	0.05	9851	20.68
0159 PFL0924-CI (160)	71	0.32	73.1	6.12	20.21	0.8	2.58	0.04	1.06%	21.76
0160 PFL0924-CJ (161)	198	1.78	21.5	6.81	21.81	1.2	2.12	0.05	7098	20.95



ELEMENTS	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.1	20	1	0.1	20	0.05	0.5	50	0.5	0.05
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	OE	MS	OE	MS	MS	OE	MS	MS
SAMPLE NUMBERS										
0121 PFL0924-AW (122)	14.7	1.12%	965	4.9	2.99%	4.97	52.9	758	15.4	50.88
0122 PFL0924-AX (123)	21.7	4.89%	1595	2.3	1.53%	2.67	304.5	177	3.9	11.07
0123 PFL0924-AY (124)	21.9	3.87%	2081	1.6	1.59%	11.34	136.0	890	7.6	40.77
0124 PFL0924-AZ (125)	8.6	3407	509	0.9	2.41%	7.50	39.5	613	12.0	45.16
0125 PFL0924-BA (126)	7.7	9639	1305	2.9	3.37%	12.89	30.3	1083	7.4	8.95
0126 PFL0924-BB (127)	20.8	1.39%	1684	2.3	2.33%	24.56	63.2	5013	6.3	48.49
0127 PFL0924-BC (128)	13.9	7940	825	1.1	2.61%	7.31	61.9	894	8.0	24.92
0128 PFL0924-BD (129)	15.1	4675	500	1.8	2.58%	3.71	19.9	368	18.7	52.23
0129 PFL0924-BE (130)	10.5	8930	1846	3.8	1.97%	7.33	42.1	838	9.4	44.52
0130 PFL0924-BF (131)	15.0	8741	2307	2.7	2.00%	7.47	25.5	2208	14.6	25.02
0131 PFL0924-BG (132)	23.3	1.01%	1243	3.4	2.36%	6.80	31.3	1002	10.2	45.43
0132 PFL0924-BH (133)	9.8	4944	527	1.4	2.35%	10.67	172.7	273	14.7	33.12
0133 PFL0924-BI (134)	8.1	4051	217	2.7	2742	5.91	28.2	465	22.4	124.37
0134 PFL0924-BJ (135)	23.2	2380	256	3.2	3213	9.79	57.4	224	28.2	7.21
0135 PFL0924-BK (136)	10.5	1.19%	643	2.1	1.54%	6.29	175.8	418	17.6	53.19
0136 PFL0924-BL (137)	12.9	8024	644	3.5	2.61%	7.31	34.4	862	16.9	53.72
0137 PFL0924-BM (138)	11.3	1.16%	1846	1.5	2.33%	15.35	67.3	1310	2.1	28.95
0138 PFL0924-BN (139)	23.1	4.39%	1576	1.7	1.86%	8.06	87.9	762	2.2	18.76
0139 PFL0924-BO (140)	20.7	1334	156	3.1	2912	7.12	37.1	201	21.0	9.26
0140 PFL0924-BP (141)	19.1	5976	335	5.9	3.22%	2.84	26.6	534	24.9	78.56
0141 PFL0924-BQ (142)	8.8	5390	736	1.9	5124	21.07	107.7	523	11.2	49.16
0142 PFL0924-BR (143)	7.8	1716	227	1.6	2665	13.11	36.5	385	25.0	20.14
0143 PFL0924-BS (144)	15.1	2.00%	1224	1.2	1.33%	4.51	507.0	421	10.9	25.47
0144 PFL0924-BT (145)	22.3	683	73	3.9	1247	11.39	33.1	71	14.1	2.78
0145 PFL0924-BU (146)	13.8	6816	277	12.1	3.34%	2.49	22.2	683	18.6	62.19
0146 PFL0924-BV (147)	11.3	4806	236	2.8	3.54%	2.22	14.1	398	21.7	69.31
0147 PFL0924-BW (148)	13.3	5108	215	2.9	3.26%	2.60	22.0	572	18.1	77.44
0148 PFL0924-BX (149)	6.8	3432	227	1.9	2.57%	6.32	26.5	256	11.9	54.52
0149 PFL0924-BY (150)	5.2	5253	386	2.4	1.12%	6.78	111.9	263	5.2	35.39
0150 PFL0924-BZ (151)	19.8	6437	313	2.4	3.41%	4.60	23.6	557	26.7	89.93
0151 PFL0924-CA (152)	3.4	1421	554	1.3	1.78%	10.41	31.7	149	37.6	61.57
0152 PFL0924-CB (153)	13.1	3.57%	6122	8.0	9508	16.68	2540.1	1200	7.5	4.59
0153 PFL0924-CC (154)	14.9	2.67%	2008	7.2	1.70%	16.62	344.1	930	47.2	32.48
0154 PFL0924-CD (155)	23.3	1.01%	598	1.7	2.94%	5.75	43.9	696	11.8	52.66
0155 PFL0924-CE (156)	13.8	1.21%	1105	1.9	3.47%	6.32	30.0	794	18.5	25.13
0156 PFL0924-CF (157)	13.3	12.60%	2517	1.9	2629	7.39	1222.4	312	5.7	35.37
0157 PFL0924-CG (158)	10.8	5580	631	1.5	2.37%	2.11	52.8	304	17.9	63.31
0158 PFL0924-CH (159)	11.9	1.47%	5125	4.2	2.08%	7.68	30.7	771	9.4	15.83
0159 PFL0924-CI (160)	14.1	9666	1285	4.0	1.97%	7.51	40.3	640	10.3	29.21
0160 PFL0924-CJ (161)	15.7	2.69%	1044	2.5	2.70%	6.33	192.2	287	9.6	21.60



ELEMENTS	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.002	50	0.05	0.1	0.5	0.1	0.05	0.01	0.2	0.01
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	MS	MS	MS	MS	MS	MS	MS	MS
SAMPLE NUMBERS										
0121 PFL0924-AW (122)	0.004	3797	0.21	9.0	0.5	0.8	408.33	0.30	X	7.09
0122 PFL0924-AX (123)	X	170	0.12	25.3	X	0.7	123.63	0.17	X	1.16
0123 PFL0924-AY (124)	X	2443	0.20	22.2	0.6	1.1	291.64	0.67	X	2.89
0124 PFL0924-AZ (125)	X	92	0.09	9.7	X	0.4	254.71	0.54	X	1.99
0125 PFL0924-BA (126)	X	1124	0.09	7.7	1.0	2.0	667.29	0.68	X	1.31
0126 PFL0924-BB (127)	X	X	0.07	31.5	0.9	1.7	273.12	1.57	X	5.75
0127 PFL0924-BC (128)	X	67	0.15	11.6	X	0.4	285.93	0.47	X	1.75
0128 PFL0924-BD (129)	X	259	X	7.0	X	0.3	295.80	0.21	X	4.03
0129 PFL0924-BE (130)	X	558	0.06	9.5	X	0.6	275.35	0.42	X	4.46
0130 PFL0924-BF (131)	X	451	0.22	9.8	0.6	0.9	291.36	0.53	X	6.84
0131 PFL0924-BG (132)	X	715	0.07	9.5	X	0.5	257.65	0.40	X	4.57
0132 PFL0924-BH (133)	X	106	0.37	12.9	1.0	1.3	315.86	1.09	X	6.84
0133 PFL0924-BI (134)	X	423	0.06	10.0	X	0.5	186.61	0.25	X	4.31
0134 PFL0924-BJ (135)	X	304	0.33	32.4	1.9	1.4	57.62	0.74	X	33.01
0135 PFL0924-BK (136)	X	231	0.88	18.9	0.6	0.9	188.07	0.38	X	14.56
0136 PFL0924-BL (137)	X	1435	0.15	7.9	X	0.3	324.59	0.44	X	1.78
0137 PFL0924-BM (138)	X	85	0.07	38.8	1.3	2.0	253.74	0.97	X	1.75
0138 PFL0924-BN (139)	X	4048	0.06	40.8	X	0.9	400.99	0.48	X	1.83
0139 PFL0924-BO (140)	X	364	0.16	12.5	0.8	1.1	43.07	0.47	X	8.56
0140 PFL0924-BP (141)	0.002	875	0.07	4.5	X	0.7	634.55	0.09	X	10.37
0141 PFL0924-BQ (142)	X	852	0.12	28.8	0.7	1.7	110.29	1.26	X	3.27
0142 PFL0924-BR (143)	X	464	0.15	19.0	X	0.6	10.64	0.90	X	22.94
0143 PFL0924-BS (144)	X	71	0.28	23.2	X	0.9	161.00	0.31	X	3.68
0144 PFL0924-BT (145)	X	215	0.24	9.9	0.5	1.6	18.97	0.82	X	10.08
0145 PFL0924-BU (146)	0.003	1460	X	2.7	X	0.6	542.62	0.08	X	2.91
0146 PFL0924-BV (147)	X	271	X	3.0	X	0.6	595.06	0.09	X	3.22
0147 PFL0924-BW (148)	X	60	X	4.1	X	0.5	610.63	0.07	X	9.95
0148 PFL0924-BX (149)	X	203	X	6.5	X	0.7	242.98	0.41	X	2.99
0149 PFL0924-BY (150)	X	394	0.53	22.0	X	0.7	71.70	0.40	X	2.51
0150 PFL0924-BZ (151)	X	337	X	4.6	X	0.7	648.37	0.14	X	11.21
0151 PFL0924-CA (152)	X	124	0.07	11.7	X	0.7	194.56	0.74	X	3.82
0152 PFL0924-CB (153)	X	307	0.27	27.8	0.5	1.3	90.62	1.14	X	2.52
0153 PFL0924-CC (154)	X	1141	0.24	17.1	0.7	1.5	293.21	1.10	X	5.65
0154 PFL0924-CD (155)	X	547	X	7.1	X	0.5	307.63	0.25	X	2.26
0155 PFL0924-CE (156)	X	670	0.11	9.4	X	0.4	307.08	0.33	X	1.91
0156 PFL0924-CF (157)	0.003	2112	0.29	14.1	X	0.6	104.22	0.52	X	1.75
0157 PFL0924-CG (158)	X	118	0.06	6.6	X	0.9	715.58	0.07	X	1.41
0158 PFL0924-CH (159)	X	2548	0.07	11.4	X	0.6	124.92	0.45	X	1.26
0159 PFL0924-CI (160)	X	2208	0.08	14.2	X	0.4	272.53	0.36	X	1.45
0160 PFL0924-CJ (161)	X	54	0.16	25.4	X	1.3	326.24	0.36	X	1.95



ELEMENTS	Ti	Tl	U	V	W	Y	Zn	Zr
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	5	0.02	0.01	1	0.1	0.05	1	0.1
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	OE	MS	MS	OE	MS	MS	MS	MS
SAMPLE NUMBERS								
0121 PFL0924-AW (122)	3071	0.28	1.17	64	11.6	10.22	65	102.7
0122 PFL0924-AX (123)	3083	0.17	0.63	148	8.6	12.71	90	57.6
0123 PFL0924-AY (124)	7144	0.22	0.50	133	3.6	11.77	118	64.5
0124 PFL0924-AZ (125)	3271	0.20	0.56	66	3.7	7.72	59	94.6
0125 PFL0924-BA (126)	6017	0.05	0.43	54	3.6	17.12	118	107.1
0126 PFL0924-BB (127)	1.63%	0.21	1.07	202	1.8	45.86	126	394.7
0127 PFL0924-BC (128)	4362	0.11	0.58	100	2.6	7.61	70	107.9
0128 PFL0924-BD (129)	2376	0.25	0.76	41	1.6	8.52	48	100.5
0129 PFL0924-BE (130)	4009	0.22	0.69	79	11.1	11.42	69	127.1
0130 PFL0924-BF (131)	3851	0.12	1.52	73	12.3	19.38	77	146.5
0131 PFL0924-BG (132)	3389	0.23	0.50	68	4.2	10.09	64	105.1
0132 PFL0924-BH (133)	4334	0.18	2.42	83	6.4	42.52	199	102.7
0133 PFL0924-BI (134)	3740	0.70	0.81	72	1.0	20.06	52	145.9
0134 PFL0924-BJ (135)	5412	0.06	2.58	276	5.9	8.00	85	163.8
0135 PFL0924-BK (136)	5566	0.26	1.12	130	6.2	15.37	123	126.9
0136 PFL0924-BL (137)	3648	0.22	0.52	69	100.3	7.19	94	96.8
0137 PFL0924-BM (138)	1.54%	0.13	0.34	359	1.6	91.42	164	191.4
0138 PFL0924-BN (139)	9017	0.09	0.42	339	2.7	21.73	93	80.5
0139 PFL0924-BO (140)	4073	0.06	1.32	72	12.4	4.96	77	93.3
0140 PFL0924-BP (141)	1669	0.44	0.42	33	2.6	5.44	66	101.2
0141 PFL0924-BQ (142)	1.16%	0.42	0.82	182	45.8	17.15	136	113.9
0142 PFL0924-BR (143)	6933	0.33	1.71	134	2.0	6.05	59	150.6
0143 PFL0924-BS (144)	4070	0.20	0.76	124	3.4	14.76	321	57.7
0144 PFL0924-BT (145)	6164	0.04	1.28	46	7.4	3.15	8	113.4
0145 PFL0924-BU (146)	1595	0.34	0.38	26	4.5	3.48	50	75.8
0146 PFL0924-BV (147)	1403	0.39	0.43	25	3.6	3.99	38	103.6
0147 PFL0924-BW (148)	1711	0.38	0.63	33	4.6	5.09	41	99.2
0148 PFL0924-BX (149)	3250	0.26	0.53	53	3.2	2.96	56	118.2
0149 PFL0924-BY (150)	4912	0.17	0.42	176	3.9	5.92	120	102.9
0150 PFL0924-BZ (151)	1682	0.51	0.47	33	1.6	6.25	48	119.2
0151 PFL0924-CA (152)	4156	0.52	0.64	71	54.5	4.80	67	162.7
0152 PFL0924-CB (153)	8294	0.77	0.85	210	5.1	19.96	219	69.4
0153 PFL0924-CC (154)	6107	0.54	1.74	105	21.9	16.58	211	117.7
0154 PFL0924-CD (155)	3170	0.26	0.59	58	3.8	6.12	51	97.6
0155 PFL0924-CE (156)	4283	0.11	0.45	77	7.5	7.83	126	104.5
0156 PFL0924-CF (157)	3986	0.40	0.42	76	1.7	7.87	142	26.8
0157 PFL0924-CG (158)	1813	0.37	0.32	38	0.5	14.28	79	60.6
0158 PFL0924-CH (159)	3475	0.08	0.36	69	0.6	14.73	275	84.7
0159 PFL0924-CI (160)	4559	0.14	0.40	108	1.1	15.82	96	97.3
0160 PFL0924-CJ (161)	3763	0.13	0.56	131	5.1	17.30	145	75.5



ELEMENTS	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.05	50	0.5	0.1	0.05	0.01	50	0.02	0.01	0.1
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	MS	MS	MS	MS	OE	MS	MS	MS
SAMPLE NUMBERS										
0161 PFL0924-CK (162)	0.07	7.75%	X	224.8	1.30	0.04	5.48%	0.20	38.84	56.1
0162 PFL0924-CL (163)	0.11	7.13%	1.8	311.6	1.25	0.02	3.73%	0.11	35.26	37.5
0163 PFL0924-CM (164)	0.37	6.31%	3.1	559.3	1.85	0.09	5.17%	0.18	53.89	37.7
0164 PFL0924-CN (165)	0.15	5.94%	6.9	397.5	2.03	0.09	4.79%	0.24	85.06	49.7
0165 PFL0924-CO (166)	0.40	2.71%	0.6	60.6	0.52	0.22	3.08%	0.14	20.06	19.9
0166 PFL0924-CP (167)	0.23	1.48%	1.7	18.9	0.50	0.08	2.70%	0.14	30.31	20.0
0167 PFL0924-CQ (168)	0.24	1.54%	1.6	23.4	0.51	0.15	3.84%	0.18	12.07	10.4
0168 PFL0924-CR (169)	0.12	7.59%	0.8	568.7	1.86	X	2.78%	0.04	44.04	10.7
0169 PFL0924-CS (170)	0.07	7.30%	0.8	763.1	0.92	0.07	2.31%	0.07	39.74	11.8
0170 PFL0924-CT (171)	1.51	8.52%	3.3	469.1	1.60	0.05	8798	0.18	78.14	19.8
0171 PFL0924-CU (172)	0.16	9722	16.8	11.4	0.50	0.16	2.54%	0.12	12.17	8.5
0172 PFL0924-CV (173)	1.43	3.46%	X	64.9	1.20	0.80	3.82%	0.27	40.28	33.4
0173 PFL0924-CW (174)	0.10	7.69%	1.0	580.2	1.51	0.12	2.94%	0.04	54.55	12.9
0174 PFL0924-CX (175)	0.88	3.64%	1.8	85.3	0.61	0.35	861	0.04	14.47	4.9
0175 PFL0924-CY (176)	0.14	7.19%	9.8	463.3	1.52	0.18	6.25%	0.12	57.69	13.7
CHECKS										
0001 PFL0924-06	0.05	7.79%	0.8	591.1	1.54	0.10	2.82%	0.06	53.03	11.7
0002 PFL0924-55	0.07	8.34%	3.2	220.2	1.31	0.18	2.75%	0.07	60.44	18.8
0003 PFL0924-79	0.13	7.77%	4.4	585.9	0.89	0.01	2.12%	0.06	63.35	22.9
0004 PFL0924-93	3.86	8.11%	2.2	1190.5	1.29	0.03	3.85%	0.13	40.21	28.3
0005 PFL0924-AT (119)	X	7.44%	X	356.1	0.98	X	3.59%	0.05	22.49	17.8
0006 PFL0924-BS (144)	0.10	10.31%	3.4	348.9	1.19	0.09	3.23%	0.29	36.46	103.6
STANDARDS										
0001 OREAS 25a	0.05	9.07%	10.0	151.0	0.98	0.36	3162	0.06	51.53	8.2
0002 AMISO441	2.54	3.38%	2961.7	81.1	0.78	0.43	4.65%	37.17	23.63	45.2
0003 OREAS 46	X	6.38%	0.8	482.8	0.96	0.05	2.42%	0.07	36.99	10.2
0004 OREAS 299	6.38	2.88%	54.7	325.4	0.95	1.47	4200	0.20	49.29	19.0
0005 OREAS 25a	X	8.97%	9.9	147.7	0.94	0.36	2941	0.06	50.16	7.9
0006 OREAS 606	1.09	6.93%	109.3	2698.3	2.66	6.27	5258	0.96	86.02	4.6
0007 OREAS 684	0.34	5.99%	0.8	72.2	0.17	0.37	4.41%	0.11	6.79	115.4
BLANKS										
0001 Control Blank	X	X	X	X	X	X	X	X	X	X
0002 Control Blank	X	X	X	0.1	X	X	X	X	0.01	X
0003 Control Blank	X	80	X	0.7	X	X	X	X	0.05	X
0004 Control Blank	X	X	X	X	X	X	X	X	0.01	X
0005 Control Blank	X	X	X	0.1	X	X	X	X	0.02	X
0006 Control Blank	X	X	X	X	X	X	X	X	X	X



ELEMENTS	Cr	Cs	Cu	Fe	Ga	Ge	Hf	In	K	La
UNITS	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	1	0.05	0.5	0.01	0.05	0.1	0.05	0.01	20	0.01
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	OE	MS	MS	OE	MS	MS	MS	MS	OE	MS
SAMPLE NUMBERS										
0161 PFL0924-CK (162)	133	0.19	86.3	10.58	21.93	1.6	1.90	0.08	3558	18.19
0162 PFL0924-CL (163)	450	1.02	128.6	5.77	18.46	1.2	2.67	0.04	1.15%	19.61
0163 PFL0924-CM (164)	48	0.27	382.1	8.61	17.98	1.2	2.90	0.05	6467	27.07
0164 PFL0924-CN (165)	14	0.27	331.5	11.17	18.43	1.4	2.43	0.06	5014	41.73
0165 PFL0924-CO (166)	41	0.12	106.4	12.04	9.43	1.2	0.58	0.03	1508	6.93
0166 PFL0924-CP (167)	43	0.14	74.1	16.72	9.02	1.4	0.50	0.05	714	9.12
0167 PFL0924-CQ (168)	28	0.17	64.8	13.61	6.60	1.5	0.57	0.04	411	4.57
0168 PFL0924-CR (169)	15	0.28	26.9	2.51	19.20	0.9	2.75	0.01	2.54%	29.03
0169 PFL0924-CS (170)	28	0.49	41.6	3.05	17.13	0.8	3.03	0.02	2.93%	23.10
0170 PFL0924-CT (171)	142	0.69	107.3	3.74	21.18	1.3	3.65	0.06	1.11%	41.84
0171 PFL0924-CU (172)	25	0.19	41.4	12.06	4.16	1.3	0.33	0.03	333	4.89
0172 PFL0924-CV (173)	85	0.09	243.9	19.91	14.99	1.5	1.20	0.04	1386	16.80
0173 PFL0924-CW (174)	38	1.20	19.9	4.06	20.29	0.9	3.07	0.02	2.67%	30.29
0174 PFL0924-CX (175)	64	0.09	35.8	6.94	13.28	1.5	1.53	0.02	1071	9.50
0175 PFL0924-CY (176)	30	0.59	13.7	6.62	17.07	1.2	2.37	0.03	2.98%	27.89

CHECKS

0001 PFL0924-06	53	0.09	19.9	3.84	18.71	0.9	3.06	0.04	1.61%	26.54
0002 PFL0924-55	39	0.21	58.3	4.12	22.26	0.8	2.05	0.03	6053	30.74
0003 PFL0924-79	72	0.58	53.9	5.93	19.07	0.9	2.62	0.04	1.65%	35.25
0004 PFL0924-93	125	0.28	51.1	5.25	20.02	1.1	2.16	0.03	1.73%	21.45
0005 PFL0924-AT (119)	70	0.09	31.3	4.21	19.06	0.9	1.03	0.03	1.13%	11.97
0006 PFL0924-BS (144)	281	0.64	61.0	9.27	22.27	1.2	1.63	0.05	6927	19.65

STANDARDS

0001 OREAS 25a	109	6.40	33.8	6.61	26.74	1.8	4.66	0.09	4806	21.94
0002 AMISO441	613	0.95	326.3	11.95	9.46	1.1	1.09	0.22	5671	10.64
0003 OREAS 46	55	0.69	24.0	2.71	14.57	1.1	1.99	0.03	1.21%	19.38
0004 OREAS 299	158	3.64	501.9	2.39	7.78	1.2	3.27	0.09	1.06%	24.79
0005 OREAS 25a	112	6.50	33.8	6.58	26.59	1.8	4.66	0.09	4728	23.32
0006 OREAS 606	33	5.42	276.1	1.73	22.57	1.5	2.53	0.16	3.20%	41.38
0007 OREAS 684	1.26%	0.23	979.1	8.12	11.29	1.4	0.37	0.03	1488	3.44

BLANKS

0001 Control Blank	X	X	X	X	X	X	X	X	X	X
0002 Control Blank	X	X	X	X	X	X	X	X	X	X
0003 Control Blank	X	X	X	X	X	X	X	X	X	0.02
0004 Control Blank	1	X	X	X	X	X	X	X	X	X
0005 Control Blank	3	X	X	X	X	X	X	X	X	X
0006 Control Blank	2	X	X	X	X	X	X	X	X	X



ELEMENTS	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.1	20	1	0.1	20	0.05	0.5	50	0.5	0.05
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	OE	MS	OE	MS	MS	OE	MS	MS
SAMPLE NUMBERS										
0161 PFL0924-CK (162)	15.0	2.68%	1793	1.9	1.85%	9.03	95.9	634	4.9	5.92
0162 PFL0924-CL (163)	15.2	2.77%	947	1.0	2.19%	7.39	212.3	685	8.5	39.94
0163 PFL0924-CM (164)	16.4	1.90%	1978	2.1	2.28%	16.46	41.2	943	12.1	9.90
0164 PFL0924-CN (165)	15.1	1.85%	1629	1.2	1.87%	23.42	39.8	976	8.8	13.85
0165 PFL0924-CO (166)	10.5	1.34%	4345	9.2	8093	3.13	32.5	373	1.6	2.47
0166 PFL0924-CP (167)	10.3	2.95%	4868	8.0	3209	6.72	33.8	951	0.9	2.29
0167 PFL0924-CQ (168)	12.7	1.52%	5705	6.3	2662	1.45	18.8	409	1.9	1.60
0168 PFL0924-CR (169)	19.9	3389	579	1.5	1.95%	5.05	15.1	756	13.7	64.92
0169 PFL0924-CS (170)	14.3	4333	769	1.2	1.58%	5.55	19.1	737	16.6	79.24
0170 PFL0924-CT (171)	12.9	3896	405	1.8	9907	10.68	56.8	234	25.2	37.87
0171 PFL0924-CU (172)	8.1	9607	4661	2.2	1453	1.57	21.7	438	1.1	0.97
0172 PFL0924-CV (173)	13.1	1.83%	4895	9.9	1.01%	2.40	49.9	588	3.4	2.03
0173 PFL0924-CW (174)	14.5	3312	1180	2.0	1.97%	5.98	25.1	644	10.8	90.36
0174 PFL0924-CX (175)	17.5	603	260	5.6	1355	2.40	21.0	297	10.1	2.73
0175 PFL0924-CY (176)	14.1	7846	3154	2.8	1.35%	6.27	25.7	772	12.8	81.75
CHECKS										
0001 PFL0924-06	10.1	3857	644	0.9	2.62%	6.79	31.7	795	12.3	37.59
0002 PFL0924-55	27.8	9300	837	1.1	3.31%	8.92	42.9	1147	7.6	16.05
0003 PFL0924-79	16.4	1.57%	1184	1.1	3.41%	7.60	57.5	677	10.9	23.05
0004 PFL0924-93	16.1	1.92%	929	2.8	2.62%	5.93	85.5	582	13.1	36.09
0005 PFL0924-AT (119)	17.0	1.25%	769	3.5	2.73%	3.19	39.1	454	4.4	18.41
0006 PFL0924-BS (144)	14.8	1.95%	1194	1.2	1.29%	4.56	499.4	421	10.5	25.47
STANDARDS										
0001 OREAS 25a	37.3	3274	476	2.5	1335	22.10	46.8	497	24.8	64.20
0002 AMISO441	22.2	2.24%	2655	1.5	2284	6.85	318.8	381	473.4	20.84
0003 OREAS 46	10.5	9725	489	0.7	2.64%	4.66	28.4	554	7.4	35.54
0004 OREAS 299	22.4	5012	216	8.2	3672	9.81	55.0	240	111.2	65.91
0005 OREAS 25a	36.5	3234	473	2.6	1305	22.28	45.4	486	25.1	61.26
0006 OREAS 606	43.3	3686	104	4.0	1.74%	15.17	14.8	805	117.7	167.78
0007 OREAS 684	3.8	10.55%	1267	1.2	6850	1.19	2218.3	118	11.1	5.81
BLANKS										
0001 Control Blank	X	X	X	X	X	X	X	X	X	X
0002 Control Blank	X	X	1	X	23	X	X	X	X	X
0003 Control Blank	X	X	2	X	81	X	X	X	X	0.07
0004 Control Blank	X	X	X	X	X	X	X	X	X	X
0005 Control Blank	X	X	X	X	X	X	X	X	X	X
0006 Control Blank	X	X	X	X	X	X	X	X	X	X



ELEMENTS	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.002	50	0.05	0.1	0.5	0.1	0.05	0.01	0.2	0.01
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	MS	OE	MS	MS	MS	MS	MS	MS	MS	MS
SAMPLE NUMBERS										
0161 PFL0924-CK (162)	X	104	X	36.8	0.8	1.2	190.44	0.60	X	0.80
0162 PFL0924-CL (163)	X	2323	0.42	16.1	0.5	0.5	222.92	0.47	X	1.19
0163 PFL0924-CM (164)	X	9538	0.09	11.3	0.8	1.1	365.49	1.04	X	3.05
0164 PFL0924-CN (165)	X	7137	0.15	11.4	1.0	1.3	365.54	1.57	X	4.10
0165 PFL0924-CO (166)	0.002	3.00%	X	5.6	0.6	0.6	71.07	0.12	0.6	0.13
0166 PFL0924-CP (167)	0.002	2.18%	X	15.9	1.4	0.8	27.47	0.32	X	0.26
0167 PFL0924-CQ (168)	X	2.06%	X	3.1	0.6	0.9	20.20	0.07	0.3	0.11
0168 PFL0924-CR (169)	0.003	4368	X	5.5	X	0.5	188.01	0.31	X	2.04
0169 PFL0924-CS (170)	X	2027	X	7.3	X	0.3	192.00	0.25	X	2.05
0170 PFL0924-CT (171)	X	199	0.12	20.2	0.9	2.0	161.55	0.68	X	8.58
0171 PFL0924-CU (172)	X	1.27%	0.05	3.3	0.5	0.5	11.74	0.06	0.3	0.21
0172 PFL0924-CV (173)	0.006	7.59%	X	9.9	2.2	1.8	125.22	0.16	1.2	0.94
0173 PFL0924-CW (174)	X	2182	0.06	6.7	X	1.1	324.26	2.46	X	7.07
0174 PFL0924-CX (175)	0.003	2008	0.06	4.5	0.5	1.2	19.51	0.21	0.5	2.49
0175 PFL0924-CY (176)	X	6145	0.14	8.8	X	1.1	179.44	0.60	X	4.48
CHECKS										
0001 PFL0924-06	X	X	0.12	12.4	X	0.7	271.11	0.48	X	1.41
0002 PFL0924-55	X	1860	0.08	7.8	X	0.6	312.70	0.40	X	3.58
0003 PFL0924-79	X	2680	X	11.2	X	0.5	343.94	0.42	X	7.62
0004 PFL0924-93	X	50	0.16	11.8	X	1.6	510.76	0.31	X	2.06
0005 PFL0924-AT (119)	X	1699	0.06	11.2	X	0.7	224.32	0.17	X	0.18
0006 PFL0924-BS (144)	X	75	0.25	23.2	0.6	0.9	157.93	0.31	X	3.49
STANDARDS										
0001 OREAS 25a	X	497	0.63	14.8	2.6	4.0	48.04	1.56	X	16.28
0002 AMISO441	X	4.09%	164.93	10.8	3.1	1.8	102.92	1.14	0.4	2.18
0003 OREAS 46	X	X	0.10	9.1	X	0.8	414.73	0.26	X	3.29
0004 OREAS 299	0.007	5974	19.20	5.7	1.2	2.1	45.83	1.06	0.5	13.46
0005 OREAS 25a	X	492	0.66	14.4	3.1	4.1	48.24	1.62	X	15.92
0006 OREAS 606	0.003	4980	20.38	3.6	2.0	4.3	223.72	1.11	0.8	15.91
0007 OREAS 684	0.002	4622	0.18	19.0	2.3	0.6	161.18	0.07	0.8	0.77
BLANKS										
0001 Control Blank	X	X	X	X	X	X	X	X	X	X
0002 Control Blank	X	X	X	X	X	X	0.08	X	X	X
0003 Control Blank	X	X	X	X	X	X	0.40	X	X	X
0004 Control Blank	X	X	X	X	X	X	X	X	X	X
0005 Control Blank	X	X	X	X	X	X	0.05	X	X	X
0006 Control Blank	X	X	X	X	X	X	X	X	X	X



ELEMENTS	Ti	Tl	U	V	W	Y	Zn	Zr
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	5	0.02	0.01	1	0.1	0.05	1	0.1
DIGEST	4A/	4A/	4A/	4A/	4A/	4A/	4A/	4A/
ANALYTICAL FINISH	OE	MS	MS	OE	MS	MS	MS	MS
SAMPLE NUMBERS								
0161 PFL0924-CK (162)	8265	0.07	0.20	285	6.2	30.10	194	65.6
0162 PFL0924-CL (163)	4941	0.19	0.42	123	6.7	9.57	86	104.5
0163 PFL0924-CM (164)	6204	0.06	0.87	80	10.2	15.39	123	107.8
0164 PFL0924-CN (165)	1.08%	0.07	0.57	166	13.7	17.47	122	79.6
0165 PFL0924-CO (166)	2061	0.02	0.06	37	0.7	14.83	65	16.2
0166 PFL0924-CP (167)	4461	X	0.07	80	0.3	23.94	121	9.4
0167 PFL0924-CQ (168)	1176	X	0.06	27	3.8	10.06	83	12.8
0168 PFL0924-CR (169)	3377	0.33	0.31	58	115.1	3.69	30	110.1
0169 PFL0924-CS (170)	3089	0.33	0.46	62	6.4	9.95	44	116.3
0170 PFL0924-CT (171)	5523	0.25	1.37	116	12.9	16.24	88	124.1
0171 PFL0924-CU (172)	939	X	0.05	27	0.3	9.69	55	8.3
0172 PFL0924-CV (173)	2276	0.03	0.25	77	124.5	20.30	59	35.8
0173 PFL0924-CW (174)	2746	0.46	1.42	48	20.3	9.20	45	107.8
0174 PFL0924-CX (175)	1169	0.04	0.34	71	136.1	1.77	38	52.5
0175 PFL0924-CY (176)	3128	0.54	1.27	64	36.5	13.83	59	80.6
CHECKS								
0001 PFL0924-06	3474	0.17	0.51	83	0.3	13.84	64	117.3
0002 PFL0924-55	4434	0.08	0.87	75	1.3	9.73	68	81.4
0003 PFL0924-79	4175	0.13	0.62	88	24.7	11.05	59	99.4
0004 PFL0924-93	3476	0.19	0.37	81	5.1	12.28	75	79.3
0005 PFL0924-AT (119)	3533	0.10	0.11	93	4.6	8.39	49	36.1
0006 PFL0924-BS (144)	4003	0.21	0.85	122	3.3	14.52	315	57.6
STANDARDS								
0001 OREAS 25a	9502	0.35	2.94	155	2.3	12.16	46	169.9
0002 AMISO441	467	0.37	1.19	63	6.2	7.06	1052	42.7
0003 OREAS 46	2121	0.20	0.73	57	0.2	11.03	36	68.7
0004 OREAS 299	2994	0.40	50.60	42	5.9	10.68	76	112.5
0005 OREAS 25a	9585	0.35	2.91	152	2.3	13.50	45	170.1
0006 OREAS 606	1673	1.21	4.61	23	2.6	11.83	184	67.3
0007 OREAS 684	1391	0.07	0.23	169	0.6	4.35	100	12.1
BLANKS								
0001 Control Blank	X	X	X	X	X	X	X	X
0002 Control Blank	X	X	X	X	X	X	3	X
0003 Control Blank	6	X	X	X	X	X	X	X
0004 Control Blank	X	X	X	X	X	X	X	X
0005 Control Blank	X	X	X	X	X	X	X	X
0006 Control Blank	X	X	X	X	X	X	X	X



METHOD CODE DESCRIPTION

Method Code Date Tested Package	Analysing Laboratory NATA Laboratory Accreditation	NATA Scope of Accreditation
4A/MS 19/01/25 00:41 4A/OM48	Intertek Genalysis Perth 3244 3237 Multi-acid digest including Hydrofluoric, Nitric, Perchloric and Hydrochloric acids in Teflon Tubes. Analysed by Inductively Coupled Plasma Mass Spectrometry.	MPL_W002, MS_IM_001(Per)
4A/OE 19/01/25 00:41 4A/OM48	Intertek Genalysis Perth 3244 3237 Multi-acid digest including Hydrofluoric, Nitric, Perchloric and Hydrochloric acids in Teflon Tubes. Analysed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry.	ICP_IM_001(Per), MPL_W002

* Denotes not on Scope of Accreditation

Laboratory Report

Client:	MPL Laboratories	Date received: 20/05/2025
Client address:	16-18 Hayden Court, Myaree WA 6154	Date analysed: 29/05/2025
Job number:	25_0905	Date reported: 04/05/2025
Lab ID:	25_0905_001	
Client ID:	PFL0924-CF	
Revision No.	0	
Analysis:	Fibre characterisation by scanning electron microscopy (SEM) with elemental analysis by energy dispersive spectroscopy (EDS) – Bulk Samples	
Comments:	-	

Executive summary

The sample was determined to contain asbestos mineral fibre.

Sample preparation

The sampling was not conducted by Microanalysis Australia staff. The sample was supplied to Microanalysis Australia as a bulk sample. The sample preparation was completed in accordance with AS 4964, modified for suitability to SEM analysis.

The sample was examined for fibrous material for selective sub-sampling. If no fibrous material was visibly apparent, a representative sub-sample was removed/sieved at 150µm for analysis of the undersize. The sub-sample was placed on top of a double-sided carbon tab before being coated with approximately 10 nm of carbon. Non-conducting samples require coating prior to SEM analysis to prevent charging whilst being analysed by the electron beam.

Analysis

The SEM/EDS analysis was conducted in accordance with ISO14966-2002 (modified for non-gold coated MCE membranes) and VDI3492-2004.

The sample was analysed using a Carl Zeiss EVO50 scanning electron microscope (SEM) fitted with an Oxford INCA X-Max energy dispersive spectrometer (EDS).

EDS is a semi-quantitative technique (at best) on well prepared, optically flat samples. Factors such as sample unevenness may adversely bias elemental concentration interpretation. EDS has a spatial resolution of ~5 µm meaning spectra from particles less than this size may contain elemental concentrations biased by their surroundings.

All images were acquired using backscatter electrons. Image brightness is proportional to average atomic number – the brighter the pixel, the higher the atomic number of the element.

Chrysotile (white asbestos) or more technically correct, asbestiform Antigorite, has the stoichiometric formula $Mg_3Si_2O_5(OH)_2$. The relative concentration of elements in decreasing order is: O, Mg, Si and H (H is not detectable by EDS).

The Actinolite-Tremolite solid solution series has the stoichiometric formula $Ca_2(Fe,Mg)_5Si_8O_{22}(OH)_2$. Tremolite is the magnesium rich endmember, and Actinolite and Ferro-actinolite form the iron rich end of the series. The relative concentration of elements in decreasing order is: O, Si, (Fe,Mg), Ca and H (H is not detectable by EDS). Actinolite and Tremolite are amphibole asbestos minerals with a fibrous habit characterised by parallel sided, blocky fibres with irregular terminations.

Crocidolite (blue asbestos) has the stoichiometric formula $\text{Na}_2(\text{Fe,Mg})_3\text{Fe}_2\text{Si}_8\text{O}_{22}(\text{OH})_2$. The relative concentration of elements in decreasing order is: O, Si, Fe, Mg, Na and H (H is not detectable by EDS). As the parent mineral of Crocidolite, Riebeckite has the same stoichiometry as its asbestiform counterpart, but different morphology.

Anthophyllite and Grunerite are part of the amphibole Cummingtonite-Grunerite mineral series. Grunerite is commercially known as Amosite or brown asbestos. The series has the stoichiometric formula $\text{Mg}_2\text{Mg}_5\text{Si}_8\text{O}_{22}(\text{OH})_2 - \text{Fe}_2\text{Fe}_5\text{Si}_8\text{O}_{22}(\text{OH})_2$. Anthophyllite is fibrous and polymorphic with the magnesium endmember, and Grunerite is the iron endmember. The relative concentration of elements in decreasing order is: O, Si, (Fe,Mg) and H (H is not detectable by EDS).

Summary

Following NOHSC:3003 "The Membrane Filter Method" (2005), a fibre is countable if its diameter is $< 3 \mu\text{m}$ and its length is $> 5 \mu\text{m}$ and has an aspect ratio of greater than 3 to 1. Following the DMIRS document "Management of Asbestos in Mining Operations" page 3, referencing Section 9.33.3 of Mines, Safety and Inspection Regulations 1995, a fibre is countable if its diameter is $< 1 \mu\text{m}$ and its length is $> 5 \mu\text{m}$. For the purposes of this analysis the NOHSC document definition has been used. Please note that with the release of the Work Health and Safety (Mines) Regulations 2022, the counting criteria for fibrous minerals used in mining applications has been brought in line with NOHSC:3003 (see Work Health and Safety (Mines) Regulations 2022 Part1.1 R5). The 2022 criteria will be used unless the previous DMIRS definition is specifically requested by the client.

A total of at least **100** images/fields were examined. Each field was approximately $57 \mu\text{m}$ by $43 \mu\text{m}$ - a total area of $2.45 \times 10^{-3} \text{ mm}^2$. Note: The higher magnification used in this report means the total area analysed is less than the area analysed by NOHSC:3003. The number of fibres counted/reported herein would need to be scaled accordingly for comparison with optical methods.

In the area examined, a total of **more than 100** countable fibres were observed. **The majority of observed fibres had a composition and morphology indicative of actinolite and chrysotile, asbestos mineral fibres.**

A selection of images/fields and associated elemental spectra are reported below. The fields are not representative of the fields analysed. Asbestos mineral fibre or other inorganic mineral fibre has been preferentially shown.

Fibre #	Image/Field #	Diameter (μm)	Length (μm)	Aspect ratio	Major Elements	Minor Elements	Morphology	Assigned mineralogy
1	2/3	1.1	9.1	8 :1	O, Si, Mg	Fe, Ca	Irregular ends	Actinolite
2	3/7	1.2	7.2	6 :1	O, Si, Mg	Fe, Ca, Al	Parallel	Actinolite
3	4/8	1.8	11.9	7 :1	O, Si, Fe	Mg, Ca, Al	Parallel	Ferroactinolite
4	5/9	0.4	8.4	21 :1	O, Si, Mg	Fe, Ca	Irregular	Actinolite
5	8/22	1.2	26.2	22 :1	O, Mg, Si	Fe, Ca	Bundle	Chrysotile
6	9/25	0.6	7.3	12 :1	O, Si, Mg	Fe, Ca, Al	Irregular ends	Actinolite
7	12/34	0.8	7.6	10 :1	O, Si, Mg	Fe, Ca, S, Al	Irregular ends	Actinolite

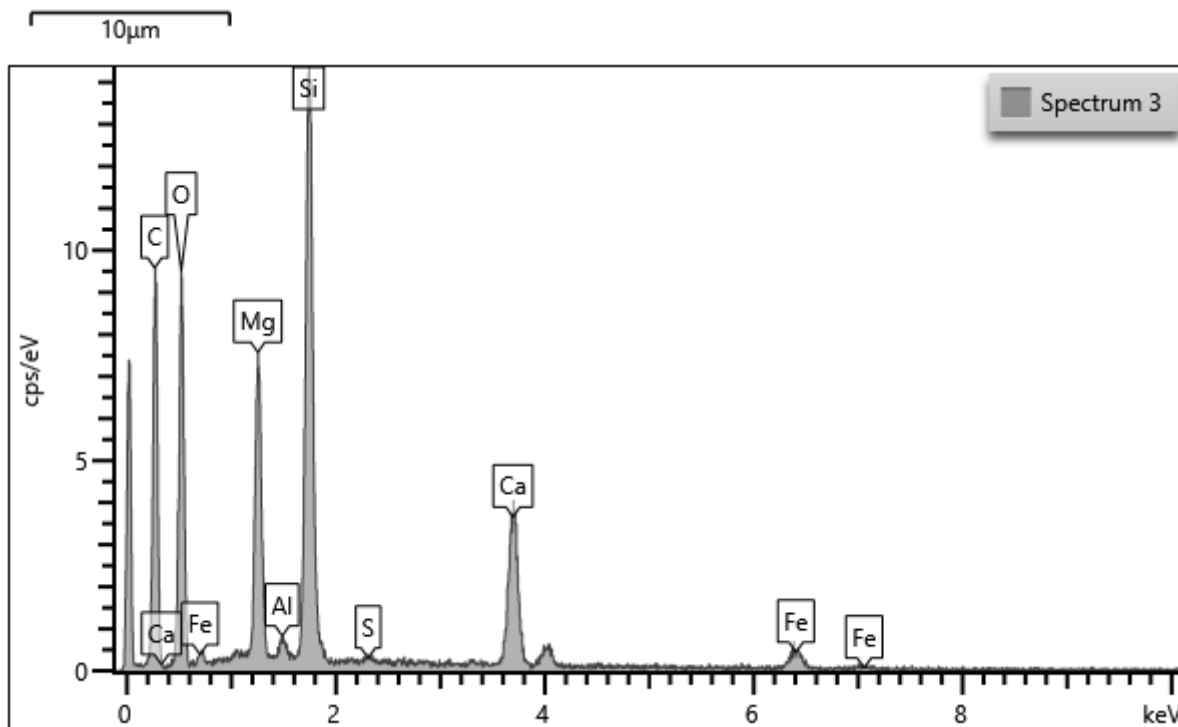
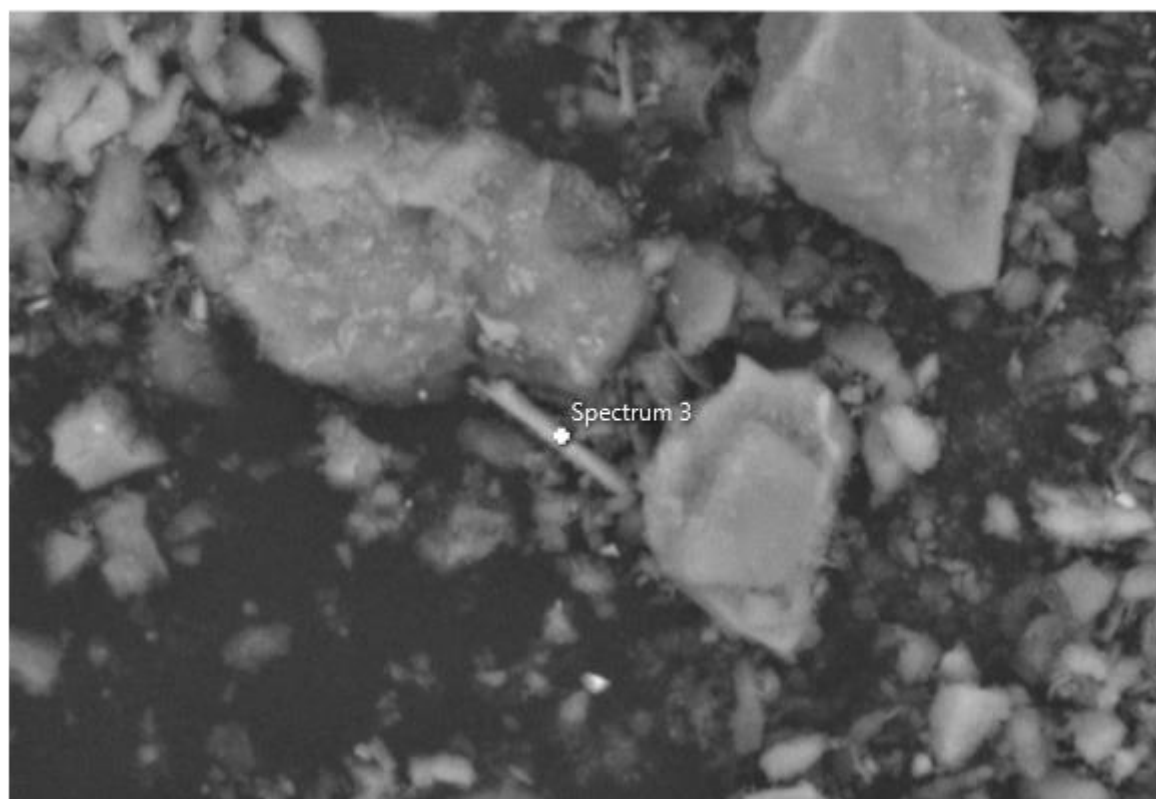
It should be noted that the higher resolution of the SEM may increase the number of fibres observed when compared with optical microscopy (as specified in the Membrane Filter Method). The results are representative only of the sample received.

Analyst: Kate Putman, B.Sc. (Hons)

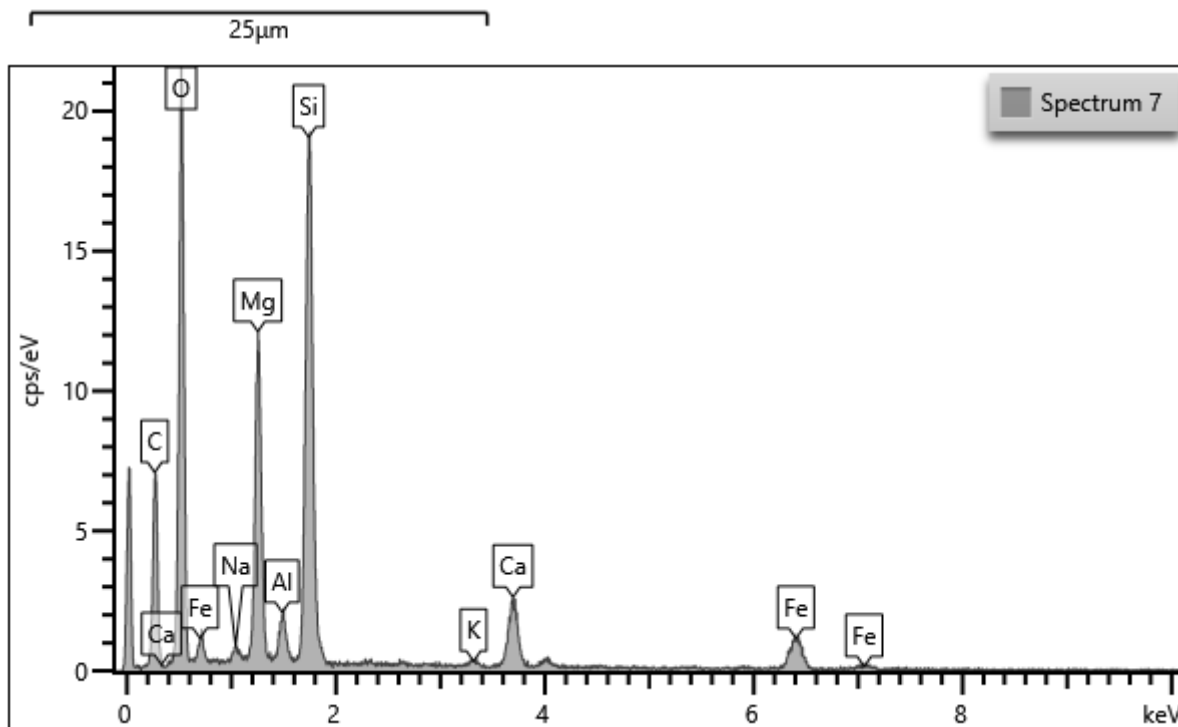
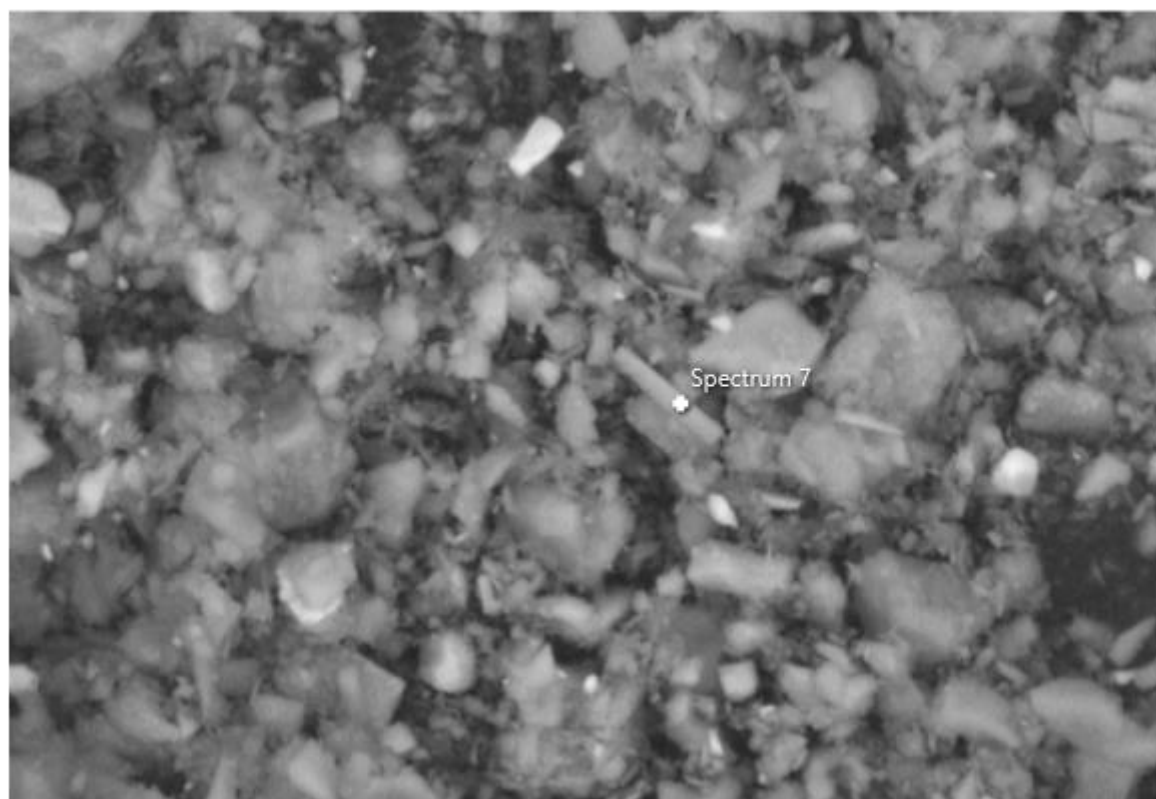
Reported: Kate Putman, B.Sc. (Hons)

Authorised: Sandy Lam, B.Sc.(Multidisciplinary)

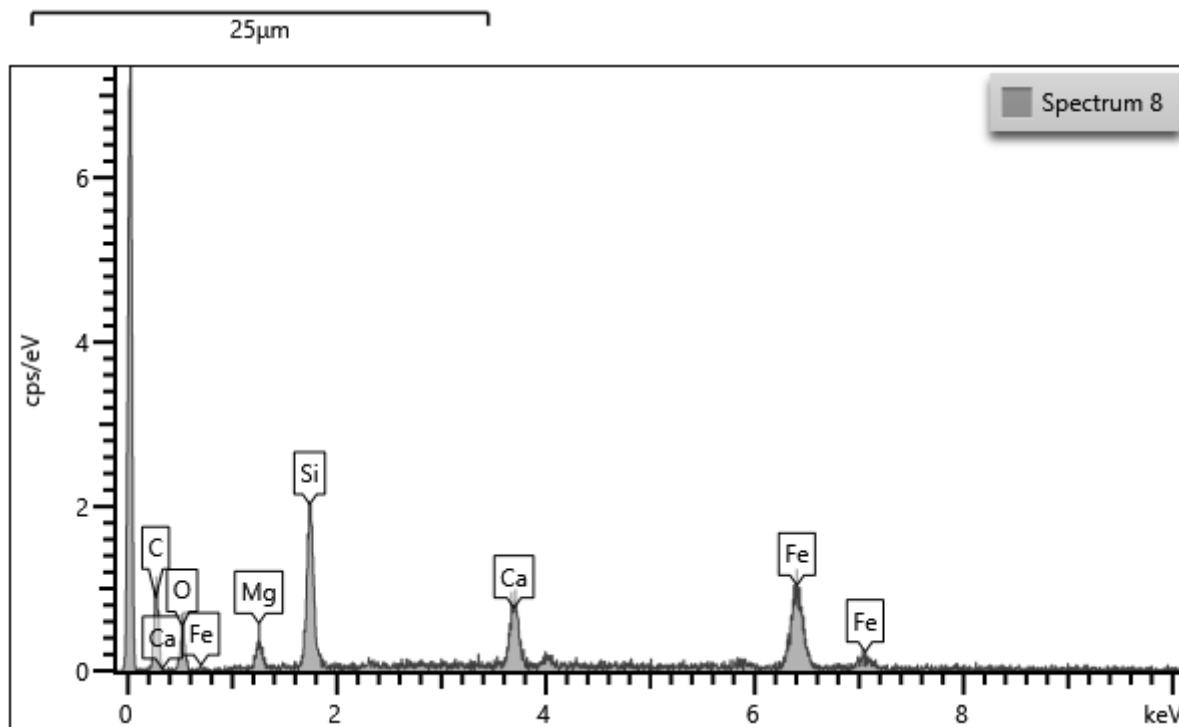
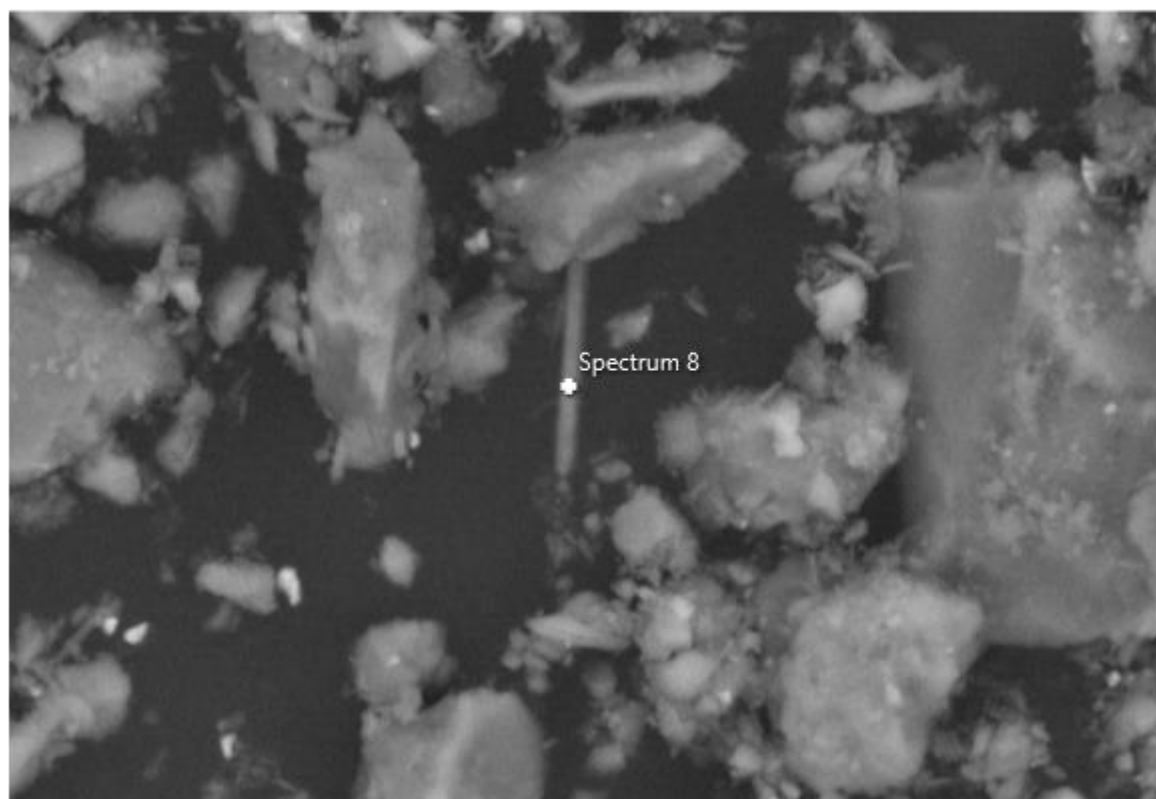
Electron Image 2 (SE)



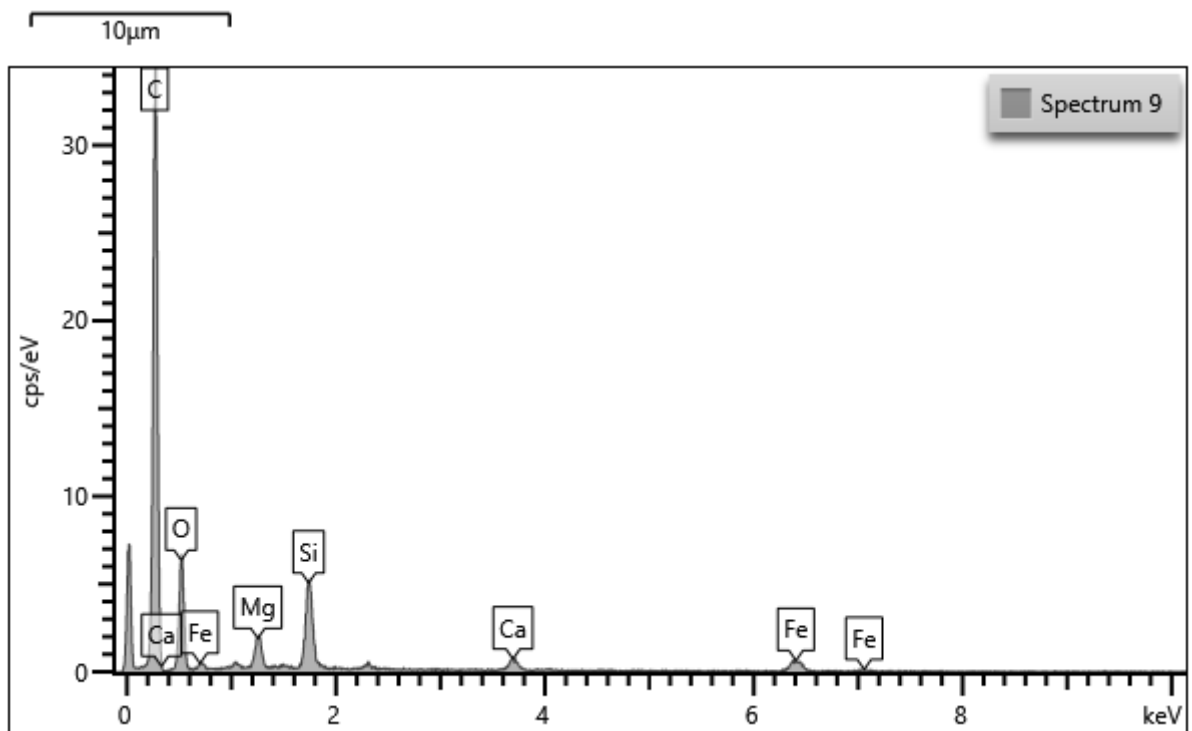
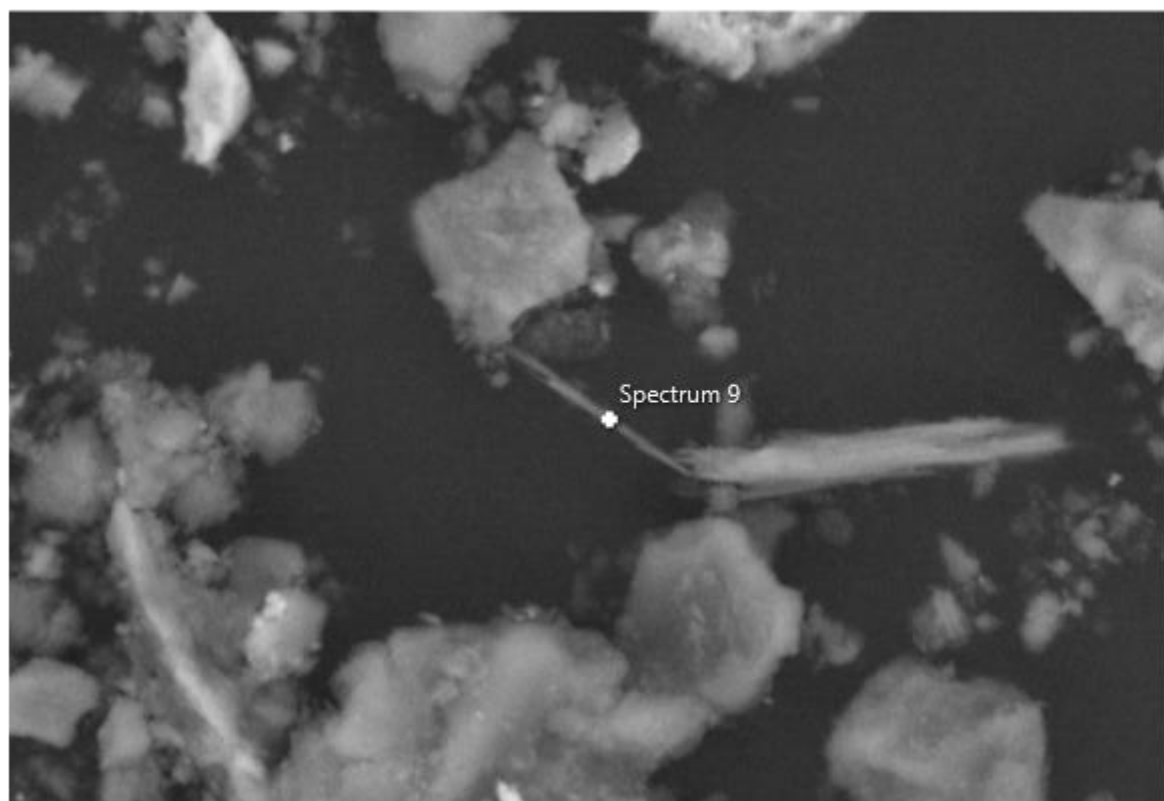
Electron Image 3 (SE)



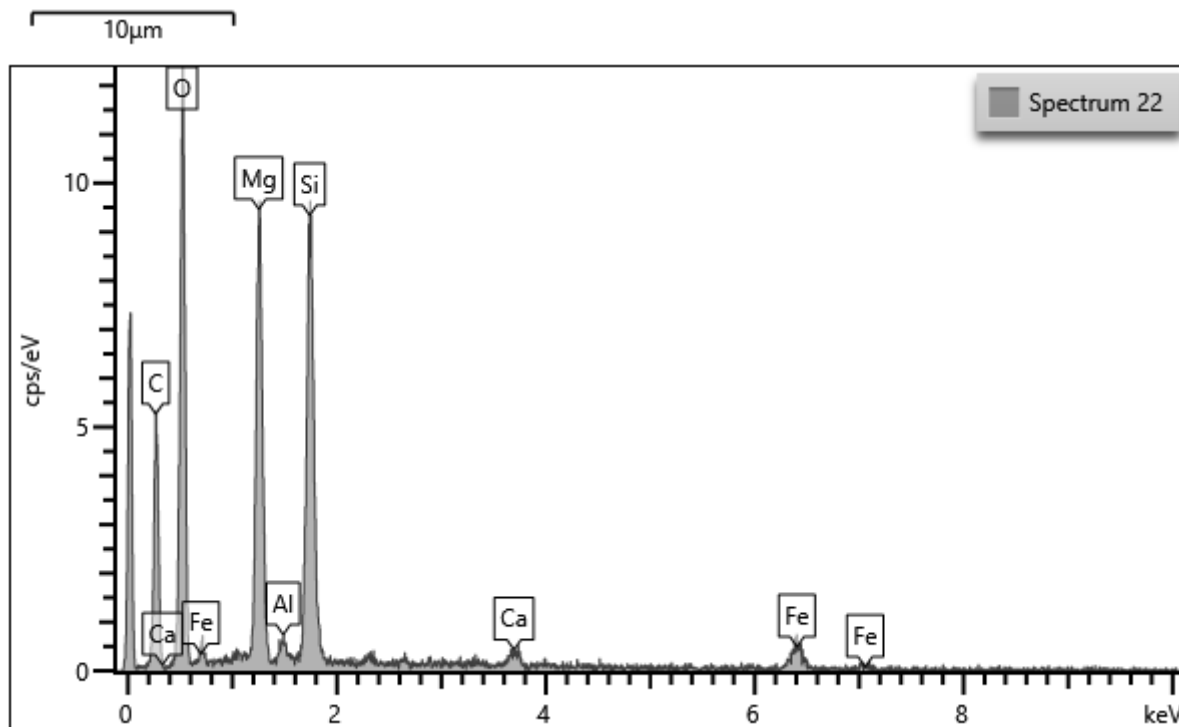
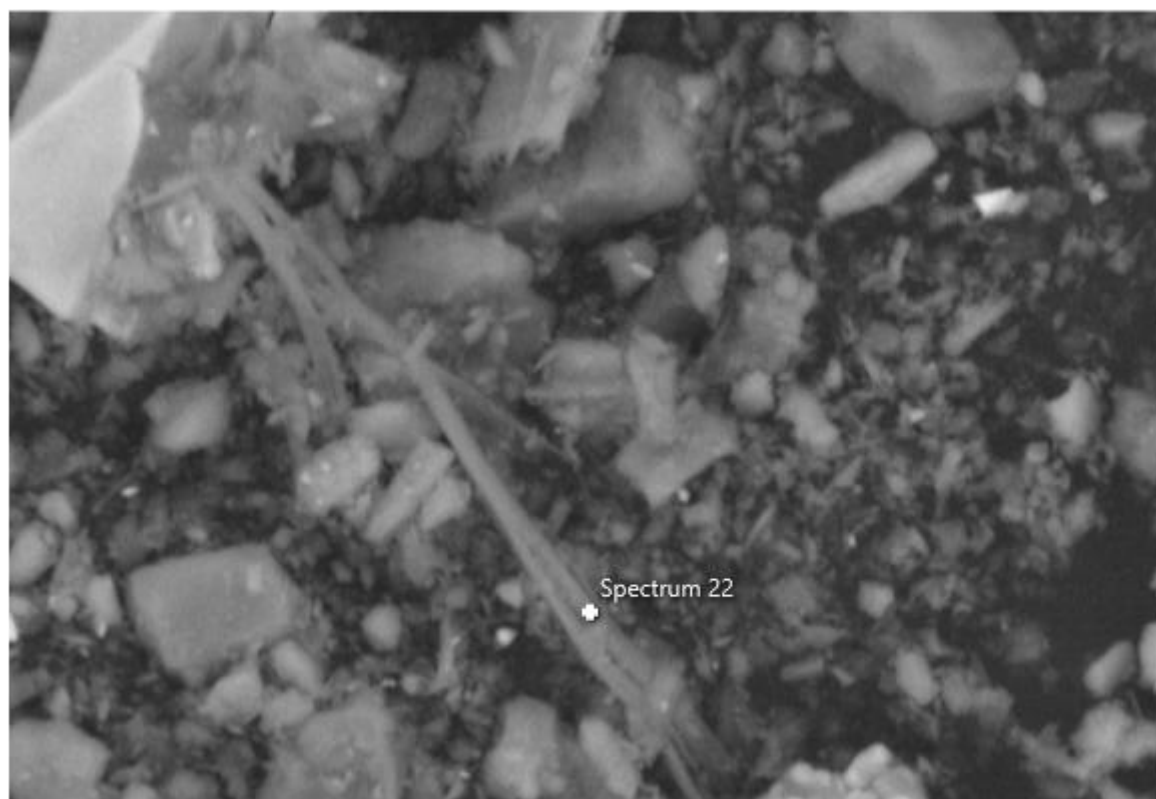
Electron Image 4 (SE)



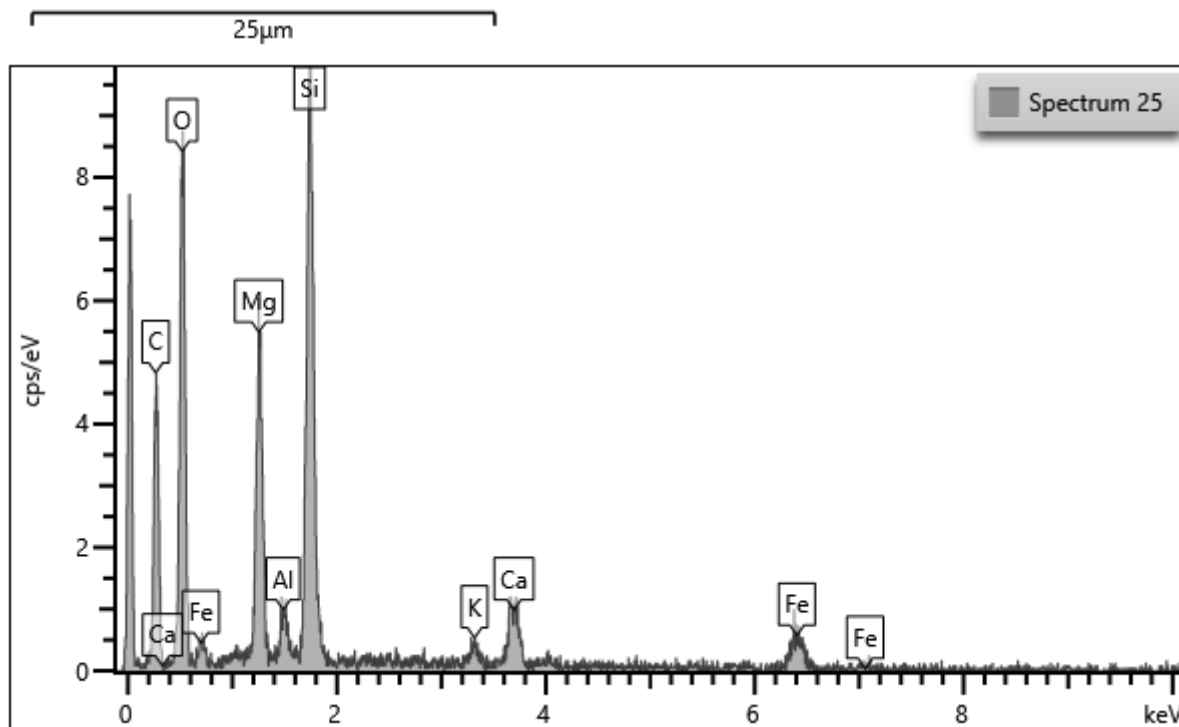
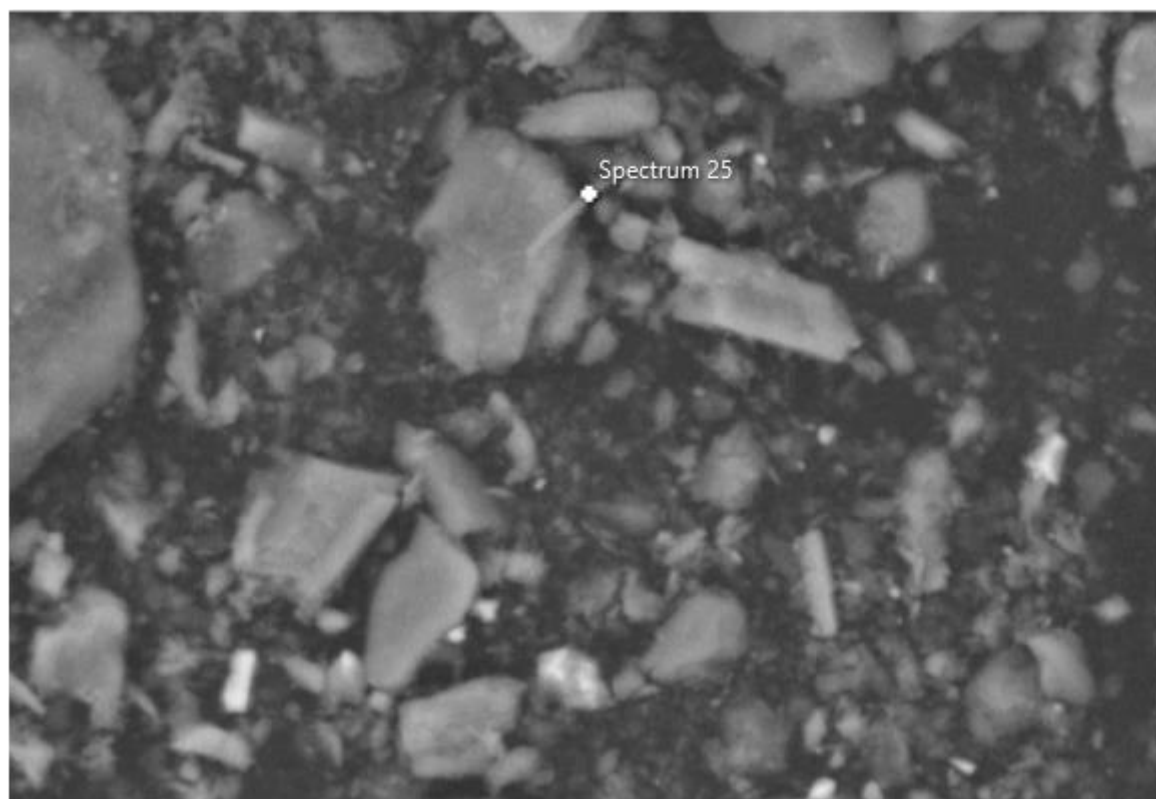
Electron Image 5 (SE)



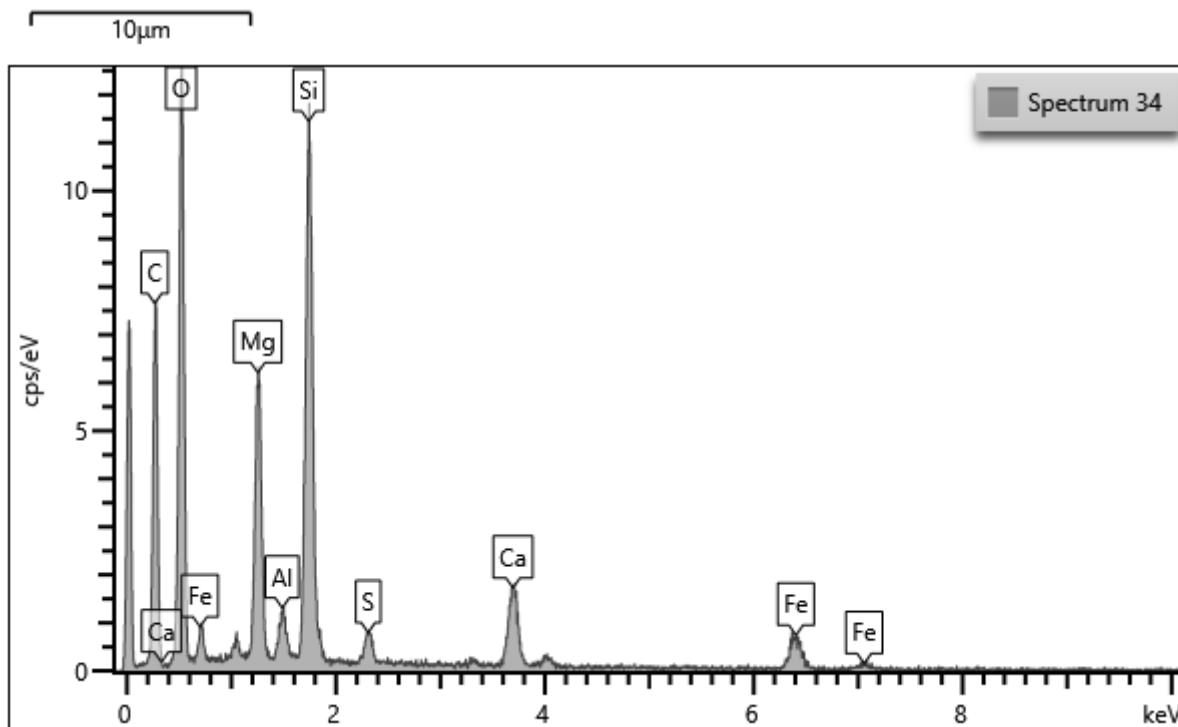
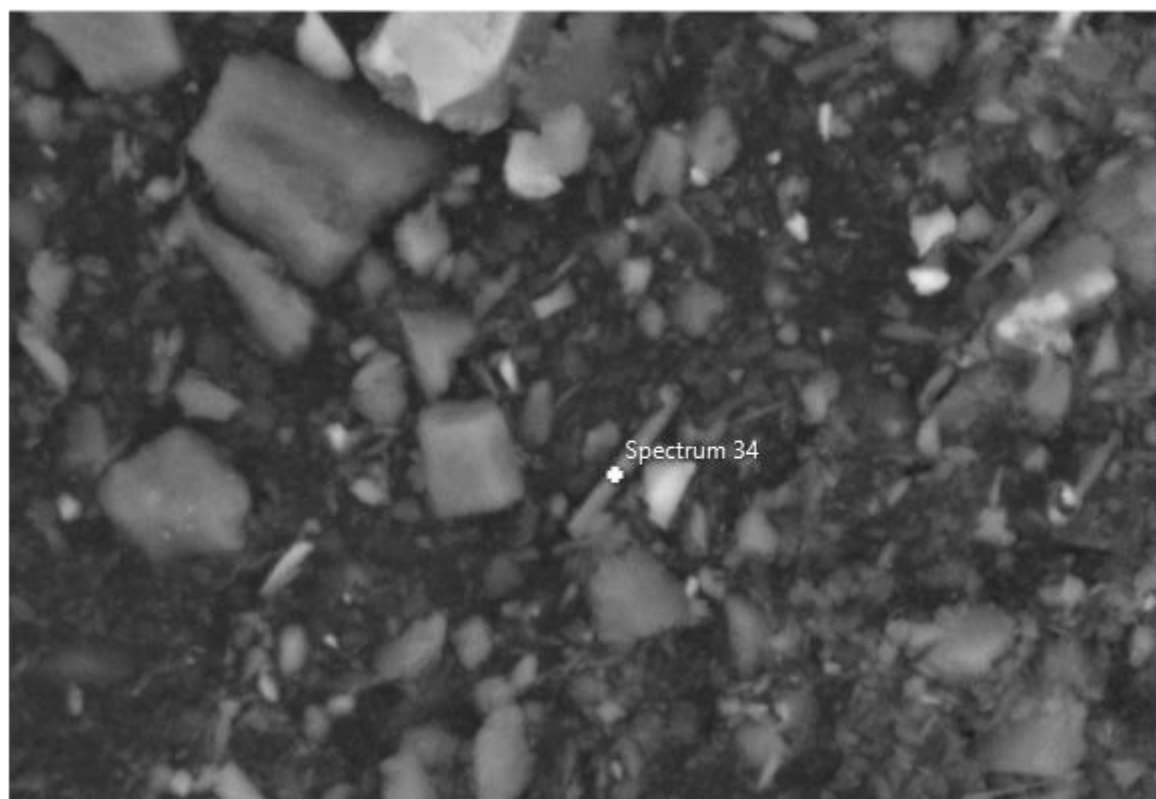
Electron Image 8 (SE)



Electron Image 9 (SE)



Electron Image 12 (SE)



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Client Details

Client	Ausgold Exploration Pty Ltd
Contact	Troy Collie
Address	Level 1, 307 Murray Street, PERTH, WA, 6000

Sample Details

Your Reference	Waste Rock Analysis
Number of Samples	176 Solid adhoc
Date Samples Received	09/12/2024
Date Instructions Received	11/12/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for soils and on an as received basis for other matrices.

Report Details

Date Results Requested by	31/01/2025
Date of Issue	31/01/2025

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Authorisation Details

Asbestos Approved By	Analysed by Asbestos Approved Analyst: Sue Nash Authorised by Asbestos Approved Signatory: Thomas Edwards
Results Approved By	Lien Tang, Assistant Operations Manager Lucas Yij, Inorganics Team Leader Stacey Hawkins, ASS/AMD Supervisor Thomas Edwards, OHL Supervisor Varsha Ho Wing, Inorganics and Metals Supervisor
Laboratory Manager	Michael Kubiak

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Samples in this Report

Envirolab ID	Sample ID	Depth	Matrix	Date Sampled	Date Received
PFL0924-01	AA191780	22.00-24.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-02	AA191860	58.82-59.59	Solid adhoc	02/12/2024	11/12/2024
PFL0924-03	AA191900	96.00-98.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-04	AA191920	109.00-111.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-05	AA191933	129.00-131.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-06	AA191940	8.00-10.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-07	AA192160	17.00-19.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-08	AA192166	31.00-33.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-09	AA192180	40.00-42.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-10	AA192460	54.00-55.60	Solid adhoc	02/12/2024	11/12/2024
PFL0924-11	AA192820	4.00-5.80	Solid adhoc	02/12/2024	11/12/2024
PFL0924-12	AA192833	15.00-17.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-13	AA192840	76.00-78.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-14	AA192860	5.00-6.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-15	AA192866	16.30-18.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-16	AA192880	33.80-34.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-17	AA192899	105.00-105.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-18	AA195333	0.64-1.95	Solid adhoc	02/12/2024	11/12/2024
PFL0924-19	AA195640	87.00-89.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-20	AA195699	96.00-98.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-21	AA195700	139.00-141.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-22	AA196120	142.00-144.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-23	AA196640	146.50-148.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-24	AA196660	44.70-46.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-25	AA204466	47.88-49.17	Solid adhoc	02/12/2024	11/12/2024
PFL0924-26	AA204480	67.00-69.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-27	AA204499	20.60-21.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-28	AA204500	41.60-41.80	Solid adhoc	02/12/2024	11/12/2024
PFL0924-29	AA204520	55.30-55.60	Solid adhoc	02/12/2024	11/12/2024
PFL0924-30	AA204533	80.00-81.20	Solid adhoc	02/12/2024	11/12/2024
PFL0924-31	AA204540	103.50-103.80	Solid adhoc	02/12/2024	11/12/2024
PFL0924-32	AA204560	41.00-43.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-33	AA204566	57.00-59.85	Solid adhoc	02/12/2024	11/12/2024
PFL0924-34	AA204580	64.00-67.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-35	AA205933	109.00-111.50	Solid adhoc	02/12/2024	11/12/2024

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Samples in this Report

Envirolab ID	Sample ID	Depth	Matrix	Date Sampled	Date Received
PFL0924-36	AA205940	128.00-130.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-37	AA205960	109.00-111.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-38	AA205966	121.00-123.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-39	AA205980	1.00-3.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-40	AA264350	86.00-88.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-41	AA263975	129.00-131.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-42	AA264000	138.00-140.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-43	AA275375	4.40-4.80	Solid adhoc	02/12/2024	11/12/2024
PFL0924-44	AA273200	8.00-8.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-45	AA273350	18.00-18.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-46	AA273175	47.30-47.80	Solid adhoc	02/12/2024	11/12/2024
PFL0924-47	AA275000	76.00-78.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-48	AA206020	1.00-3.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-49	AA206000	16.00-18.70	Solid adhoc	02/12/2024	11/12/2024
PFL0924-50	AA205999	19.50-22.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-51	AA205980	46.00-48.60	Solid adhoc	02/12/2024	11/12/2024
PFL0924-52	AA258600	62.52-64.55	Solid adhoc	02/12/2024	11/12/2024
PFL0924-53	AA258625	98.00-100.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-54	AA258900	55.50-57.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-55	AA258925	61.50-63.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-56	AA258950	102.80-104.80	Solid adhoc	02/12/2024	11/12/2024
PFL0924-57	AA261800	106.52-108.70	Solid adhoc	02/12/2024	11/12/2024
PFL0924-58	AA275400	60.00-62.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-59	AA275425	62.80-64.20	Solid adhoc	02/12/2024	11/12/2024
PFL0924-60	AA263750	24.00-26.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-61	AA263775	36.00-38.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-62	AA263800	112.00-114.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-63	AA206040	12.00-14.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-64	AA206060	39.00-41.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-65	AA206080	59.12-60.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-66	AA206180	150.00-152.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-67	AA206400	163.00-164.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-68	AA206433	164.46-166.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-69	AA263825	22.00-24.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-70	AA263850	40.00-42.00	Solid adhoc	02/12/2024	11/12/2024

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Samples in this Report

Envirolab ID	Sample ID	Depth	Matrix	Date Sampled	Date Received
PFL0924-71	AA263875	50.28-25.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-72	AA263900	70.00-72.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-73	AA275450	0.80-1.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-74	AA206440	1.50-3.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-75	AA206460	45.00-47.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-76	AA206466	48.00-49.74	Solid adhoc	02/12/2024	11/12/2024
PFL0924-77	AA206480	0.00-0.10	Solid adhoc	02/12/2024	11/12/2024
PFL0924-78	AA206499	11.17-13.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-79	AA206500	54.00-56.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-80	AA204733	87.00-89.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-81	AA204740	121.00-123.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-82	AA204760	50.00-52.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-83	AA205866	80.00-81.53	Solid adhoc	02/12/2024	11/12/2024
PFL0924-84	AA205880	83.40-84.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-85	AA205899	0.00-1.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-86	AA205900	13.00-14.81	Solid adhoc	02/12/2024	11/12/2024
PFL0924-87	AA263950	65.00-66.15	Solid adhoc	02/12/2024	11/12/2024
PFL0924-88	AA263925	96.60-97.80	Solid adhoc	02/12/2024	11/12/2024
PFL0924-89	AA205920	17.00-18.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-90	AA258575	47.94-48.75	Solid adhoc	02/12/2024	11/12/2024
PFL0924-91	AA275475	1.20-2.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-92	AA275500	64.00-66.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-93	AA264375	1.00-2.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-94	AA264400	8.00-10.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-95	AA272775	14.00-15.98	Solid adhoc	02/12/2024	11/12/2024
PFL0924-96	AA272800	28.00-30.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-97	AA275350	26.89-28.30	Solid adhoc	02/12/2024	11/12/2024
PFL0924-98	AA277300	28.31-29.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-99	AA277400	35.00-37.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AA	AA277275	52.83-54.20	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AB	AA275750	64.08-65.60	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AC	AA275725	66.00-68.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AD	AA275525	18.00-20.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AE	AA275550	17.11-19.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AF	AA275575	30.82-32.89	Solid adhoc	02/12/2024	11/12/2024

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Samples in this Report

Envirolab ID	Sample ID	Depth	Matrix	Date Sampled	Date Received
PFL0924-AG	AA275600	34.00-36.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AH	AA275625	0.00-0.28	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AI	AA275650	13.00-14.43	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AJ	AA275675	16.00-18.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AK	AA275700	23.00-25.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AL	AA277550	57.00-59.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AM	AA26244, AA26245	22.00-24.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AN	AA029018, AA029019	2.00-4.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AO	AA030056, AA030058	77.00-79.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AP	AA030653, AA030654	69.00-71.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AQ	AA030750, AA030752	56.00-58.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AR	AA031641, AA031642	61.00-63.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AS	AA032011, AA032012	58.00-60.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AT	AA48491	63.00-64.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AU	AA48494, AA48495	66.00-68.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AV	AA55593, AA55594	69.00-71.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AW	AA55721, AA55722	56.00-58.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AX	AA56616, AA56617	26.00-28.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AY	AA038015, AA038016	74.00-76.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-AZ	AA88535, AA88536	6.00-8.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BA	AA88574, AA88575	43.00-45.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BB	AA95154, AA95155	18.00-20.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BC	AA90177, AA90178	21.00-23.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BD	AA114832, AA114834	36.00-38.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BE	AA119692, AA119693	46.00-48.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BF	AA116083, AA116084	98.00-100.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BG	AA121581	110.00-111.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BH	AA128029	4.00-8.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BI	BB022189, BB022190	10.00-12.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BJ	AA137144, AA137144	0.00-2.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BK	AA166663, AA166664	13.00-15.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BL	BB033348	44.00-48.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BM	BB033363	12.00-15.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BN	AA174337, AA174338	97.00-99.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BO	AA177501, AA177502	5.00-7.00	Solid adhoc	02/12/2024	11/12/2024

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Samples in this Report

Envirolab ID	Sample ID	Depth	Matrix	Date Sampled	Date Received
PFL0924-BP	AA185053, AA185054	10.00-12.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BQ	AA195223, AA195224	6.00-8.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BR	AA203067, AA203068	18.00-20.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BS	AA210979, AA210981	43.00-45.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BT	AA223341, AA223342	2.00-4.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BU	AA225833, AA225834	22.00-24.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BV	AA226479, AA226481	11.00-13.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BW	AA239271, AA239272	30.00-32.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BX	AA239941, AA239942	4.00-6.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BY	AA235088, AA235089	6.00-8.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-BZ	AA244999, AA245001	16.00-18.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CA	AA245517, AA245518	3.00-5.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CB	AA245538, AA245539	22.00-24.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CC	AA245544, AA245545	27.00-29.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CD	AA245735, AA245736	56.00-58.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CE	AA245823, AA245824	65.00-67.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CF	AA245834,	75.00-76.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CG	AA270171, AA270172	46.00-48.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CH	AA272156, AA272157	78.00-80.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CI	AA272169, AA272170	90.00-92.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CJ	AA272573, AA272574	18.00-20.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CK	AA275249, AA275251	47.00-49.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CL	AA278100	24.50-25.00	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CM	AA278075	80.00-81.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CN	AA278050	59.00-59.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CO	AA277600	89.00-89.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CP	AA277950	98.00-98.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CQ	AA277975	100.00-100.50	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CR	AA278125	60.00-60.80	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CS	AA278275	66.87-67.87	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CT	AA278025	2.46-4.80	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CU	AA277575	51.73-52.73	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CV	AA278300	27.69-28.47	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CW	AA280650	36.12-36.62	Solid adhoc	02/12/2024	11/12/2024
PFL0924-CX	AA278000	25.40-26.05	Solid adhoc	02/12/2024	11/12/2024

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Samples in this Report

Envirolab ID	Sample ID	Depth	Matrix	Date Sampled	Date Received
PFL0924-CY	AA280675	51.81-52.37	Solid adhoc	02/12/2024	11/12/2024

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Acid Extractable Metals (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-01	PFL0924-06	PFL0924-08	PFL0924-11	PFL0924-12
Your Reference			AA191780	AA191940	AA192166	AA192820	AA192833
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	8.00-10.00	31.00-33.00	4.00-5.80	15.00-17.00
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-15	PFL0924-17	PFL0924-18	PFL0924-19	PFL0924-21
Your Reference			AA192866	AA192899	AA195333	AA195640	AA195700
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			16.30-18.00	105.00-105.50	0.64-1.95	87.00-89.00	139.00-141.00
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-23	PFL0924-24	PFL0924-27	PFL0924-29	PFL0924-30
Your Reference			AA196640	AA196660	AA204499	AA204520	AA204533
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			146.50-148.50	44.70-46.00	20.60-21.50	55.30-55.60	80.00-81.20
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-31	PFL0924-32	PFL0924-35	PFL0924-36	PFL0924-41
Your Reference			AA204540	AA204560	AA205933	AA205940	AA263975
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			103.50-103.80	41.00-43.50	109.00-111.50	128.00-130.00	129.00-131.00
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-43	PFL0924-45	PFL0924-46	PFL0924-47	PFL0924-48
Your Reference			AA275375	AA273350	AA273175	AA275000	AA206020
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			4.40-4.80	18.00-18.50	47.30-47.80	76.00-78.00	1.00-3.00
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-49	PFL0924-50	PFL0924-54	PFL0924-55	PFL0924-56
Your Reference			AA206000	AA205999	AA258900	AA258925	AA258950
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			16.00-18.70	19.50-22.00	55.50-57.50	61.50-63.50	102.80-104.80
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-58	PFL0924-60	PFL0924-65	PFL0924-67	PFL0924-68
Your Reference			AA275400	AA263750	AA206080	AA206400	AA206433
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			60.00-62.00	24.00-26.00	59.12-60.50	163.00-164.00	164.46-166.00
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-69	PFL0924-72	PFL0924-74	PFL0924-75	PFL0924-77
Your Reference			AA263825	AA263900	AA206440	AA206460	AA206480
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	70.00-72.00	1.50-3.00	45.00-47.00	0.00-0.10
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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Acid Extractable Metals (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-79	PFL0924-80	PFL0924-83	PFL0924-84	PFL0924-86
Your Reference			AA206500	AA204733	AA205866	AA205880	AA205900
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			54.00-56.00	87.00-89.00	80.00-81.53	83.40-84.00	13.00-14.81
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-90	PFL0924-92	PFL0924-94	PFL0924-96	PFL0924-97
Your Reference			AA258575	AA275500	AA264400	AA272800	AA275350
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			47.94-48.75	64.00-66.00	8.00-10.00	28.00-30.00	26.89-28.30
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-98	PFL0924-AA	PFL0924-AE	PFL0924-AF	PFL0924-AI
Your Reference			AA277300	AA277275	AA275550	AA275575	AA275650
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			28.31-29.00	52.83-54.20	17.11-19.00	30.82-32.89	13.00-14.43
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-AJ	PFL0924-AK	PFL0924-AP	PFL0924-AR	PFL0924-AS
Your Reference			AA275675	AA275700	AA030653, AA030654	AA031641, AA031642	AA032011, AA032012
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			16.00-18.00	23.00-25.00	69.00-71.00	61.00-63.00	58.00-60.00
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-AT	PFL0924-AX	PFL0924-AZ	PFL0924-BC	PFL0924-BE
Your Reference			AA48491	AA56616, AA56617	AA88535, AA88536	AA90177, AA90178	AA119692, AA119693
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			63.00-64.00	26.00-28.00	6.00-8.00	21.00-23.00	46.00-48.00
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-BH	PFL0924-BJ	PFL0924-BL	PFL0924-BM	PFL0924-BN
Your Reference			AA128029	AA137144, AA137144	BB033348	BB033363	AA174337, AA174338
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			4.00-8.00	0.00-2.00	44.00-48.00	12.00-15.00	97.00-99.00
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Envirolab ID	Units	PQL	PFL0924-BO	PFL0924-BP	PFL0924-BS	PFL0924-BT	PFL0924-BV
Your Reference			AA177501, AA177502	AA185053, AA185054	AA210979, AA210981	AA223341, AA223342	AA226479, AA226481
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			5.00-7.00	10.00-12.00	43.00-45.00	2.00-4.00	11.00-13.00
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	0.18	<0.10

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Acid Extractable Metals (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-BX	PFL0924-CA	PFL0924-CC	PFL0924-CE	PFL0924-CF
Your Reference			AA239941, AA239942	AA245517, AA245518	AA245544, AA245545	AA245823, AA245824	AA245834,
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			4.00-6.00	3.00-5.00	27.00-29.00	65.00-67.00	75.00-76.00
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Envirolab ID	Units	PQL	PFL0924-CH	PFL0924-CK	PFL0924-CL	PFL0924-CN	PFL0924-CO
Your Reference			AA272156, AA272157	AA275249, AA275251	AA278100	AA278050	AA277600
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			78.00-80.00	47.00-49.00	24.50-25.00	59.00-59.50	89.00-89.50
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Envirolab ID	Units	PQL	PFL0924-CQ	PFL0924-CS	PFL0924-CV	PFL0924-CX	PFL0924-CY
Your Reference			AA277975	AA278275	AA278300	AA278000	AA280675
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			100.00-100.50	66.87-67.87	27.69-28.47	25.40-26.05	51.81-52.37
Boron*	mg/kg	10	<10	<10	<10	<10	<10
Mercury*	mg/kg	0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-01	PFL0924-02	PFL0924-03	PFL0924-04	PFL0924-05
Your Reference			AA191780	AA191860	AA191900	AA191920	AA191933
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	58.82-59.59	96.00-98.00	109.00-111.00	129.00-131.00
Total Sulfur*	%	0.010	0.098	0.040	<0.010	0.024	0.039

Envirolab ID	Units	PQL	PFL0924-06	PFL0924-07	PFL0924-08	PFL0924-09	PFL0924-10
Your Reference			AA191940	AA192160	AA192166	AA192180	AA192460
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			8.00-10.00	17.00-19.00	31.00-33.00	40.00-42.00	54.00-55.60
Total Sulfur*	%	0.010	<0.010	0.012	0.013	0.086	0.11

Envirolab ID	Units	PQL	PFL0924-11	PFL0924-12	PFL0924-13	PFL0924-14	PFL0924-15
Your Reference			AA192820	AA192833	AA192840	AA192860	AA192866
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			4.00-5.80	15.00-17.00	76.00-78.00	5.00-6.00	16.30-18.00
Total Sulfur*	%	0.010	<0.010	0.028	0.28	<0.010	0.053

Envirolab ID	Units	PQL	PFL0924-16	PFL0924-17	PFL0924-18	PFL0924-19	PFL0924-20
Your Reference			AA192880	AA192899	AA195333	AA195640	AA195699
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			33.80-34.00	105.00-105.50	0.64-1.95	87.00-89.00	96.00-98.00
Total Sulfur*	%	0.010	0.14	0.11	0.019	0.15	0.12

Envirolab ID	Units	PQL	PFL0924-21	PFL0924-22	PFL0924-23	PFL0924-24	PFL0924-25
Your Reference			AA195700	AA196120	AA196640	AA196660	AA204466
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			139.00-141.00	142.00-144.00	146.50-148.50	44.70-46.00	47.88-49.17
Total Sulfur*	%	0.010	0.24	0.27	0.026	0.21	<0.010

Envirolab ID	Units	PQL	PFL0924-26	PFL0924-27	PFL0924-28	PFL0924-29	PFL0924-30
Your Reference			AA204480	AA204499	AA204500	AA204520	AA204533
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			67.00-69.00	20.60-21.50	41.60-41.80	55.30-55.60	80.00-81.20
Total Sulfur*	%	0.010	0.30	<0.010	0.090	0.022	0.048

Envirolab ID	Units	PQL	PFL0924-31	PFL0924-32	PFL0924-33	PFL0924-34	PFL0924-35
Your Reference			AA204540	AA204560	AA204566	AA204580	AA205933
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			103.50-103.80	41.00-43.50	57.00-59.85	64.00-67.00	109.00-111.50
Total Sulfur*	%	0.010	0.037	0.29	0.23	0.089	0.085

Envirolab ID	Units	PQL	PFL0924-36	PFL0924-37	PFL0924-38	PFL0924-40	PFL0924-41
Your Reference			AA205940	AA205960	AA205966	AA264350	AA263975
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			128.00-130.00	109.00-111.00	121.00-123.00	86.00-88.00	129.00-131.00
Total Sulfur*	%	0.010	3.0	0.087	0.045	0.22	0.16

Envirolab ID	Units	PQL	PFL0924-42	PFL0924-43	PFL0924-44	PFL0924-45	PFL0924-46
Your Reference			AA264000	AA275375	AA273200	AA273350	AA273175
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			138.00-140.00	4.40-4.80	8.00-8.50	18.00-18.50	47.30-47.80
Total Sulfur*	%	0.010	0.071	0.36	0.20	0.15	<0.010

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Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-47	PFL0924-48	PFL0924-49	PFL0924-50	PFL0924-51
Your Reference			AA275000	AA206020	AA206000	AA205999	AA205980
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			76.00-78.00	1.00-3.00	16.00-18.70	19.50-22.00	46.00-48.60
Total Sulfur*	%	0.010	0.051	0.057	0.12	0.021	0.013

Envirolab ID	Units	PQL	PFL0924-52	PFL0924-53	PFL0924-54	PFL0924-55	PFL0924-56
Your Reference			AA258600	AA258625	AA258900	AA258925	AA258950
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			62.52-64.55	98.00-100.00	55.50-57.50	61.50-63.50	102.80-104.80
Total Sulfur*	%	0.010	0.13	0.20	0.030	0.19	0.34

Envirolab ID	Units	PQL	PFL0924-57	PFL0924-58	PFL0924-59	PFL0924-60	PFL0924-61
Your Reference			AA261800	AA275400	AA275425	AA263750	AA263775
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			106.52-108.70	60.00-62.00	62.80-64.20	24.00-26.00	36.00-38.00
Total Sulfur*	%	0.010	0.063	0.13	0.16	<0.010	0.033

Envirolab ID	Units	PQL	PFL0924-62	PFL0924-63	PFL0924-64	PFL0924-65	PFL0924-66
Your Reference			AA263800	AA206040	AA206060	AA206080	AA206180
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			112.00-114.00	12.00-14.00	39.00-41.00	59.12-60.50	150.00-152.00
Total Sulfur*	%	0.010	0.063	0.026	<0.010	0.054	0.047

Envirolab ID	Units	PQL	PFL0924-67	PFL0924-68	PFL0924-69	PFL0924-70	PFL0924-71
Your Reference			AA206400	AA206433	AA263825	AA263850	AA263875
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			163.00-164.00	164.46-166.00	22.00-24.00	40.00-42.00	50.28-25.00
Total Sulfur*	%	0.010	0.024	0.093	0.036	<0.010	0.39

Envirolab ID	Units	PQL	PFL0924-72	PFL0924-73	PFL0924-74	PFL0924-75	PFL0924-76
Your Reference			AA263900	AA275450	AA206440	AA206460	AA206466
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			70.00-72.00	0.80-1.50	1.50-3.00	45.00-47.00	48.00-49.74
Total Sulfur*	%	0.010	0.41	0.058	0.034	<0.010	0.047

Envirolab ID	Units	PQL	PFL0924-77	PFL0924-78	PFL0924-79	PFL0924-80	PFL0924-81
Your Reference			AA206480	AA206499	AA206500	AA204733	AA204740
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			0.00-0.10	11.17-13.00	54.00-56.00	87.00-89.00	121.00-123.00
Total Sulfur*	%	0.010	<0.010	0.070	0.26	0.073	0.14

Envirolab ID	Units	PQL	PFL0924-82	PFL0924-83	PFL0924-84	PFL0924-85	PFL0924-86
Your Reference			AA204760	AA205866	AA205880	AA205899	AA205900
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			50.00-52.00	80.00-81.53	83.40-84.00	0.00-1.00	13.00-14.81
Total Sulfur*	%	0.010	<0.010	0.033	0.28	0.025	<0.010

Envirolab ID	Units	PQL	PFL0924-87	PFL0924-88	PFL0924-89	PFL0924-90	PFL0924-91
Your Reference			AA263950	AA263925	AA205920	AA258575	AA275475
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			65.00-66.15	96.60-97.80	17.00-18.50	47.94-48.75	1.20-2.00
Total Sulfur*	%	0.010	0.059	0.050	<0.010	0.017	0.022

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Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-92	PFL0924-93	PFL0924-94	PFL0924-95	PFL0924-96
Your Reference			AA275500	AA264375	AA264400	AA272775	AA272800
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			64.00-66.00	1.00-2.00	8.00-10.00	14.00-15.98	28.00-30.00
Total Sulfur*	%	0.010	<0.010	<0.010	0.022	0.011	0.026

Envirolab ID	Units	PQL	PFL0924-97	PFL0924-98	PFL0924-99	PFL0924-AA	PFL0924-AB
Your Reference			AA275350	AA277300	AA277400	AA277275	AA275750
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			26.89-28.30	28.31-29.00	35.00-37.00	52.83-54.20	64.08-65.60
Total Sulfur*	%	0.010	<0.010	0.064	<0.010	<0.010	0.17

Envirolab ID	Units	PQL	PFL0924-AC	PFL0924-AD	PFL0924-AE	PFL0924-AF	PFL0924-AG
Your Reference			AA275725	AA275525	AA275550	AA275575	AA275600
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			66.00-68.00	18.00-20.00	17.11-19.00	30.82-32.89	34.00-36.00
Total Sulfur*	%	0.010	0.42	0.018	<0.010	0.029	<0.010

Envirolab ID	Units	PQL	PFL0924-AH	PFL0924-AI	PFL0924-AJ	PFL0924-AK	PFL0924-AL
Your Reference			AA275625	AA275650	AA275675	AA275700	AA277550
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			0.00-0.28	13.00-14.43	16.00-18.00	23.00-25.00	57.00-59.00
Total Sulfur*	%	0.010	0.011	<0.010	<0.010	0.047	2.4

Envirolab ID	Units	PQL	PFL0924-AM	PFL0924-AN	PFL0924-AO	PFL0924-AP	PFL0924-AQ
Your Reference			AA26244, AA26245	AA029018, AA029019	AA030056, AA030058	AA030653, AA030654	AA030750, AA030752
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	2.00-4.00	77.00-79.00	69.00-71.00	56.00-58.00
Total Sulfur*	%	0.010	<0.010	0.042	0.32	3.4	0.31

Envirolab ID	Units	PQL	PFL0924-AR	PFL0924-AS	PFL0924-AT	PFL0924-AU	PFL0924-AV
Your Reference			AA031641, AA031642	AA032011, AA032012	AA48491	AA48494, AA48495	AA55593, AA55594
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			61.00-63.00	58.00-60.00	63.00-64.00	66.00-68.00	69.00-71.00
Total Sulfur*	%	0.010	0.16	0.086	0.16	0.49	2.7

Envirolab ID	Units	PQL	PFL0924-AW	PFL0924-AX	PFL0924-AY	PFL0924-AZ	PFL0924-BA
Your Reference			AA55721, AA55722	AA56616, AA56617	AA038015, AA038016	AA88535, AA88536	AA88574, AA88575
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			56.00-58.00	26.00-28.00	74.00-76.00	6.00-8.00	43.00-45.00
Total Sulfur*	%	0.010	0.36	0.019	0.23	<0.010	0.11

Envirolab ID	Units	PQL	PFL0924-BB	PFL0924-BC	PFL0924-BD	PFL0924-BE	PFL0924-BF
Your Reference			AA95154, AA95155	AA90177, AA90178	AA114832, AA114834	AA119692, AA119693	AA116083, AA116084
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			18.00-20.00	21.00-23.00	36.00-38.00	46.00-48.00	98.00-100.00
Total Sulfur*	%	0.010	0.013	<0.010	0.021	0.046	0.040

Envirolab ID	Units	PQL	PFL0924-BG	PFL0924-BH	PFL0924-BI	PFL0924-BJ	PFL0924-BK
Your Reference			AA121581	AA128029	BB022189, BB022190	AA137144, AA137144	AA166663, AA166664
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			110.00-111.00	4.00-8.00	10.00-12.00	0.00-2.00	13.00-15.00
Total Sulfur*	%	0.010	0.066	0.021	0.046	0.018	0.061

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Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-BL	PFL0924-BM	PFL0924-BN	PFL0924-BO	PFL0924-BP
Your Reference			BB033348	BB033363	AA174337, AA174338	AA177501, AA177502	AA185053, AA185054
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			44.00-48.00	12.00-15.00	97.00-99.00	5.00-7.00	10.00-12.00
Total Sulfur*	%	0.010	0.098	<0.010	0.41	0.024	0.085

Envirolab ID	Units	PQL	PFL0924-BQ	PFL0924-BR	PFL0924-BS	PFL0924-BT	PFL0924-BU
Your Reference			AA195223, AA195224	AA203067, AA203068	AA210979, AA210981	AA223341, AA223342	AA225833, AA225834
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			6.00-8.00	18.00-20.00	43.00-45.00	2.00-4.00	22.00-24.00
Total Sulfur*	%	0.010	0.078	0.068	<0.010	0.034	0.12

Envirolab ID	Units	PQL	PFL0924-BV	PFL0924-BW	PFL0924-BX	PFL0924-BY	PFL0924-BZ
Your Reference			AA226479, AA226481	AA239271, AA239272	AA239941, AA239942	AA235088, AA235089	AA244999, AA245001
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			11.00-13.00	30.00-32.00	4.00-6.00	6.00-8.00	16.00-18.00
Total Sulfur*	%	0.010	0.017	<0.010	0.017	0.043	0.023

Envirolab ID	Units	PQL	PFL0924-CA	PFL0924-CB	PFL0924-CC	PFL0924-CD	PFL0924-CE
Your Reference			AA245517, AA245518	AA245538, AA245539	AA245544, AA245545	AA245735, AA245736	AA245823, AA245824
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			3.00-5.00	22.00-24.00	27.00-29.00	56.00-58.00	65.00-67.00
Total Sulfur*	%	0.010	<0.010	0.012	0.14	0.038	0.052

Envirolab ID	Units	PQL	PFL0924-CF	PFL0924-CG	PFL0924-CH	PFL0924-CI	PFL0924-CJ
Your Reference			AA245834,	AA270171, AA270172	AA272156, AA272157	AA272169, AA272170	AA272573, AA272574
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			75.00-76.00	46.00-48.00	78.00-80.00	90.00-92.00	18.00-20.00
Total Sulfur*	%	0.010	0.21	<0.010	0.25	0.21	<0.010

Envirolab ID	Units	PQL	PFL0924-CK	PFL0924-CL	PFL0924-CM	PFL0924-CN	PFL0924-CO
Your Reference			AA275249, AA275251	AA278100	AA278075	AA278050	AA277600
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			47.00-49.00	24.50-25.00	80.00-81.50	59.00-59.50	89.00-89.50
Total Sulfur*	%	0.010	<0.010	0.23	1.0	0.73	3.4

Envirolab ID	Units	PQL	PFL0924-CP	PFL0924-CQ	PFL0924-CR	PFL0924-CS	PFL0924-CT
Your Reference			AA277950	AA277975	AA278125	AA278275	AA278025
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			98.00-98.50	100.00-100.50	60.00-60.80	66.87-67.87	2.46-4.80
Total Sulfur*	%	0.010	2.4	2.2	0.46	0.20	0.037

Envirolab ID	Units	PQL	PFL0924-CU	PFL0924-CV	PFL0924-CW	PFL0924-CX	PFL0924-CY
Your Reference			AA277575	AA278300	AA280650	AA278000	AA280675
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			51.73-52.73	27.69-28.47	36.12-36.62	25.40-26.05	51.81-52.37
Total Sulfur*	%	0.010	1.3	8.8	0.21	0.20	0.62

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Inorganics - General Chemical Parameters (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-01	PFL0924-06	PFL0924-08	PFL0924-11	PFL0924-12
Your Reference			AA191780	AA191940	AA192166	AA192820	AA192833
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	8.00-10.00	31.00-33.00	4.00-5.80	15.00-17.00
Chloride*	mg/kg	10	140	92	490	56	89
Fluoride*	mg/kg	0.50	3.0	6.7	4.9	3.1	5.0
Envirolab ID	Units	PQL	PFL0924-15	PFL0924-17	PFL0924-18	PFL0924-19	PFL0924-21
Your Reference			AA192866	AA192899	AA195333	AA195640	AA195700
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			16.30-18.00	105.00-105.50	0.64-1.95	87.00-89.00	139.00-141.00
Chloride*	mg/kg	10	190	97	150	33	36
Fluoride*	mg/kg	0.50	1.3	1.8	8.8	1.4	1.5
Envirolab ID	Units	PQL	PFL0924-23	PFL0924-24	PFL0924-27	PFL0924-29	PFL0924-30
Your Reference			AA196640	AA196660	AA204499	AA204520	AA204533
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			146.50-148.50	44.70-46.00	20.60-21.50	55.30-55.60	80.00-81.20
Chloride*	mg/kg	10	130	120	46	28	140
Fluoride*	mg/kg	0.50	0.80	3.8	1.8	1.4	1.5
Envirolab ID	Units	PQL	PFL0924-31	PFL0924-32	PFL0924-35	PFL0924-36	PFL0924-41
Your Reference			AA204540	AA204560	AA205933	AA205940	AA263975
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			103.50-103.80	41.00-43.50	109.00-111.50	128.00-130.00	129.00-131.00
Chloride*	mg/kg	10	85	46	71	11	60
Fluoride*	mg/kg	0.50	1.2	1.6	4.5	4.6	2.7
Envirolab ID	Units	PQL	PFL0924-43	PFL0924-45	PFL0924-46	PFL0924-47	PFL0924-48
Your Reference			AA275375	AA273350	AA273175	AA275000	AA206020
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			4.40-4.80	18.00-18.50	47.30-47.80	76.00-78.00	1.00-3.00
Chloride*	mg/kg	10	70	36	110	36	2000
Fluoride*	mg/kg	0.50	3.0	15	3.9	3.2	<0.50
Envirolab ID	Units	PQL	PFL0924-49	PFL0924-50	PFL0924-54	PFL0924-55	PFL0924-56
Your Reference			AA206000	AA205999	AA258900	AA258925	AA258950
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			16.00-18.70	19.50-22.00	55.50-57.50	61.50-63.50	102.80-104.80
Chloride*	mg/kg	10	33	380	62	130	22
Fluoride*	mg/kg	0.50	3.7	7.0	2.7	2.8	8.9
Envirolab ID	Units	PQL	PFL0924-58	PFL0924-60	PFL0924-65	PFL0924-67	PFL0924-68
Your Reference			AA275400	AA263750	AA206080	AA206400	AA206433
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			60.00-62.00	24.00-26.00	59.12-60.50	163.00-164.00	164.46-166.00
Chloride*	mg/kg	10	140	190	37	43	130
Fluoride*	mg/kg	0.50	3.0	2.1	7.3	3.2	5.4
Envirolab ID	Units	PQL	PFL0924-69	PFL0924-72	PFL0924-74	PFL0924-75	PFL0924-77
Your Reference			AA263825	AA263900	AA206440	AA206460	AA206480
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	70.00-72.00	1.50-3.00	45.00-47.00	0.00-0.10
Chloride*	mg/kg	10	810	26	760	300	81
Fluoride*	mg/kg	0.50	1.3	2.0	<0.50	0.55	<0.50

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Inorganics - General Chemical Parameters (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-79	PFL0924-80	PFL0924-83	PFL0924-84	PFL0924-86
Your Reference			AA206500	AA204733	AA205866	AA205880	AA205900
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			54.00-56.00	87.00-89.00	80.00-81.53	83.40-84.00	13.00-14.81
Chloride*	mg/kg	10	29	110	64	11	690
Fluoride*	mg/kg	0.50	5.0	3.8	2.5	0.92	19
Envirolab ID	Units	PQL	PFL0924-90	PFL0924-92	PFL0924-94	PFL0924-96	PFL0924-97
Your Reference			AA258575	AA275500	AA264400	AA272800	AA275350
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			47.94-48.75	64.00-66.00	8.00-10.00	28.00-30.00	26.89-28.30
Chloride*	mg/kg	10	100	200	110	30	55
Fluoride*	mg/kg	0.50	1.9	7.1	7.7	3.9	9.3
Envirolab ID	Units	PQL	PFL0924-98	PFL0924-AA	PFL0924-AE	PFL0924-AF	PFL0924-AI
Your Reference			AA277300	AA277275	AA275550	AA275575	AA275650
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			28.31-29.00	52.83-54.20	17.11-19.00	30.82-32.89	13.00-14.43
Chloride*	mg/kg	10	360	130	360	200	650
Fluoride*	mg/kg	0.50	7.4	1.6	8.5	4.5	5.1
Envirolab ID	Units	PQL	PFL0924-AJ	PFL0924-AK	PFL0924-AP	PFL0924-AR	PFL0924-AS
Your Reference			AA275675	AA275700	AA030653, AA030654	AA031641, AA031642	AA032011, AA032012
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			16.00-18.00	23.00-25.00	69.00-71.00	61.00-63.00	58.00-60.00
Chloride*	mg/kg	10	390	4300	60	120	130
Fluoride*	mg/kg	0.50	3.0	0.95	0.56	2.5	2.6
Envirolab ID	Units	PQL	PFL0924-AT	PFL0924-AX	PFL0924-AZ	PFL0924-BC	PFL0924-BE
Your Reference			AA48491	AA56616, AA56617	AA88535, AA88536	AA90177, AA90178	AA119692, AA119693
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			63.00-64.00	26.00-28.00	6.00-8.00	21.00-23.00	46.00-48.00
Chloride*	mg/kg	10	100	360	49	120	470
Fluoride*	mg/kg	0.50	1.0	6.8	5.8	7.2	2.2
Envirolab ID	Units	PQL	PFL0924-BH	PFL0924-BJ	PFL0924-BL	PFL0924-BM	PFL0924-BN
Your Reference			AA128029	AA137144, AA137144	BB033348	BB033363	AA174337, AA174338
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			4.00-8.00	0.00-2.00	44.00-48.00	12.00-15.00	97.00-99.00
Chloride*	mg/kg	10	110	62	88	670	170
Fluoride*	mg/kg	0.50	11	<0.50	2.0	17	1.8
Envirolab ID	Units	PQL	PFL0924-BO	PFL0924-BP	PFL0924-BS	PFL0924-BT	PFL0924-BV
Your Reference			AA177501, AA177502	AA185053, AA185054	AA210979, AA210981	AA223341, AA223342	AA226479, AA226481
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			5.00-7.00	10.00-12.00	43.00-45.00	2.00-4.00	11.00-13.00
Chloride*	mg/kg	10	1100	160	940	91	200
Fluoride*	mg/kg	0.50	<0.50	6.0	1.8	<0.50	4.3

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Inorganics - General Chemical Parameters (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-BX	PFL0924-CA	PFL0924-CC	PFL0924-CE	PFL0924-CF
Your Reference			AA239941, AA239942	AA245517, AA245518	AA245544, AA245545	AA245823, AA245824	AA245834,
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			4.00-6.00	3.00-5.00	27.00-29.00	65.00-67.00	75.00-76.00
Chloride*	mg/kg	10	52	350	1000	370	700
Fluoride*	mg/kg	0.50	5.6	1.2	11	3.3	2.6

Envirolab ID	Units	PQL	PFL0924-CH	PFL0924-CK	PFL0924-CL	PFL0924-CN	PFL0924-CO
Your Reference			AA272156, AA272157	AA275249, AA275251	AA278100	AA278050	AA277600
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			78.00-80.00	47.00-49.00	24.50-25.00	59.00-59.50	89.00-89.50
Chloride*	mg/kg	10	84	140	310	130	43
Fluoride*	mg/kg	0.50	2.3	3.6	11	4.9	1.5

Envirolab ID	Units	PQL	PFL0924-CQ	PFL0924-CS	PFL0924-CV	PFL0924-CX	PFL0924-CY
Your Reference			AA277975	AA278275	AA278300	AA278000	AA280675
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			100.00-100.50	66.87-67.87	27.69-28.47	25.40-26.05	51.81-52.37
Chloride*	mg/kg	10	23	27	63	1400	91
Fluoride*	mg/kg	0.50	1.3	6.9	<0.50	<0.50	1.3

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Inorganics (1:2 soil:water) (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-01	PFL0924-02	PFL0924-03	PFL0924-04	PFL0924-05
Your Reference			AA191780	AA191860	AA191900	AA191920	AA191933
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	58.82-59.59	96.00-98.00	109.00-111.00	129.00-131.00
pH*	pH units		9.0	9.2	9.6	9.1	9.5
Electrical Conductivity*	µS/cm	1.0	440	300	240	320	210
Envirolab ID	Units	PQL	PFL0924-06	PFL0924-07	PFL0924-08	PFL0924-09	PFL0924-10
Your Reference			AA191940	AA192160	AA192166	AA192180	AA192460
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			8.00-10.00	17.00-19.00	31.00-33.00	40.00-42.00	54.00-55.60
pH*	pH units		9.0	8.1	7.8	6.9	10.1
Electrical Conductivity*	µS/cm	1.0	340	1300	900	1000	210
Envirolab ID	Units	PQL	PFL0924-11	PFL0924-12	PFL0924-13	PFL0924-14	PFL0924-15
Your Reference			AA192820	AA192833	AA192840	AA192860	AA192866
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			4.00-5.80	15.00-17.00	76.00-78.00	5.00-6.00	16.30-18.00
pH*	pH units		9.1	9.0	9.2	8.8	8.9
Electrical Conductivity*	µS/cm	1.0	340	390	250	390	450
Envirolab ID	Units	PQL	PFL0924-16	PFL0924-17	PFL0924-18	PFL0924-19	PFL0924-20
Your Reference			AA192880	AA192899	AA195333	AA195640	AA195699
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			33.80-34.00	105.00-105.50	0.64-1.95	87.00-89.00	96.00-98.00
pH*	pH units		7.3	9.1	7.4	9.1	9.0
Electrical Conductivity*	µS/cm	1.0	720	310	490	210	280
Envirolab ID	Units	PQL	PFL0924-21	PFL0924-22	PFL0924-23	PFL0924-24	PFL0924-25
Your Reference			AA195700	AA196120	AA196640	AA196660	AA204466
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			139.00-141.00	142.00-144.00	146.50-148.50	44.70-46.00	47.88-49.17
pH*	pH units		8.8	9.4	9.5	9.2	10.0
Electrical Conductivity*	µS/cm	1.0	210	270	280	380	180
Envirolab ID	Units	PQL	PFL0924-26	PFL0924-27	PFL0924-28	PFL0924-29	PFL0924-30
Your Reference			AA204480	AA204499	AA204500	AA204520	AA204533
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			67.00-69.00	20.60-21.50	41.60-41.80	55.30-55.60	80.00-81.20
pH*	pH units		9.1	9.5	9.3	9.3	9.1
Electrical Conductivity*	µS/cm	1.0	170	360	250	200	340
Envirolab ID	Units	PQL	PFL0924-31	PFL0924-32	PFL0924-33	PFL0924-34	PFL0924-35
Your Reference			AA204540	AA204560	AA204566	AA204580	AA205933
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			103.50-103.80	41.00-43.50	57.00-59.85	64.00-67.00	109.00-111.50
pH*	pH units		9.0	9.3	9.1	9.0	9.2
Electrical Conductivity*	µS/cm	1.0	260	290	370	380	310
Envirolab ID	Units	PQL	PFL0924-36	PFL0924-37	PFL0924-38	PFL0924-40	PFL0924-41
Your Reference			AA205940	AA205960	AA205966	AA264350	AA263975
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			128.00-130.00	109.00-111.00	121.00-123.00	86.00-88.00	129.00-131.00
pH*	pH units		8.7	9.0	8.8	9.1	9.3
Electrical Conductivity*	µS/cm	1.0	360	240	300	250	230

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Inorganics (1:2 soil:water) (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-42	PFL0924-43	PFL0924-44	PFL0924-45	PFL0924-46
Your Reference			AA264000	AA275375	AA273200	AA273350	AA273175
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			138.00-140.00	4.40-4.80	8.00-8.50	18.00-18.50	47.30-47.80
pH*	pH units		9.4	9.0	9.5	9.1	9.4
Electrical Conductivity*	µS/cm	1.0	180	620	650	550	400
Envirolab ID	Units	PQL	PFL0924-47	PFL0924-48	PFL0924-49	PFL0924-50	PFL0924-51
Your Reference			AA275000	AA206020	AA206000	AA205999	AA205980
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			76.00-78.00	1.00-3.00	16.00-18.70	19.50-22.00	46.00-48.60
pH*	pH units		9.7	5.6	8.7	7.8	9.5
Electrical Conductivity*	µS/cm	1.0	250	2900	450	610	190
Envirolab ID	Units	PQL	PFL0924-52	PFL0924-53	PFL0924-54	PFL0924-55	PFL0924-56
Your Reference			AA258600	AA258625	AA258900	AA258925	AA258950
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			62.52-64.55	98.00-100.00	55.50-57.50	61.50-63.50	102.80-104.80
pH*	pH units		7.8	9.3	9.5	9.1	9.3
Electrical Conductivity*	µS/cm	1.0	1100	320	280	350	270
Envirolab ID	Units	PQL	PFL0924-57	PFL0924-58	PFL0924-59	PFL0924-60	PFL0924-61
Your Reference			AA261800	AA275400	AA275425	AA263750	AA263775
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			106.52-108.70	60.00-62.00	62.80-64.20	24.00-26.00	36.00-38.00
pH*	pH units		9.5	8.8	8.9	9.5	9.0
Electrical Conductivity*	µS/cm	1.0	270	470	420	420	420
Envirolab ID	Units	PQL	PFL0924-62	PFL0924-63	PFL0924-64	PFL0924-65	PFL0924-66
Your Reference			AA263800	AA206040	AA206060	AA206080	AA206180
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			112.00-114.00	12.00-14.00	39.00-41.00	59.12-60.50	150.00-152.00
pH*	pH units		9.6	7.1	9.1	9.5	9.5
Electrical Conductivity*	µS/cm	1.0	310	2200	290	240	190
Envirolab ID	Units	PQL	PFL0924-67	PFL0924-68	PFL0924-69	PFL0924-70	PFL0924-71
Your Reference			AA206400	AA206433	AA263825	AA263850	AA263875
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			163.00-164.00	164.46-166.00	22.00-24.00	40.00-42.00	50.28-25.00
pH*	pH units		9.6	9.2	6.7	9.2	8.9
Electrical Conductivity*	µS/cm	1.0	230	330	1100	430	380
Envirolab ID	Units	PQL	PFL0924-72	PFL0924-73	PFL0924-74	PFL0924-75	PFL0924-76
Your Reference			AA263900	AA275450	AA206440	AA206460	AA206466
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			70.00-72.00	0.80-1.50	1.50-3.00	45.00-47.00	48.00-49.74
pH*	pH units		9.4	5.6	5.5	7.6	8.0
Electrical Conductivity*	µS/cm	1.0	210	420	1300	1300	450
Envirolab ID	Units	PQL	PFL0924-77	PFL0924-78	PFL0924-79	PFL0924-80	PFL0924-81
Your Reference			AA206480	AA206499	AA206500	AA204733	AA204740
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			0.00-0.10	11.17-13.00	54.00-56.00	87.00-89.00	121.00-123.00
pH*	pH units		6.5	6.2	9.1	9.1	9.4
Electrical Conductivity*	µS/cm	1.0	200	1200	280	280	320

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Inorganics (1:2 soil:water) (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-82	PFL0924-83	PFL0924-84	PFL0924-85	PFL0924-86
Your Reference			AA204760	AA205866	AA205880	AA205899	AA205900
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			50.00-52.00	80.00-81.53	83.40-84.00	0.00-1.00	13.00-14.81
pH*	pH units		9.5	9.6	9.5	7.7	7.9
Electrical Conductivity*	µS/cm	1.0	450	290	160	290	1300
Envirolab ID	Units	PQL	PFL0924-87	PFL0924-88	PFL0924-89	PFL0924-90	PFL0924-91
Your Reference			AA263950	AA263925	AA205920	AA258575	AA275475
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			65.00-66.15	96.60-97.80	17.00-18.50	47.94-48.75	1.20-2.00
pH*	pH units		9.6	9.6	9.0	9.4	7.3
Electrical Conductivity*	µS/cm	1.0	250	310	290	290	460
Envirolab ID	Units	PQL	PFL0924-92	PFL0924-93	PFL0924-94	PFL0924-95	PFL0924-96
Your Reference			AA275500	AA264375	AA264400	AA272775	AA272800
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			64.00-66.00	1.00-2.00	8.00-10.00	14.00-15.98	28.00-30.00
pH*	pH units		9.7	9.4	8.0	8.0	8.8
Electrical Conductivity*	µS/cm	1.0	460	360	430	580	550
Envirolab ID	Units	PQL	PFL0924-97	PFL0924-98	PFL0924-99	PFL0924-AA	PFL0924-AB
Your Reference			AA275350	AA277300	AA277400	AA277275	AA275750
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			26.89-28.30	28.31-29.00	35.00-37.00	52.83-54.20	64.08-65.60
pH*	pH units		7.3	7.2	9.6	10.1	9.3
Electrical Conductivity*	µS/cm	1.0	640	760	180	310	490
Envirolab ID	Units	PQL	PFL0924-AC	PFL0924-AD	PFL0924-AE	PFL0924-AF	PFL0924-AG
Your Reference			AA275725	AA275525	AA275550	AA275575	AA275600
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			66.00-68.00	18.00-20.00	17.11-19.00	30.82-32.89	34.00-36.00
pH*	pH units		9.4	6.6	8.4	8.3	8.9
Electrical Conductivity*	µS/cm	1.0	260	760	660	940	400
Envirolab ID	Units	PQL	PFL0924-AH	PFL0924-AI	PFL0924-AJ	PFL0924-AK	PFL0924-AL
Your Reference			AA275625	AA275650	AA275675	AA275700	AA277550
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			0.00-0.28	13.00-14.43	16.00-18.00	23.00-25.00	57.00-59.00
pH*	pH units		7.3	8.6	8.5	6.5	7.9
Electrical Conductivity*	µS/cm	1.0	1200	1000	680	5300	1300
Envirolab ID	Units	PQL	PFL0924-AM	PFL0924-AN	PFL0924-AO	PFL0924-AP	PFL0924-AQ
Your Reference			AA26244, AA26245	AA029018, AA029019	AA030056, AA030058	AA030653, AA030654	AA030750, AA030752
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	2.00-4.00	77.00-79.00	69.00-71.00	56.00-58.00
pH*	pH units		8.4	6.0	8.8	5.5	8.6
Electrical Conductivity*	µS/cm	1.0	570	580	410	2800	340
Envirolab ID	Units	PQL	PFL0924-AR	PFL0924-AS	PFL0924-AT	PFL0924-AU	PFL0924-AV
Your Reference			AA031641, AA031642	AA032011, AA032012	AA48491	AA48494, AA48495	AA55593, AA55594
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			61.00-63.00	58.00-60.00	63.00-64.00	66.00-68.00	69.00-71.00
pH*	pH units		8.9	9.2	8.8	9.0	5.1

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Inorganics (1:2 soil:water) (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-AR	PFL0924-AS	PFL0924-AT	PFL0924-AU	PFL0924-AV
Your Reference			AA031641, AA031642	AA032011, AA032012	AA48491	AA48494, AA48495	AA55593, AA55594
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			61.00-63.00	58.00-60.00	63.00-64.00	66.00-68.00	69.00-71.00
Electrical Conductivity*	µS/cm	1.0	440	380	430	570	3600

Envirolab ID	Units	PQL	PFL0924-AW	PFL0924-AX	PFL0924-AY	PFL0924-AZ	PFL0924-BA
Your Reference			AA55721, AA55722	AA56616, AA56617	AA038015, AA038016	AA88535, AA88536	AA88574, AA88575
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			56.00-58.00	26.00-28.00	74.00-76.00	6.00-8.00	43.00-45.00
pH*	pH units		8.2	8.1	9.1	8.7	9.0
Electrical Conductivity*	µS/cm	1.0	850	530	460	250	240

Envirolab ID	Units	PQL	PFL0924-BB	PFL0924-BC	PFL0924-BD	PFL0924-BE	PFL0924-BF
Your Reference			AA95154, AA95155	AA90177, AA90178	AA114832, AA114834	AA119692, AA119693	AA116083, AA116084
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			18.00-20.00	21.00-23.00	36.00-38.00	46.00-48.00	98.00-100.00
pH*	pH units		8.4	9.0	9.0	8.6	9.1
Electrical Conductivity*	µS/cm	1.0	510	340	290	810	220

Envirolab ID	Units	PQL	PFL0924-BG	PFL0924-BH	PFL0924-BI	PFL0924-BJ	PFL0924-BK
Your Reference			AA121581	AA128029	BB022189, BB022190	AA137144, AA137144	AA166663, AA166664
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			110.00-111.00	4.00-8.00	10.00-12.00	0.00-2.00	13.00-15.00
pH*	pH units		9.8	8.0	5.9	6.4	6.5
Electrical Conductivity*	µS/cm	1.0	510	420	2700	220	1600

Envirolab ID	Units	PQL	PFL0924-BL	PFL0924-BM	PFL0924-BN	PFL0924-BO	PFL0924-BP
Your Reference			BB033348	BB033363	AA174337, AA174338	AA177501, AA177502	AA185053, AA185054
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			44.00-48.00	12.00-15.00	97.00-99.00	5.00-7.00	10.00-12.00
pH*	pH units		8.5	7.0	8.6	6.0	9.2
Electrical Conductivity*	µS/cm	1.0	270	1100	450	1400	440

Envirolab ID	Units	PQL	PFL0924-BQ	PFL0924-BR	PFL0924-BS	PFL0924-BT	PFL0924-BU
Your Reference			AA195223, AA195224	AA203067, AA203068	AA210979, AA210981	AA223341, AA223342	AA225833, AA225834
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			6.00-8.00	18.00-20.00	43.00-45.00	2.00-4.00	22.00-24.00
pH*	pH units		5.9	5.3	6.4	5.9	9.2
Electrical Conductivity*	µS/cm	1.0	770	4000	1400	200	410

Envirolab ID	Units	PQL	PFL0924-BV	PFL0924-BW	PFL0924-BX	PFL0924-BY	PFL0924-BZ
Your Reference			AA226479, AA226481	AA239271, AA239272	AA239941, AA239942	AA235088, AA235089	AA244999, AA245001
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			11.00-13.00	30.00-32.00	4.00-6.00	6.00-8.00	16.00-18.00
pH*	pH units		9.1	8.7	7.7	5.3	9.3
Electrical Conductivity*	µS/cm	1.0	410	450	250	1700	450

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Inorganics (1:2 soil:water) (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-CA	PFL0924-CB	PFL0924-CC	PFL0924-CD	PFL0924-CE
Your Reference			AA245517, AA245518	AA245538, AA245539	AA245544, AA245545	AA245735, AA245736	AA245823, AA245824
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			3.00-5.00	22.00-24.00	27.00-29.00	56.00-58.00	65.00-67.00
pH*	pH units		7.0	7.2	8.0	9.2	9.1
Electrical Conductivity*	µS/cm	1.0	580	4700	1900	510	440

Envirolab ID	Units	PQL	PFL0924-CF	PFL0924-CG	PFL0924-CH	PFL0924-CI	PFL0924-CJ
Your Reference			AA245834,	AA270171, AA270172	AA272156, AA272157	AA272169, AA272170	AA272573, AA272574
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			75.00-76.00	46.00-48.00	78.00-80.00	90.00-92.00	18.00-20.00
pH*	pH units		9.4	8.5	9.0	8.9	8.5
Electrical Conductivity*	µS/cm	1.0	1300	540	310	410	380

Envirolab ID	Units	PQL	PFL0924-CK	PFL0924-CL	PFL0924-CM	PFL0924-CN	PFL0924-CO
Your Reference			AA275249, AA275251	AA278100	AA278075	AA278050	AA277600
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			47.00-49.00	24.50-25.00	80.00-81.50	59.00-59.50	89.00-89.50
pH*	pH units		8.0	8.2	8.6	8.4	8.7
Electrical Conductivity*	µS/cm	1.0	320	980	590	630	480

Envirolab ID	Units	PQL	PFL0924-CP	PFL0924-CQ	PFL0924-CR	PFL0924-CS	PFL0924-CT
Your Reference			AA277950	AA277975	AA278125	AA278275	AA278025
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			98.00-98.50	100.00-100.50	60.00-60.80	66.87-67.87	2.46-4.80
pH*	pH units		9.1	8.9	9.1	9.6	7.5
Electrical Conductivity*	µS/cm	1.0	360	350	300	250	560

Envirolab ID	Units	PQL	PFL0924-CU	PFL0924-CV	PFL0924-CW	PFL0924-CX	PFL0924-CY
Your Reference			AA277575	AA278300	AA280650	AA278000	AA280675
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			51.73-52.73	27.69-28.47	36.12-36.62	25.40-26.05	51.81-52.37
pH*	pH units		8.6	4.6	8.1	6.6	8.1
Electrical Conductivity*	µS/cm	1.0	310	5500	560	1800	460

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Acid Mine Drainage (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-01	PFL0924-02	PFL0924-03	PFL0924-04	PFL0924-05
Your Reference			AA191780	AA191860	AA191900	AA191920	AA191933
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	58.82-59.59	96.00-98.00	109.00-111.00	129.00-131.00
ANC H2SO4*	kg H2SO4/t	0.50	20	10	400	24	21
Fizz Rating*	-		1.0	1.0	4.0	1.0	1.0
NAG pH	pH units		8.49	6.85	11.2	8.02	8.25
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	2.0	1.1	41	2.4	2.2
Envirolab ID	Units	PQL	PFL0924-06	PFL0924-07	PFL0924-08	PFL0924-09	PFL0924-10
Your Reference			AA191940	AA192160	AA192166	AA192180	AA192460
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			8.00-10.00	17.00-19.00	31.00-33.00	40.00-42.00	54.00-55.60
ANC H2SO4*	kg H2SO4/t	0.50	9.9	6.6	5.1	6.3	230
Fizz Rating*	-		1.0	0.0	0.0	0.0	4.0
NAG pH	pH units		6.94	7.42	7.07	7.44	11.0
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	1.0	0.67	0.52	0.64	24
Envirolab ID	Units	PQL	PFL0924-11	PFL0924-12	PFL0924-13	PFL0924-14	PFL0924-15
Your Reference			AA192820	AA192833	AA192840	AA192860	AA192866
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			4.00-5.80	15.00-17.00	76.00-78.00	5.00-6.00	16.30-18.00
ANC H2SO4*	kg H2SO4/t	0.50	14	17	22	9.3	18
Fizz Rating*	-		0.0	1.0	1.0	0.0	1.0
NAG pH	pH units		7.62	7.99	5.88	7.02	8.03
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	0.79	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	1.5	1.7	2.3	0.95	1.8
Envirolab ID	Units	PQL	PFL0924-16	PFL0924-17	PFL0924-18	PFL0924-19	PFL0924-20
Your Reference			AA192880	AA192899	AA195333	AA195640	AA195699
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			33.80-34.00	105.00-105.50	0.64-1.95	87.00-89.00	96.00-98.00
ANC H2SO4*	kg H2SO4/t	0.50	4.9	26	3.2	25	18
Fizz Rating*	-		0.0	2.0	0.0	2.0	1.0
NAG pH	pH units		4.52	9.77	6.30	9.16	7.35
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	1.7	<0.50	1.5	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	0.51	2.6	0.32	2.5	1.9
Envirolab ID	Units	PQL	PFL0924-21	PFL0924-22	PFL0924-23	PFL0924-24	PFL0924-25
Your Reference			AA195700	AA196120	AA196640	AA196660	AA204466
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			139.00-141.00	142.00-144.00	146.50-148.50	44.70-46.00	47.88-49.17
ANC H2SO4*	kg H2SO4/t	0.50	21	41	270	21	650
Fizz Rating*	-		1.0	1.0	5.0	1.0	5.0
NAG pH	pH units		5.39	7.89	11.3	6.21	11.0
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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Acid Mine Drainage (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-21	PFL0924-22	PFL0924-23	PFL0924-24	PFL0924-25
Your Reference			AA195700	AA196120	AA196640	AA196660	AA204466
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			139.00-141.00	142.00-144.00	146.50-148.50	44.70-46.00	47.88-49.17
NAG pH7.0	kg H2SO4/t	0.50	0.95	<0.50	<0.50	0.79	<0.50
ANC CaCO3	% CaCO3	0.010	2.1	4.2	28	2.1	66
Envirolab ID	Units	PQL	PFL0924-26	PFL0924-27	PFL0924-28	PFL0924-29	PFL0924-30
Your Reference			AA204480	AA204499	AA204500	AA204520	AA204533
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			67.00-69.00	20.60-21.50	41.60-41.80	55.30-55.60	80.00-81.20
ANC H2SO4*	kg H2SO4/t	0.50	18	17	19	18	19
Fizz Rating*	-		1.0	1.0	0.0	0.0	1.0
NAG pH	pH units		3.73	7.58	6.16	6.64	7.86
NAG pH4.5	kg H2SO4/t	0.50	1.3	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	3.1	<0.50	0.91	1.0	<0.50
ANC CaCO3	% CaCO3	0.010	1.8	1.7	1.9	1.8	2.0
Envirolab ID	Units	PQL	PFL0924-31	PFL0924-32	PFL0924-33	PFL0924-34	PFL0924-35
Your Reference			AA204540	AA204560	AA204566	AA204580	AA205933
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			103.50-103.80	41.00-43.50	57.00-59.85	64.00-67.00	109.00-111.50
ANC H2SO4*	kg H2SO4/t	0.50	18	12	25	26	21
Fizz Rating*	-		1.0	1.0	1.0	0.0	1.0
NAG pH	pH units		7.63	3.66	6.18	6.79	6.86
NAG pH4.5	kg H2SO4/t	0.50	<0.50	1.5	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	3.4	<0.50	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	1.8	1.2	2.5	2.7	2.1
Envirolab ID	Units	PQL	PFL0924-36	PFL0924-37	PFL0924-38	PFL0924-40	PFL0924-41
Your Reference			AA205940	AA205960	AA205966	AA264350	AA263975
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			128.00-130.00	109.00-111.00	121.00-123.00	86.00-88.00	129.00-131.00
ANC H2SO4*	kg H2SO4/t	0.50	19	23	5.3	24	25
Fizz Rating*	-		1.0	1.0	1.0	1.0	1.0
NAG pH	pH units		2.38	7.43	5.57	7.24	8.06
NAG pH4.5	kg H2SO4/t	0.50	46	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	58	<0.50	2.1	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	1.9	2.4	0.54	2.5	2.6
Envirolab ID	Units	PQL	PFL0924-42	PFL0924-43	PFL0924-44	PFL0924-45	PFL0924-46
Your Reference			AA264000	AA275375	AA273200	AA273350	AA273175
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			138.00-140.00	4.40-4.80	8.00-8.50	18.00-18.50	47.30-47.80
ANC H2SO4*	kg H2SO4/t	0.50	30	28	24	23	12
Fizz Rating*	-		2.0	0.0	0.0	0.0	1.0
NAG pH	pH units		8.72	4.24	6.15	7.68	7.12
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	2.8	0.59	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	3.1	2.8	2.5	2.4	1.2

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Acid Mine Drainage (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-47	PFL0924-48	PFL0924-49	PFL0924-50	PFL0924-51
Your Reference			AA275000	AA206020	AA206000	AA205999	AA205980
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			76.00-78.00	1.00-3.00	16.00-18.70	19.50-22.00	46.00-48.60
ANC H2SO4*	kg H2SO4/t	0.50	20	<0.50	19	5.4	19
Fizz Rating*	-		1.0	0.0	1.0	1.0	1.0
NAG pH	pH units		7.73	5.42	6.33	7.07	7.69
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	2.9	<0.50	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	2.0	<0.010	1.9	0.56	2.0
Envirolab ID	Units	PQL	PFL0924-52	PFL0924-53	PFL0924-54	PFL0924-55	PFL0924-56
Your Reference			AA258600	AA258625	AA258900	AA258925	AA258950
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			62.52-64.55	98.00-100.00	55.50-57.50	61.50-63.50	102.80-104.80
ANC H2SO4*	kg H2SO4/t	0.50	15	50	19	13	20
Fizz Rating*	-		1.0	3.0	1.0	0.0	1.0
NAG pH	pH units		6.34	7.50	6.95	4.96	4.06
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	0.67
NAG pH7.0	kg H2SO4/t	0.50	0.63	<0.50	<0.50	0.80	2.2
ANC CaCO3	% CaCO3	0.010	1.5	5.1	2.0	1.3	2.0
Envirolab ID	Units	PQL	PFL0924-57	PFL0924-58	PFL0924-59	PFL0924-60	PFL0924-61
Your Reference			AA261800	AA275400	AA275425	AA263750	AA263775
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			106.52-108.70	60.00-62.00	62.80-64.20	24.00-26.00	36.00-38.00
ANC H2SO4*	kg H2SO4/t	0.50	19	17	17	11	14
Fizz Rating*	-		1.0	1.0	1.0	1.0	1.0
NAG pH	pH units		7.38	5.89	5.32	7.22	7.18
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	0.76	0.93	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	2.0	1.7	1.7	1.2	1.4
Envirolab ID	Units	PQL	PFL0924-62	PFL0924-63	PFL0924-64	PFL0924-65	PFL0924-66
Your Reference			AA263800	AA206040	AA206060	AA206080	AA206180
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			112.00-114.00	12.00-14.00	39.00-41.00	59.12-60.50	150.00-152.00
ANC H2SO4*	kg H2SO4/t	0.50	32	2.6	8.7	33	24
Fizz Rating*	-		1.0	1.0	0.0	0.0	1.0
NAG pH	pH units		7.62	6.37	7.72	7.35	7.27
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	2.5	<0.50	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	3.2	0.26	0.89	3.4	2.4
Envirolab ID	Units	PQL	PFL0924-67	PFL0924-68	PFL0924-69	PFL0924-70	PFL0924-71
Your Reference			AA206400	AA206433	AA263825	AA263850	AA263875
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			163.00-164.00	164.46-166.00	22.00-24.00	40.00-42.00	50.28-25.00
ANC H2SO4*	kg H2SO4/t	0.50	36	40	1.2	17	23
Fizz Rating*	-		2.0	2.0	0.0	0.0	1.0
NAG pH	pH units		7.62	7.51	5.96	8.55	4.44
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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Acid Mine Drainage (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-67	PFL0924-68	PFL0924-69	PFL0924-70	PFL0924-71
Your Reference			AA206400	AA206433	AA263825	AA263850	AA263875
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			163.00-164.00	164.46-166.00	22.00-24.00	40.00-42.00	50.28-25.00
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	3.3	<0.50	1.7
ANC CaCO3	% CaCO3	0.010	3.7	4.1	0.12	1.7	2.3
Envirolab ID	Units	PQL	PFL0924-72	PFL0924-73	PFL0924-74	PFL0924-75	PFL0924-76
Your Reference			AA263900	AA275450	AA206440	AA206460	AA206466
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			70.00-72.00	0.80-1.50	1.50-3.00	45.00-47.00	48.00-49.74
ANC H2SO4*	kg H2SO4/t	0.50	21	<0.50	1.1	13	8.1
Fizz Rating*	-		1.0	1.0	1.0	1.0	0.0
NAG pH	pH units		3.69	5.22	5.52	8.29	6.72
NAG pH4.5	kg H2SO4/t	0.50	1.9	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	4.7	2.9	3.5	<0.50	1.1
ANC CaCO3	% CaCO3	0.010	2.2	0.044	0.11	1.4	0.83
Envirolab ID	Units	PQL	PFL0924-77	PFL0924-78	PFL0924-79	PFL0924-80	PFL0924-81
Your Reference			AA206480	AA206499	AA206500	AA204733	AA204740
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			0.00-0.10	11.17-13.00	54.00-56.00	87.00-89.00	121.00-123.00
ANC H2SO4*	kg H2SO4/t	0.50	1.9	0.62	17	16	31
Fizz Rating*	-		0.0	0.0	1.0	1.0	0.0
NAG pH	pH units		6.00	5.15	4.13	7.54	7.39
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	0.51	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	1.4	3.7	2.6	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	0.20	0.063	1.7	1.6	3.2
Envirolab ID	Units	PQL	PFL0924-82	PFL0924-83	PFL0924-84	PFL0924-85	PFL0924-86
Your Reference			AA204760	AA205866	AA205880	AA205899	AA205900
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			50.00-52.00	80.00-81.53	83.40-84.00	0.00-1.00	13.00-14.81
ANC H2SO4*	kg H2SO4/t	0.50	12	28	16	1.8	7.4
Fizz Rating*	-		1.0	1.0	1.0	0.0	0.0
NAG pH	pH units		7.15	9.33	4.11	6.74	8.36
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	1.2	0.60	<0.50
ANC CaCO3	% CaCO3	0.010	1.3	2.8	1.7	0.18	0.75
Envirolab ID	Units	PQL	PFL0924-87	PFL0924-88	PFL0924-89	PFL0924-90	PFL0924-91
Your Reference			AA263950	AA263925	AA205920	AA258575	AA275475
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			65.00-66.15	96.60-97.80	17.00-18.50	47.94-48.75	1.20-2.00
ANC H2SO4*	kg H2SO4/t	0.50	27	21	11	23	1.2
Fizz Rating*	-		1.0	1.0	1.0	1.0	0.0
NAG pH	pH units		7.96	7.64	7.05	7.64	6.41
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	1.9
ANC CaCO3	% CaCO3	0.010	2.8	2.2	1.1	2.3	0.12

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Acid Mine Drainage (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-92	PFL0924-93	PFL0924-94	PFL0924-95	PFL0924-96
Your Reference			AA275500	AA264375	AA264400	AA272775	AA272800
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			64.00-66.00	1.00-2.00	8.00-10.00	14.00-15.98	28.00-30.00
ANC H2SO4*	kg H2SO4/t	0.50	13	9.5	5.3	6.0	9.7
Fizz Rating*	-		1.0	0.0	0.0	1.0	0.0
NAG pH	pH units		7.16	7.53	7.34	8.37	7.55
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	1.3	0.97	0.54	0.62	0.99
Envirolab ID	Units	PQL	PFL0924-97	PFL0924-98	PFL0924-99	PFL0924-AA	PFL0924-AB
Your Reference			AA275350	AA277300	AA277400	AA277275	AA275750
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			26.89-28.30	28.31-29.00	35.00-37.00	52.83-54.20	64.08-65.60
ANC H2SO4*	kg H2SO4/t	0.50	5.3	4.4	13	26	18
Fizz Rating*	-		0.0	0.0	1.0	1.0	1.0
NAG pH	pH units		7.58	7.65	7.75	8.36	6.97
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	0.54	0.45	1.3	2.7	1.8
Envirolab ID	Units	PQL	PFL0924-AC	PFL0924-AD	PFL0924-AE	PFL0924-AF	PFL0924-AG
Your Reference			AA275725	AA275525	AA275550	AA275575	AA275600
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			66.00-68.00	18.00-20.00	17.11-19.00	30.82-32.89	34.00-36.00
ANC H2SO4*	kg H2SO4/t	0.50	24	<0.50	16	23	14
Fizz Rating*	-		1.0	1.0	0.0	1.0	1.0
NAG pH	pH units		4.58	5.68	8.08	8.86	8.40
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	1.3	5.1	<0.50	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	2.4	0.020	1.6	2.4	1.4
Envirolab ID	Units	PQL	PFL0924-AH	PFL0924-AI	PFL0924-AJ	PFL0924-AK	PFL0924-AL
Your Reference			AA275625	AA275650	AA275675	AA275700	AA277550
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			0.00-0.28	13.00-14.43	16.00-18.00	23.00-25.00	57.00-59.00
ANC H2SO4*	kg H2SO4/t	0.50	1.9	3.7	8.2	1.9	15
Fizz Rating*	-		0.0	0.0	0.0	0.0	1.0
NAG pH	pH units		6.84	6.87	8.77	6.48	2.49
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	34
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	0.99	46
ANC CaCO3	% CaCO3	0.010	0.19	0.38	0.83	0.20	1.5
Envirolab ID	Units	PQL	PFL0924-AM	PFL0924-AN	PFL0924-AO	PFL0924-AP	PFL0924-AQ
Your Reference			AA26244, AA26245	AA029018, AA029019	AA030056, AA030058	AA030653, AA030654	AA030750, AA030752
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	2.00-4.00	77.00-79.00	69.00-71.00	56.00-58.00
ANC H2SO4*	kg H2SO4/t	0.50	5.2	1.7	14	4.9	10
Fizz Rating*	-		0.0	0.0	1.0	0.0	0.0
NAG pH	pH units		8.09	5.86	3.72	2.25	3.39
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	31	2.6

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Acid Mine Drainage (Solid adhoc)

Envirolab ID Your Reference	Units	PQL	PFL0924-AM AA26244, AA26245	PFL0924-AN AA029018, AA029019	PFL0924-AO AA030056, AA030058	PFL0924-AP AA030653, AA030654	PFL0924-AQ AA030750, AA030752
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	2.00-4.00	77.00-79.00	69.00-71.00	56.00-58.00
NAG pH7.0	kg H2SO4/t	0.50	<0.50	1.1	2.7	40	4.5
ANC CaCO3	% CaCO3	0.010	0.53	0.17	1.4	0.50	1.0

Envirolab ID Your Reference	Units	PQL	PFL0924-AR AA031641, AA031642	PFL0924-AS AA032011, AA032012	PFL0924-AT AA48491	PFL0924-AU AA48494, AA48495	PFL0924-AV AA55593, AA55594
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			61.00-63.00	58.00-60.00	63.00-64.00	66.00-68.00	69.00-71.00
ANC H2SO4*	kg H2SO4/t	0.50	10	24	19	28	9.2
Fizz Rating*	-		0.0	1.0	1.0	0.0	0.0
NAG pH	pH units		4.79	8.95	8.34	4.23	2.51
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	59
NAG pH7.0	kg H2SO4/t	0.50	0.99	<0.50	<0.50	2.4	69
ANC CaCO3	% CaCO3	0.010	1.1	2.4	1.9	2.8	0.94

Envirolab ID Your Reference	Units	PQL	PFL0924-AW AA55721, AA55722	PFL0924-AX AA56616, AA56617	PFL0924-AY AA038015, AA038016	PFL0924-AZ AA88535, AA88536	PFL0924-BA AA88574, AA88575
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			56.00-58.00	26.00-28.00	74.00-76.00	6.00-8.00	43.00-45.00
ANC H2SO4*	kg H2SO4/t	0.50	16	10	27	6.8	12
Fizz Rating*	-		1.0	0.0	1.0	0.0	0.0
NAG pH	pH units		3.50	7.73	7.58	6.42	6.85
NAG pH4.5	kg H2SO4/t	0.50	1.8	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	4.0	<0.50	<0.50	1.2	<0.50
ANC CaCO3	% CaCO3	0.010	1.6	1.1	2.7	0.69	1.2

Envirolab ID Your Reference	Units	PQL	PFL0924-BB AA95154, AA95155	PFL0924-BC AA90177, AA90178	PFL0924-BD AA114832, AA114834	PFL0924-BE AA119692, AA119693	PFL0924-BF AA116083, AA116084
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			18.00-20.00	21.00-23.00	36.00-38.00	46.00-48.00	98.00-100.00
ANC H2SO4*	kg H2SO4/t	0.50	24	9.7	8.9	16	27
Fizz Rating*	-		0.0	0.0	0.0	0.0	1.0
NAG pH	pH units		8.49	7.63	7.12	7.27	7.92
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	2.5	0.99	0.91	1.6	2.8

Envirolab ID Your Reference	Units	PQL	PFL0924-BG AA121581	PFL0924-BH AA128029	PFL0924-BI BB022189, BB022190	PFL0924-BJ AA137144, AA137144	PFL0924-BK AA166663, AA166664
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			110.00-111.00	4.00-8.00	10.00-12.00	0.00-2.00	13.00-15.00
ANC H2SO4*	kg H2SO4/t	0.50	29	5.3	2.4	4.3	4.3
Fizz Rating*	-		2.0	0.0	0.0	0.0	0.0
NAG pH	pH units		9.48	7.34	5.70	5.49	7.01
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	1.2	2.7	<0.50

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Acid Mine Drainage (Solid adhoc)

Envirolab ID Your Reference	Units	PQL	PFL0924-BG AA121581	PFL0924-BH AA128029	PFL0924-BI BB022189, BB022190	PFL0924-BJ AA137144, AA137144	PFL0924-BK AA166663, AA166664
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			110.00-111.00	4.00-8.00	10.00-12.00	0.00-2.00	13.00-15.00
ANC CaCO3	% CaCO3	0.010	3.0	0.54	0.24	0.44	0.44

Envirolab ID Your Reference	Units	PQL	PFL0924-BL BB033348	PFL0924-BM BB033363	PFL0924-BN AA174337, AA174338	PFL0924-BO AA177501, AA177502	PFL0924-BP AA185053, AA185054
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			44.00-48.00	12.00-15.00	97.00-99.00	5.00-7.00	10.00-12.00
ANC H2SO4*	kg H2SO4/t	0.50	9.2	8.9	25	2.0	8.5
Fizz Rating*	-		0.0	0.0	0.0	0.0	0.0
NAG pH	pH units		5.97	7.49	4.60	5.50	5.71
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	1.3	3.0	0.79
ANC CaCO3	% CaCO3	0.010	0.94	0.91	2.6	0.20	0.86

Envirolab ID Your Reference	Units	PQL	PFL0924-BQ AA195223, AA195224	PFL0924-BR AA203067, AA203068	PFL0924-BS AA210979, AA210981	PFL0924-BT AA223341, AA223342	PFL0924-BU AA225833, AA225834
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			6.00-8.00	18.00-20.00	43.00-45.00	2.00-4.00	22.00-24.00
ANC H2SO4*	kg H2SO4/t	0.50	2.3	1.5	7.4	<0.50	13
Fizz Rating*	-		0.0	0.0	0.0	0.0	0.0
NAG pH	pH units		6.15	5.44	7.42	5.23	5.45
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	1.5	2.0	<0.50	3.5	0.79
ANC CaCO3	% CaCO3	0.010	0.24	0.15	0.76	<0.010	1.3

Envirolab ID Your Reference	Units	PQL	PFL0924-BV AA226479, AA226481	PFL0924-BW AA239271, AA239272	PFL0924-BX AA239941, AA239942	PFL0924-BY AA235088, AA235089	PFL0924-BZ AA244999, AA245001
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			11.00-13.00	30.00-32.00	4.00-6.00	6.00-8.00	16.00-18.00
ANC H2SO4*	kg H2SO4/t	0.50	5.8	11	2.0	1.1	15
Fizz Rating*	-		1.0	0.0	0.0	0.0	1.0
NAG pH	pH units		7.29	6.90	6.58	5.68	8.22
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	0.89	3.0	<0.50
ANC CaCO3	% CaCO3	0.010	0.59	1.2	0.21	0.11	1.5

Envirolab ID Your Reference	Units	PQL	PFL0924-CA AA245517, AA245518	PFL0924-CB AA245538, AA245539	PFL0924-CC AA245544, AA245545	PFL0924-CD AA245735, AA245736	PFL0924-CE AA245823, AA245824
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			3.00-5.00	22.00-24.00	27.00-29.00	56.00-58.00	65.00-67.00
ANC H2SO4*	kg H2SO4/t	0.50	3.0	27	18	22	25
Fizz Rating*	-		0.0	0.0	0.0	1.0	0.0
NAG pH	pH units		6.49	8.15	8.25	7.74	8.30
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	1.1	<0.50	<0.50	<0.50	<0.50
ANC CaCO3	% CaCO3	0.010	0.31	2.7	1.8	2.2	2.6

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Acid Mine Drainage (Solid adhoc)

Envirolab ID Your Reference	Units	PQL	PFL0924-CF AA245834,	PFL0924-CG AA270171, AA270172	PFL0924-CH AA272156, AA272157	PFL0924-CI AA272169, AA272170	PFL0924-CJ AA272573, AA272574
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			75.00-76.00	46.00-48.00	78.00-80.00	90.00-92.00	18.00-20.00
ANC H2SO4*	kg H2SO4/t	0.50	170	5.3	14	13	10
Fizz Rating*	-		1.0	0.0	1.0	1.0	0.0
NAG pH	pH units		9.57	8.31	5.11	5.18	8.23
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	<0.50	<0.50	1.4	1.4	<0.50
ANC CaCO3	% CaCO3	0.010	17	0.55	1.4	1.3	1.0

Envirolab ID Your Reference	Units	PQL	PFL0924-CK AA275249, AA275251	PFL0924-CL AA278100	PFL0924-CM AA278075	PFL0924-CN AA278050	PFL0924-CO AA277600
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			47.00-49.00	24.50-25.00	80.00-81.50	59.00-59.50	89.00-89.50
ANC H2SO4*	kg H2SO4/t	0.50	9.4	10	13	11	22
Fizz Rating*	-		0.0	0.0	0.0	0.0	1.0
NAG pH	pH units		7.55	5.68	3.21	3.26	2.33
NAG pH4.5	kg H2SO4/t	0.50	<0.50	<0.50	6.0	4.7	51
NAG pH7.0	kg H2SO4/t	0.50	<0.50	1.1	16	11	64
ANC CaCO3	% CaCO3	0.010	0.96	1.0	1.3	1.1	2.3

Envirolab ID Your Reference	Units	PQL	PFL0924-CP AA277950	PFL0924-CQ AA277975	PFL0924-CR AA278125	PFL0924-CS AA278275	PFL0924-CT AA278025
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			98.00-98.50	100.00-100.50	60.00-60.80	66.87-67.87	2.46-4.80
ANC H2SO4*	kg H2SO4/t	0.50	21	26	13	13	3.1
Fizz Rating*	-		1.0	1.0	1.0	1.0	0.0
NAG pH	pH units		2.39	2.46	3.68	4.18	6.66
NAG pH4.5	kg H2SO4/t	0.50	35	35	2.1	<0.50	<0.50
NAG pH7.0	kg H2SO4/t	0.50	43	44	7.6	2.1	0.79
ANC CaCO3	% CaCO3	0.010	2.2	2.7	1.3	1.3	0.32

Envirolab ID Your Reference	Units	PQL	PFL0924-CU AA277575	PFL0924-CV AA278300	PFL0924-CW AA280650	PFL0924-CX AA278000	PFL0924-CY AA280675
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			51.73-52.73	27.69-28.47	36.12-36.62	25.40-26.05	51.81-52.37
ANC H2SO4*	kg H2SO4/t	0.50	15	<0.50	8.6	<0.50	13
Fizz Rating*	-		0.0	0.0	0.0	0.0	1.0
NAG pH	pH units		2.93	2.00	4.72	4.09	3.13
NAG pH4.5	kg H2SO4/t	0.50	10	190	<0.50	0.55	5.8
NAG pH7.0	kg H2SO4/t	0.50	23	220	1.0	3.5	9.8
ANC CaCO3	% CaCO3	0.010	1.6	<0.010	0.88	0.020	1.3

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Subcontracted Metals - Certificate: 438.0/2500640 - Analysed By Intertek Australia - Genalysis (Minerals) (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-01	PFL0924-02	PFL0924-03	PFL0924-04	PFL0924-05
Your Reference			AA191780	AA191860	AA191900	AA191920	AA191933
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	58.82-59.59	96.00-98.00	109.00-111.00	129.00-131.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-06	PFL0924-07	PFL0924-08	PFL0924-09	PFL0924-10
Your Reference			AA191940	AA192160	AA192166	AA192180	AA192460
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			8.00-10.00	17.00-19.00	31.00-33.00	40.00-42.00	54.00-55.60
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-11	PFL0924-12	PFL0924-13	PFL0924-14	PFL0924-15
Your Reference			AA192820	AA192833	AA192840	AA192860	AA192866
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			4.00-5.80	15.00-17.00	76.00-78.00	5.00-6.00	16.30-18.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-16	PFL0924-17	PFL0924-18	PFL0924-19	PFL0924-20
Your Reference			AA192880	AA192899	AA195333	AA195640	AA195699
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			33.80-34.00	105.00-105.50	0.64-1.95	87.00-89.00	96.00-98.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-21	PFL0924-22	PFL0924-23	PFL0924-24	PFL0924-25
Your Reference			AA195700	AA196120	AA196640	AA196660	AA204466
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			139.00-141.00	142.00-144.00	146.50-148.50	44.70-46.00	47.88-49.17
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-26	PFL0924-27	PFL0924-28	PFL0924-29	PFL0924-30
Your Reference			AA204480	AA204499	AA204500	AA204520	AA204533
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			67.00-69.00	20.60-21.50	41.60-41.80	55.30-55.60	80.00-81.20
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-31	PFL0924-32	PFL0924-33	PFL0924-34	PFL0924-35
Your Reference			AA204540	AA204560	AA204566	AA204580	AA205933
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			103.50-103.80	41.00-43.50	57.00-59.85	64.00-67.00	109.00-111.50
Report Attached	ppm		YES	YES	YES	YES	YES

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Subcontracted Metals - Certificate: 438.0/2500640 - Analysed By Intertek Australia - Genalysis (Minerals) (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-36	PFL0924-37	PFL0924-38	PFL0924-40	PFL0924-41
Your Reference			AA205940	AA205960	AA205966	AA264350	AA263975
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			128.00-130.00	109.00-111.00	121.00-123.00	86.00-88.00	129.00-131.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-42	PFL0924-43	PFL0924-44	PFL0924-45	PFL0924-46
Your Reference			AA264000	AA275375	AA273200	AA273350	AA273175
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			138.00-140.00	4.40-4.80	8.00-8.50	18.00-18.50	47.30-47.80
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-47	PFL0924-48	PFL0924-49	PFL0924-50	PFL0924-51
Your Reference			AA275000	AA206020	AA206000	AA205999	AA205980
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			76.00-78.00	1.00-3.00	16.00-18.70	19.50-22.00	46.00-48.60
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-52	PFL0924-53	PFL0924-54	PFL0924-55	PFL0924-56
Your Reference			AA258600	AA258625	AA258900	AA258925	AA258950
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			62.52-64.55	98.00-100.00	55.50-57.50	61.50-63.50	102.80-104.80
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-57	PFL0924-58	PFL0924-59	PFL0924-60	PFL0924-61
Your Reference			AA261800	AA275400	AA275425	AA263750	AA263775
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			106.52-108.70	60.00-62.00	62.80-64.20	24.00-26.00	36.00-38.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-62	PFL0924-63	PFL0924-64	PFL0924-65	PFL0924-66
Your Reference			AA263800	AA206040	AA206060	AA206080	AA206180
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			112.00-114.00	12.00-14.00	39.00-41.00	59.12-60.50	150.00-152.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-67	PFL0924-68	PFL0924-69	PFL0924-70	PFL0924-71
Your Reference			AA206400	AA206433	AA263825	AA263850	AA263875
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			163.00-164.00	164.46-166.00	22.00-24.00	40.00-42.00	50.28-25.00
Report Attached	ppm		YES	YES	YES	YES	YES

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Subcontracted Metals - Certificate: 438.0/2500640 - Analysed By Intertek Australia - Genalysis (Minerals) (Solid adhoc)

Envirolab ID	Units	PQL	PFL0924-72	PFL0924-73	PFL0924-74	PFL0924-75	PFL0924-76
Your Reference			AA263900	AA275450	AA206440	AA206460	AA206466
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			70.00-72.00	0.80-1.50	1.50-3.00	45.00-47.00	48.00-49.74
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-77	PFL0924-78	PFL0924-79	PFL0924-80	PFL0924-81
Your Reference			AA206480	AA206499	AA206500	AA204733	AA204740
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			0.00-0.10	11.17-13.00	54.00-56.00	87.00-89.00	121.00-123.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-82	PFL0924-83	PFL0924-84	PFL0924-85	PFL0924-86
Your Reference			AA204760	AA205866	AA205880	AA205899	AA205900
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			50.00-52.00	80.00-81.53	83.40-84.00	0.00-1.00	13.00-14.81
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-87	PFL0924-88	PFL0924-89	PFL0924-90	PFL0924-91
Your Reference			AA263950	AA263925	AA205920	AA258575	AA275475
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			65.00-66.15	96.60-97.80	17.00-18.50	47.94-48.75	1.20-2.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-92	PFL0924-93	PFL0924-94	PFL0924-95	PFL0924-96
Your Reference			AA275500	AA264375	AA264400	AA272775	AA272800
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			64.00-66.00	1.00-2.00	8.00-10.00	14.00-15.98	28.00-30.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-97	PFL0924-98	PFL0924-99	PFL0924-AA	PFL0924-AB
Your Reference			AA275350	AA277300	AA277400	AA277275	AA275750
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			26.89-28.30	28.31-29.00	35.00-37.00	52.83-54.20	64.08-65.60
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-AC	PFL0924-AD	PFL0924-AE	PFL0924-AF	PFL0924-AG
Your Reference			AA275725	AA275525	AA275550	AA275575	AA275600
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			66.00-68.00	18.00-20.00	17.11-19.00	30.82-32.89	34.00-36.00
Report Attached	ppm		YES	YES	YES	YES	YES

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Envirolab ID	Units	PQL	PFL0924-AH	PFL0924-AI	PFL0924-AJ	PFL0924-AK	PFL0924-AL
Your Reference			AA275625	AA275650	AA275675	AA275700	AA277550
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			0.00-0.28	13.00-14.43	16.00-18.00	23.00-25.00	57.00-59.00

Report Attached	ppm	YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-AM	PFL0924-AN	PFL0924-AO	PFL0924-AP	PFL0924-AQ
Your Reference			AA26244, AA26245	AA029018, AA029019	AA030056, AA030058	AA030653, AA030654	AA030750, AA030752
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			22.00-24.00	2.00-4.00	77.00-79.00	69.00-71.00	56.00-58.00

Report Attached	ppm	YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-AR	PFL0924-AS	PFL0924-AT	PFL0924-AU	PFL0924-AV
Your Reference			AA031641, AA031642	AA032011, AA032012	AA48491	AA48494, AA48495	AA55593, AA55594
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			61.00-63.00	58.00-60.00	63.00-64.00	66.00-68.00	69.00-71.00

Report Attached	ppm	YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-AW	PFL0924-AX	PFL0924-AY	PFL0924-AZ	PFL0924-BA
Your Reference			AA55721, AA55722	AA56616, AA56617	AA038015, AA038016	AA88535, AA88536	AA88574, AA88575
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			56.00-58.00	26.00-28.00	74.00-76.00	6.00-8.00	43.00-45.00

Report Attached	ppm	YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-BB	PFL0924-BC	PFL0924-BD	PFL0924-BE	PFL0924-BF
Your Reference			AA95154, AA95155	AA90177, AA90178	AA114832, AA114834	AA119692, AA119693	AA116083, AA116084
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			18.00-20.00	21.00-23.00	36.00-38.00	46.00-48.00	98.00-100.00

Report Attached	ppm	YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-BG	PFL0924-BH	PFL0924-BI	PFL0924-BJ	PFL0924-BK
Your Reference			AA121581	AA128029	BB022189, BB022190	AA137144, AA137144	AA166663, AA166664
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			110.00-111.00	4.00-8.00	10.00-12.00	0.00-2.00	13.00-15.00

Report Attached	ppm	YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-BL	PFL0924-BM	PFL0924-BN	PFL0924-BO	PFL0924-BP
Your Reference			BB033348	BB033363	AA174337, AA174338	AA177501, AA177502	AA185053, AA185054
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			44.00-48.00	12.00-15.00	97.00-99.00	5.00-7.00	10.00-12.00

Report Attached	ppm	YES	YES	YES	YES	YES

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Envirolab ID	Units	PQL	PFL0924-BQ	PFL0924-BR	PFL0924-BS	PFL0924-BT	PFL0924-BU
Your Reference			AA195223, AA195224	AA203067, AA203068	AA210979, AA210981	AA223341, AA223342	AA225833, AA225834
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			6.00-8.00	18.00-20.00	43.00-45.00	2.00-4.00	22.00-24.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-BV	PFL0924-BW	PFL0924-BX	PFL0924-BY	PFL0924-BZ
Your Reference			AA226479, AA226481	AA239271, AA239272	AA239941, AA239942	AA235088, AA235089	AA244999, AA245001
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			11.00-13.00	30.00-32.00	4.00-6.00	6.00-8.00	16.00-18.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-CA	PFL0924-CB	PFL0924-CC	PFL0924-CD	PFL0924-CE
Your Reference			AA245517, AA245518	AA245538, AA245539	AA245544, AA245545	AA245735, AA245736	AA245823, AA245824
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			3.00-5.00	22.00-24.00	27.00-29.00	56.00-58.00	65.00-67.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-CF	PFL0924-CG	PFL0924-CH	PFL0924-CI	PFL0924-CJ
Your Reference			AA245834,	AA270171, AA270172	AA272156, AA272157	AA272169, AA272170	AA272573, AA272574
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			75.00-76.00	46.00-48.00	78.00-80.00	90.00-92.00	18.00-20.00
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-CK	PFL0924-CL	PFL0924-CM	PFL0924-CN	PFL0924-CO
Your Reference			AA275249, AA275251	AA278100	AA278075	AA278050	AA277600
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			47.00-49.00	24.50-25.00	80.00-81.50	59.00-59.50	89.00-89.50
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-CP	PFL0924-CQ	PFL0924-CR	PFL0924-CS	PFL0924-CT
Your Reference			AA277950	AA277975	AA278125	AA278275	AA278025
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			98.00-98.50	100.00-100.50	60.00-60.80	66.87-67.87	2.46-4.80
Report Attached	ppm		YES	YES	YES	YES	YES

Envirolab ID	Units	PQL	PFL0924-CU	PFL0924-CV	PFL0924-CW	PFL0924-CX	PFL0924-CY
Your Reference			AA277575	AA278300	AA280650	AA278000	AA280675
Date Sampled			02/12/2024	02/12/2024	02/12/2024	02/12/2024	02/12/2024
Depth			51.73-52.73	27.69-28.47	36.12-36.62	25.40-26.05	51.81-52.37
Report Attached	ppm		YES	YES	YES	YES	YES

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Asbestos ID in Solid adhoc

Client ID	Envirolab ID	Description	Result
AA192180 40.00-42.00	PFL0924-09	185g Soil	No Asbestos Detected No trace fibres detected
AA192833 15.00-17.00	PFL0924-12	133g Soil	No Asbestos Detected No trace fibres detected
AA192880 33.80-34.00	PFL0924-16	136g Soil	No Asbestos Detected No trace fibres detected
AA192899 105.00-105.50	PFL0924-17	140g Soil	No Asbestos Detected No trace fibres detected
AA195699 96.00-98.00	PFL0924-20	186g Soil	No Asbestos Detected No trace fibres detected
AA196660 44.70-46.00	PFL0924-24	145g Soil	No Asbestos Detected No trace fibres detected
AA204520 55.30-55.60	PFL0924-29	160g Soil	No Asbestos Detected No trace fibres detected
AA204540 103.50-103.80	PFL0924-31	153g Soil	No Asbestos Detected No trace fibres detected
AA204560 41.00-43.50	PFL0924-32	196g Soil	No Asbestos Detected No trace fibres detected
AA275375 4.40-4.80	PFL0924-43	189 Soil	No Asbestos Detected No trace fibres detected
AA273350 18.00-18.50	PFL0924-45	184g Soil	No Asbestos Detected No trace fibres detected
AA273175 47.30-47.80	PFL0924-46	191g Soil	No Asbestos Detected No trace fibres detected
AA261800 106.52-108.70	PFL0924-57	159g Soil	No Asbestos Detected No trace fibres detected
AA263800 112.00-114.00	PFL0924-62	165g Soil	No Asbestos Detected No trace fibres detected
AA263825 22.00-24.00	PFL0924-69	96g Soil	No Asbestos Detected No trace fibres detected
AA206466 48.00-49.74	PFL0924-76	188g Soil	No Asbestos Detected No trace fibres detected
AA205880 83.40-84.00	PFL0924-84	140g Soil	No Asbestos Detected No trace fibres detected
AA263925 96.60-97.80	PFL0924-88	127g Soil	No Asbestos Detected No trace fibres detected
AA275500 64.00-66.00	PFL0924-92	165g Soil	No Asbestos Detected No trace fibres detected
AA272800 28.00-30.00	PFL0924-96	128g Soil	No Asbestos Detected No trace fibres detected
AA277275 52.83-54.20	PFL0924-AA	106g Soil	No Asbestos Detected No trace fibres detected Organic fibres detected

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Asbestos ID in Solid adhoc

Client ID	Envirolab ID	Description	Result
AA275575 30.82-32.89	PFL0924-AF	138g Soil	No Asbestos Detected No trace fibres detected Organic fibres detected
AA275675 16.00-18.00	PFL0924-AJ	138g Soil	No Asbestos Detected No trace fibres detected
AA277975 100.00-100.50	PFL0924-CQ	125g Soil	No Asbestos Detected No trace fibres detected Organic fibres detected

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Method Summary

Method ID	Methodology Summary
AMD-001	Acid Mine Drainage determined by AMIRA International - Acid Rock Drainage Test Handbook.
ASB-001_AS4964	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004. When mineral fibres of unknown type are detected by polarized light microscopy including dispersion staining, the fibres detected may or may not be asbestos fibres. To confirm the identities, another independent analytical technique may be required. Visible asbestos is defined as asbestos detected below the reporting limit of 0.1g/kg as per AS4964-2004
INORG-001_1:2	pH - Measured using pH meter and electrode. Please note that the results for water analyses are indicative only, as analysis can be completed outside of the APHA recommended holding times. Solids are reported from a 1:2 water extract unless otherwise specified. Alternatively, pH is determined in a 1:2 extract using 0.01M calcium chloride, pH is measured in the extract.
INORG-002_1:2	Conductivity and Salinity - measured using a conductivity cell at 25 C. Soil results reported from a 1:2 Soil:Water extract unless otherwise specified.
INORG-026	Fluoride determined by ion selective electrode (ISE) based on APHA latest edition, 4500-F-C. Solids are reported from a 1:5 water extract unless otherwise specified.
INORG-081	Anions determined by Ion Chromatography. Waters samples are filtered on receipt prior to analysis. Solids are analysed from a water extract. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
INORG-137	Determination of Total Nitrogen, Sulphur and Total Carbon in solids, rock, plant material and vegetation via combustion and NDIR.
METALS-020	Determination of various metals by ICP-OES.
METALS-021	Determination of Mercury by Cold Vapour AAS.
SUB-017	Subcontracted to Intertek Genalysis - Accreditation number 3244

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Result Definitions

Identifier	Description
NR	Not reported
NEPM	National Environment Protection Measure
NS	Not specified
LCS	Laboratory Control Sample
RPD	Relative Percent Difference
>	Greater than
<	Less than
PQL	Practical Quantitation Limit
INS	Insufficient sample for this test
NA	Test not required
NT	Not tested
DOL	Samples rejected due to particulate overload (air filters only)
RFD	Samples rejected due to filter damage (air filters only)
RUD	Samples rejected due to uneven deposition (air filters only)
##	Indicates a laboratory acceptance criteria outlier, for further details, see Result Comments and/or QC Comments

Quality Control Definitions

Blank

This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, and is determined by processing solvents and reagents in exactly the same manner as for samples.

Surrogate Spike

Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

LCS (Laboratory Control Sample)

This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Matrix Spike

A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

Duplicate

This is the complete duplicate analysis of a sample from the process batch. The sample selected should be one where the analyte concentration is easily measurable.

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Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria. Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction. Spikes for Physical and Aggregate Tests are not applicable. For VOCs in water samples, three vials are required for duplicate or spike analysis.

General Acceptance Criteria (GAC) - Analyte specific criteria applies for some analytes and is reflected in QC recovery tables.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% - see ELN-P05 QAQC tables for details (available on request); <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase. Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was typically insufficient in order to satisfy laboratory QA/QC protocols.

Miscellaneous Information

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached. We have taken the sampling date as being the date received at the laboratory.

Two significant figures are reported for the majority of tests and with a high degree of confidence, for results <10*PQL, the second significant figure may be in doubt i.e. has a relatively high degree of uncertainty and is provided for information only.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS where sediment/solids are included by default.

Urine Analysis - The BEI values listed are taken from the 2022 edition of *TLVs and BEIs Threshold Limits by ACGIH*.

Air volume measurements are not covered by Envirolab's NATA accreditation.

Data Quality Assessment Summary PFL0924

Client Details

Client	Ausgold Exploration Pty Ltd
Your Reference	Waste Rock Analysis
Date Issued	31/01/2025

Recommended Holding Time Compliance

Recommended holding time exceedances exist - See detailed list below

Quality Control and QC Frequency

QC Type	Compliant	Details
Blank	Yes	No Outliers
LCS	Yes	No Outliers
Duplicates	Yes	No Outliers
Matrix Spike	No	Matrix Spike Outliers Exist - See detailed list below
Surrogates / Extracted Internal Standards	Yes	No Outliers
QC Frequency	Yes	No Outliers

Surrogates/Extracted Internal Standards, Duplicates and/or Matrix Spikes are not always relevant/applicable to certain analyses and matrices. Therefore, said QC measures are deemed compliant in these situations by default. See Laboratory Acceptance Criteria for more information

Data Quality Assessment Summary PFL0924

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
Metals Solid adhoc	1, 6, 8, 11-12, 15, 17-19, 21, 23-24, 27, 29-32, 35-36, 41, 43, 45-50, 54-56, 58, 60, 65, 67-69, 72, 74-75, 77, CH, CK-CL, CN-CO, CQ, CS, CV, CX-CY	02/12/2024	24/12/2024	17/01/2025	Yes
	79-80, 83-84, 86, 90, 92, 94, 96-98, AA, AE-AF, AI-AK, AP, AR-AS	02/12/2024	24/12/2024	23/01/2025	Yes
	AT, AX, AZ, BC, BE, BH, BJ, BL-BP, BS-BT, BV, BX, CA, CC, CE-CF	02/12/2024	24/12/2024	24/01/2025	Yes
Metals-Hg Solid adhoc	1, 6, 8, 11-12, 15, 17-19, 21, 23-24, 27, 29-32, 35-36, 41, 43, 45-50, 54-56, 58, 60, 65, 67-69, 72, 74-75, 77, 79-80, 83-84, 86, 90, 92, 94, 96-98, AA, AE-AF, AI-AK, AP, AR-AT, AX, AZ, BC, BE, BH, BJ, BL-BP, BS-BT, BV, BX, CA, CC, CE-CF, CH, CK-CL, CN-CO, CQ, CS, CV, CX-CY	02/12/2024	24/12/2024	17/01/2025	Yes
Total Sulfur Solid adhoc	42-AB	02/12/2024	18/12/2024	09/01/2025	Yes
	AC-BP	02/12/2024	18/12/2024	13/01/2025	Yes
	BQ-CJ	02/12/2024	18/12/2024	14/01/2025	Yes
	CK-CY	02/12/2024	18/12/2024	15/01/2025	Yes
	1-38, 40-41	02/12/2024	18/12/2024	20/12/2024	Yes
Chloride Solid adhoc	1, 6, 8, 11-12, 15, 17-19, 21, 23-24, 27, 29-32, 35-36, 41	02/12/2024	24/12/2024	03/01/2025	Yes
	43, 45-50, 54-56, 58	02/12/2024	24/12/2024	04/01/2025	Yes
	60, 65, 67-69, 72, 74-75, 77	02/12/2024	24/12/2024	10/01/2025	Yes
	79-80, 83-84, 86, 90, 92	02/12/2024	24/12/2024	15/01/2025	Yes
	94, 96-98, AA	02/12/2024	24/12/2024	16/01/2025	Yes
	AE-AF, AI-AK, AP, AR-AT, AX, AZ, BC, BE, BH, BJ, BL-BP, BS-BT, BV, BX, CA, CC, CE-CF	02/12/2024	24/12/2024	22/01/2025	Yes
	CH, CK-CL, CN-CO, CQ, CS, CV, CX-CY	02/12/2024	24/12/2024	31/01/2025	Yes
Fluoride Solid adhoc	1, 6, 8, 11-12, 15, 17-19, 21, 23-24, 27, 29-32, 35-36, 41	02/12/2024	24/12/2024	03/01/2025	Yes
	43, 45-50, 54-56, 58, 60	02/12/2024	24/12/2024	06/01/2025	Yes
	65, 67-69, 72, 74-75, 77, 79-80, 83-84, 86, 90, 92, 94, 96-98, AA	02/12/2024	24/12/2024	13/01/2025	Yes
	AE-AF, AI-AK, AP, AR-AT, AX, AZ, BC, BE, BH, BJ, BL-BP, BS-BT, BV, BX, CA, CC, CE-CF, CH, CK-CL, CN-CO, CQ, CS, CV, CX-CY	02/12/2024	24/12/2024	23/01/2025	Yes
EC 1:2 soil:water Solid adhoc	42-AB	02/12/2024	18/12/2024	09/01/2025	No
	AC-BP	02/12/2024	18/12/2024	10/01/2025	No
	BQ-CY	02/12/2024	18/12/2024	14/01/2025	No
	1-38, 40-41	02/12/2024	18/12/2024	20/12/2024	No
pH 1:2 Solid adhoc	42-AB	02/12/2024	18/12/2024	09/01/2025	No
	AC-BP	02/12/2024	18/12/2024	10/01/2025	No

Data Quality Assessment Summary PFL0924

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
Asbestos-Bulk Materials Solid adhoc	BQ-CY	02/12/2024	18/12/2024	14/01/2025	No
	1-38, 40-41	02/12/2024	18/12/2024	20/12/2024	No
	9, 12, 16-17, 20, 24, 29, 31-32, 43, 45-46, 57, 62, AA, AF, AJ, CQ	02/12/2024	23/01/2025	23/01/2025	Yes
	69, 76, 84, 88	02/12/2024	23/01/2025	29/01/2025	Yes
	92, 96	02/12/2024	23/01/2025	30/01/2025	Yes
ANC CaCO3 Solid adhoc	21-38, 40-81	02/12/2024	18/12/2024	09/01/2025	Yes
	82-AV	02/12/2024	18/12/2024	13/01/2025	Yes
	AW-BP	02/12/2024	18/12/2024	14/01/2025	Yes
	BQ-CY	02/12/2024	18/12/2024	16/01/2025	Yes
	1-20	02/12/2024	18/12/2024	19/12/2024	Yes
ANC H2SO4 Solid adhoc	21-38, 40-81	02/12/2024	18/12/2024	09/01/2025	Yes
	82-AV	02/12/2024	18/12/2024	13/01/2025	Yes
	AW-BP	02/12/2024	18/12/2024	14/01/2025	Yes
	BQ-CY	02/12/2024	18/12/2024	16/01/2025	Yes
	1-20	02/12/2024	18/12/2024	19/12/2024	Yes
Fizz Rating Solid adhoc	21-38, 40-81	02/12/2024	18/12/2024	09/01/2025	Yes
	82-AV	02/12/2024	18/12/2024	13/01/2025	Yes
	AW-BP	02/12/2024	18/12/2024	14/01/2025	Yes
	BQ-CY	02/12/2024	18/12/2024	16/01/2025	Yes
	1-20	02/12/2024	18/12/2024	19/12/2024	Yes
NAG pH Solid adhoc	42-81	02/12/2024	18/12/2024	07/01/2025	Yes
	82-AB	02/12/2024	18/12/2024	08/01/2025	Yes
	AC-BP	02/12/2024	18/12/2024	10/01/2025	Yes
	BQ-CY	02/12/2024	18/12/2024	15/01/2025	Yes
	1-20	02/12/2024	18/12/2024	18/12/2024	Yes
	21-38, 40-41	02/12/2024	18/12/2024	20/12/2024	Yes
NAG pH4.5 Solid adhoc	42-81	02/12/2024	18/12/2024	07/01/2025	Yes
	82-AB	02/12/2024	18/12/2024	08/01/2025	Yes
	AC-BP	02/12/2024	18/12/2024	10/01/2025	Yes
	BQ-CY	02/12/2024	18/12/2024	15/01/2025	Yes
	1-20	02/12/2024	18/12/2024	18/12/2024	Yes
	21-38, 40-41	02/12/2024	18/12/2024	20/12/2024	Yes
NAG pH7.0 Solid adhoc	42-81	02/12/2024	18/12/2024	07/01/2025	Yes
	82-AB	02/12/2024	18/12/2024	08/01/2025	Yes
	AC-BP	02/12/2024	18/12/2024	10/01/2025	Yes
	BQ-CY	02/12/2024	18/12/2024	15/01/2025	Yes
	1-20	02/12/2024	18/12/2024	18/12/2024	Yes
	21-38, 40-41	02/12/2024	18/12/2024	20/12/2024	Yes
Metals - 4 acid digest Solid adhoc	1-38, 40-CY	02/12/2024	19/01/2025	24/01/2025	Yes

Data Quality Assessment Summary PFL0924

Outliers: Matrix Spike

INORG-026 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4569

Sample ID	Analyte	% Limits	% Recovery
PFL0924-45	Fluoride	70 - 130	##[1]

Quality Control PFL0924

METALS-020 | Acid Extractable Metals (Solid adhoc) | Batch BFL4568

Analyte	Units	PQL	Blank	DUP1 PFL0924-01 Samp QC RPD %	DUP2 PFL0924-23 Samp QC RPD %	LCS %	Spike % PFL0924-06
Boron	mg/kg	10	<10	<10 <10 [NA]	<10 <10 [NA]	104	94.6
Mercury	mg/kg	0.10	<0.10	<0.10 <0.10 [NA]	<0.10 <0.10 [NA]	122	122

Analyte	Units	PQL	Blank	DUP3 PFL0924-01 Samp QC RPD %	DUP4 PFL0924-23 Samp QC RPD %	LCS %	
Boron	mg/kg	10		<10 <10 [NA]	<10 <10 [NA]	[NA]	
Mercury	mg/kg	0.1		<0.10 <0.10 [NA]	<0.10 <0.10 [NA]	[NA]	

METALS-020 | Acid Extractable Metals (Solid adhoc) | Batch BFL4585

Analyte	Units	PQL	Blank	DUP1 PFL0924-AT Samp QC RPD %	DUP2 PFL0924-BO Samp QC RPD %	LCS %	Spike % PFL0924-AX
Boron	mg/kg	10	<10	<10 <10 [NA]	<10 <10 [NA]	96.5	96.6
Mercury	mg/kg	0.10	<0.10	<0.10 <0.10 [NA]	<0.10 <0.10 [NA]	112	110

Analyte	Units	PQL	Blank	DUP3 PFL0924-AT Samp QC RPD %	DUP4 PFL0924-BO Samp QC RPD %	LCS %	
Boron	mg/kg	10		<10 <10 [NA]	<10 <10 [NA]	[NA]	
Mercury	mg/kg	0.1		<0.10 <0.10 [NA]	<0.10 <0.10 [NA]	[NA]	

METALS-020 | Acid Extractable Metals (Solid adhoc) | Batch BFL4586

Analyte	Units	PQL	Blank	DUP1 PFL0924-CH Samp QC RPD %	DUP2 PFL0924-CH Samp QC RPD %	LCS %	Spike % PFL0924-CK
Boron	mg/kg	10	<10	<10 <10 [NA]	<10 <10 [NA]	105	97.8
Mercury	mg/kg	0.10	<0.10	<0.10 <0.10 [NA]	<0.10 <0.10 [NA]	118	114

METALS-020 | Acid Extractable Metals (Solid adhoc) | Batch BFL4587

Analyte	Units	PQL	Blank	DUP1 PFL0924-43 Samp QC RPD %	DUP2 PFL0924-58 Samp QC RPD %	LCS %	Spike % PFL0924-45
Boron	mg/kg	10	<10	<10 <10 [NA]	<10 <10 [NA]	97.5	92.3
Mercury	mg/kg	0.1		<0.10 <0.10 [NA]	<0.10 <0.10 [NA]	[NA]	119

Analyte	Units	PQL	Blank	DUP3 PFL0924-43 Samp QC RPD %	DUP4 PFL0924-58 Samp QC RPD %	LCS %	
Boron	mg/kg	10		<10 <10 [NA]	<10 <10 [NA]	[NA]	
Mercury	mg/kg	0.1		<0.10 <0.10 [NA]	<0.10 <0.10 [NA]	122	

METALS-020 | Acid Extractable Metals (Solid adhoc) | Batch BFL4588

Analyte	Units	PQL	Blank	DUP1 PFL0924-79 Samp QC RPD %	DUP2 PFL0924-98 Samp QC RPD %	LCS %	Spike % PFL0924-80
Boron	mg/kg	10	<10	<10 <10 [NA]	<10 <10 [NA]	105	105
Mercury	mg/kg	0.10	<0.10	<0.10 <0.10 [NA]	<0.10 <0.10 [NA]	93.6	98.8

Analyte	Units	PQL	Blank	DUP3 PFL0924-79 Samp QC RPD %	DUP4 PFL0924-98 Samp QC RPD %	LCS %	
Boron	mg/kg	10		<10 <10 [NA]	<10 <10 [NA]	[NA]	
Mercury	mg/kg	0.1		<0.10 <0.10 [NA]	<0.10 <0.10 [NA]	[NA]	

INORG-137 | Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc) | Batch BFL3534

Analyte	Units	PQL	Blank	DUP1 PFL0924-01 Samp QC RPD %	DUP2 PFL0924-11 Samp QC RPD %	LCS %	
Total Sulfur	%	0.010	<0.010	0.0980 0.103 4.98	<0.010 <0.010 [NA]	100	

Quality Control PFL0924

INORG-137 | Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc) | Batch BFL3535

Analyte	Units	PQL	Blank	DUP1 PFL0924-21 Samp QC RPD %	DUP2 PFL0924-31 Samp QC RPD %	LCS %
Total Sulfur	%	0.010	<0.010	0.240 0.235 2.11	0.0370 0.0350 [NA]	102

INORG-137 | Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc) | Batch BFL3536

Analyte	Units	PQL	Blank	DUP1 PFL0924-42 Samp QC RPD %	DUP2 PFL0924-52 Samp QC RPD %	LCS %
Total Sulfur	%	0.010	<0.010	0.0710 0.0490 36.7	0.133 0.137 2.96	103

INORG-137 | Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc) | Batch BFL3537

Analyte	Units	PQL	Blank	DUP1 PFL0924-62 Samp QC RPD %	DUP2 PFL0924-72 Samp QC RPD %	LCS %
Total Sulfur	%	0.010	<0.010	0.0630 0.0680 7.63	0.411 0.421 2.40	110

INORG-137 | Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc) | Batch BFL3538

Analyte	Units	PQL	Blank	DUP1 PFL0924-82 Samp QC RPD %	DUP2 PFL0924-92 Samp QC RPD %	LCS %
Total Sulfur	%	0.010	<0.010	<0.010 <0.010 [NA]	<0.010 0.0100 [NA]	105

INORG-137 | Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc) | Batch BFL3539

Analyte	Units	PQL	Blank	DUP1 PFL0924-AC Samp QC RPD %	DUP2 PFL0924-AM Samp QC RPD %	LCS %
Total Sulfur	%	0.010	<0.010	0.417 0.390 6.69	<0.010 <0.010 [NA]	101

INORG-137 | Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc) | Batch BFL3540

Analyte	Units	PQL	Blank	DUP1 PFL0924-AW Samp QC RPD %	DUP2 PFL0924-BG Samp QC RPD %	LCS %
Total Sulfur	%	0.010	<0.010	0.362 0.358 1.11	0.0660 0.0690 4.44	105

INORG-137 | Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc) | Batch BFL3541

Analyte	Units	PQL	Blank	DUP1 PFL0924-BQ Samp QC RPD %	DUP2 PFL0924-CA Samp QC RPD %	LCS %
Total Sulfur	%	0.010	<0.010	0.0780 0.0710 9.40	<0.010 <0.010 [NA]	108

INORG-137 | Inorganics - Carbon, Nitrogen and Sulfur Species (Solid adhoc) | Batch BFL3542

Analyte	Units	PQL	Blank	DUP1 PFL0924-CK Samp QC RPD %	DUP2 PFL0924-CR Samp QC RPD %	LCS %
Total Sulfur	%	0.010	<0.010	<0.010 <0.010 [NA]	0.459 0.458 0.218	106

INORG-026 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4569

Analyte	Units	PQL	Blank	DUP1 PFL0924-43 Samp QC RPD %	DUP2 PFL0924-58 Samp QC RPD %	LCS %	Spike % PFL0924-45
Fluoride	mg/kg	0.50	<0.50	2.96 3.06 3.49	2.99 2.77 7.64	109	##[1]

Quality Control PFL0924

INORG-026 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4570

Analyte	Units	PQL	Blank	DUP1 PFL0924-79 Samp QC RPD %	DUP2 PFL0924-98 Samp QC RPD %	LCS %	Spike % PFL0924-80
Fluoride	mg/kg	0.50	<0.50	4.98 4.86 2.24	7.40 7.50 1.48	107	103

INORG-026 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4571

Analyte	Units	PQL	Blank	DUP1 PFL0924-AX Samp QC RPD %	DUP2 PFL0924-BO Samp QC RPD %	LCS %	Spike % PFL0924-AS
Fluoride	mg/kg	0.50	<0.50	6.84 7.07 3.31	<0.50 <0.50 [NA]	96.6	96.2

INORG-026 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4572

Analyte	Units	PQL	Blank	DUP1 PFL0924-CH Samp QC RPD %	LCS %	Spike % PFL0924-CK
Fluoride	mg/kg	0.50	<0.50	2.34 2.36 [NA]	102	95.9

INORG-081 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4573

Analyte	Units	PQL	Blank	DUP1 PFL0924-01 Samp QC RPD %	DUP2 PFL0924-23 Samp QC RPD %	LCS %	Spike % PFL0924-06
Chloride	mg/kg	10	<10	138 134 2.47	130 130 0.368	104	122

INORG-081 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4574

Analyte	Units	PQL	Blank	DUP1 PFL0924-43 Samp QC RPD %	DUP2 PFL0924-58 Samp QC RPD %	LCS %	Spike % PFL0924-45
Chloride	mg/kg	10	<10	70.5 71.5 1.43	139 140 0.547	104	113

INORG-081 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4575

Analyte	Units	PQL	Blank	DUP1 PFL0924-79 Samp QC RPD %	DUP2 PFL0924-98 Samp QC RPD %	LCS %	Spike % PFL0924-80
Chloride	mg/kg	10	<10	29.2 42.3 [NA] [2]	355 357 0.389	101	114

INORG-081 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4576

Analyte	Units	PQL	Blank	DUP1 PFL0924-AT Samp QC RPD %	DUP2 PFL0924-BO Samp QC RPD %	LCS %	Spike % PFL0924-AX
Chloride	mg/kg	10	<10	101 112 10.1	1070 1070 0.0847	101	106

INORG-081 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4577

Analyte	Units	PQL	Blank	DUP1 PFL0924-CH Samp QC RPD %	LCS %	Spike % PFL0924-CK
Chloride	mg/kg	10	<10	84.4 89.6 5.92	98.4	110

INORG-026 | Inorganics - General Chemical Parameters (Solid adhoc) | Batch BFL4579

Analyte	Units	PQL	Blank	DUP1 PFL0924-01 Samp QC RPD %	DUP2 PFL0924-23 Samp QC RPD %	LCS %	Spike % PFL0924-06
Fluoride	mg/kg	0.50	<0.50	3.00 3.17 5.34	0.795 0.750 [NA]	115	115

INORG-001_1:2 | Inorganics (1:2 soil:water) (Solid adhoc) | Batch BFL3543

Analyte	Units	PQL	Blank	DUP1 PFL0924-01 Samp QC RPD %	DUP2 PFL0924-11 Samp QC RPD %	LCS %
pH	pH units		0.0	9.0 9.1 0.442	9.1 9.0 0.332	100
Electrical Conductivity	µS/cm	1.0	<1.0	441 434 1.60	341 343 0.585	99.7

Quality Control PFL0924

INORG-001_1:2 | Inorganics (1:2 soil:water) (Solid adhoc) | Batch BFL3544

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %
				PFL0924-21 Samp QC RPD %	PFL0924-31 Samp QC RPD %	
pH	pH units		0.0	8.8 8.9 0.676	9.0 9.0 0.00	100
Electrical Conductivity	µS/cm	1.0	<1.0	208 204 1.94	262 257 1.93	100

INORG-001_1:2 | Inorganics (1:2 soil:water) (Solid adhoc) | Batch BFL3545

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %
				PFL0924-42 Samp QC RPD %	PFL0924-52 Samp QC RPD %	
pH	pH units		0.0	9.4 9.5 0.318	7.8 7.8 0.515	100
Electrical Conductivity	µS/cm	1.0	<1.0	181 179 1.11	1090 1080 0.739	102

INORG-001_1:2 | Inorganics (1:2 soil:water) (Solid adhoc) | Batch BFL3546

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %
				PFL0924-62 Samp QC RPD %	PFL0924-72 Samp QC RPD %	
pH	pH units		0.0	9.6 9.6 0.209	9.4 9.4 0.00	100
Electrical Conductivity	µS/cm	1.0	<1.0	307 298 2.98	210 211 0.475	101

INORG-001_1:2 | Inorganics (1:2 soil:water) (Solid adhoc) | Batch BFL3547

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %
				PFL0924-82 Samp QC RPD %	PFL0924-92 Samp QC RPD %	
pH	pH units		0.0	9.5 9.5 0.211	9.7 9.8 0.411	100
Electrical Conductivity	µS/cm	1.0	<1.0	453 421 7.32	459 463 0.868	102

INORG-001_1:2 | Inorganics (1:2 soil:water) (Solid adhoc) | Batch BFL3548

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %
				PFL0924-AC Samp QC RPD %	PFL0924-AM Samp QC RPD %	
pH	pH units		0.0	9.4 9.5 0.847	8.4 8.4 0.239	100
Electrical Conductivity	µS/cm	1.0	<1.0	258 230 11.5	569 511 10.7	104

INORG-001_1:2 | Inorganics (1:2 soil:water) (Solid adhoc) | Batch BFL3549

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %
				PFL0924-AW Samp QC RPD %	PFL0924-BG Samp QC RPD %	
pH	pH units		0.0	8.2 8.2 0.488	9.8 9.8 0.00	101
Electrical Conductivity	µS/cm	1.0	<1.0	850 839 1.30	511 514 0.585	100

INORG-001_1:2 | Inorganics (1:2 soil:water) (Solid adhoc) | Batch BFL3550

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %
				PFL0924-BQ Samp QC RPD %	PFL0924-CA Samp QC RPD %	
pH	pH units		0.0	5.9 5.8 0.681	7.0 6.8 2.89	100
Electrical Conductivity	µS/cm	1.0	<1.0	772 795 2.94	583 476 20.2	100

INORG-001_1:2 | Inorganics (1:2 soil:water) (Solid adhoc) | Batch BFL3551

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %
				PFL0924-CK Samp QC RPD %	PFL0924-CR Samp QC RPD %	
pH	pH units		0.0	8.0 8.1 1.37	9.1 9.0 0.331	101
Electrical Conductivity	µS/cm	1.0	<1.0	323 322 0.310	300 299 0.334	99.7

Quality Control PFL0924

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3516

Analyte	Units	PQL	Blank	DUP1 PFL0924-01 Samp QC RPD %	DUP2 PFL0924-11 Samp QC RPD %	LCS %
ANC H2SO4	kg H2SO4/t	0.50	<0.50	20.1 20.2 0.594	14.4 14.5 0.827	101
Fizz Rating	-		1.00	1.00 1.00 0.00	0.00 0.00 [NA]	[NA]
ANC CaCO3	% CaCO3	0.010	<0.010	2.05 2.06 0.594	1.47 1.48 0.827	101

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3517

Analyte	Units	PQL	Blank	DUP1 PFL0924-21 Samp QC RPD %	DUP2 PFL0924-31 Samp QC RPD %	LCS %
ANC H2SO4	kg H2SO4/t	0.50	<0.50	21.0 23.8 12.4	18.0 18.0 0.530	98.2
Fizz Rating	-		1.00	1.00 1.00 0.00	1.00 1.00 0.00	[NA]
ANC CaCO3	% CaCO3	0.010	<0.010	2.14 2.42 12.4	1.83 1.84 0.530	98.2

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3518

Analyte	Units	PQL	Blank	DUP1 PFL0924-42 Samp QC RPD %	DUP2 PFL0924-52 Samp QC RPD %	LCS %
ANC H2SO4	kg H2SO4/t	0.50	<0.50	30.0 29.5 1.64	14.8 15.1 1.76	96.8
Fizz Rating	-		1.00	2.00 2.00 0.00	1.00 1.00 0.00	[NA]
ANC CaCO3	% CaCO3	0.010	<0.010	3.06 3.01 1.64	1.51 1.54 1.76	96.8

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3519

Analyte	Units	PQL	Blank	DUP1 PFL0924-62 Samp QC RPD %	DUP2 PFL0924-72 Samp QC RPD %	LCS %
ANC H2SO4	kg H2SO4/t	0.50	<0.50	31.6 31.8 0.611	21.5 21.6 0.562	101
Fizz Rating	-		1.00	1.00 1.00 0.00	1.00 1.00 0.00	[NA]
ANC CaCO3	% CaCO3	0.010	<0.010	3.22 3.24 0.611	2.19 2.20 0.562	101

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3520

Analyte	Units	PQL	Blank	DUP1 PFL0924-82 Samp QC RPD %	DUP2 PFL0924-92 Samp QC RPD %	LCS %
ANC H2SO4	kg H2SO4/t	0.50	<0.50	12.3 12.2 1.58	12.8 13.0 1.13	94.9
Fizz Rating	-		1.00	1.00 1.00 0.00	1.00 1.00 0.00	[NA]
ANC CaCO3	% CaCO3	0.010	<0.010	1.26 1.24 1.58	1.31 1.32 1.13	94.9

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3521

Analyte	Units	PQL	Blank	DUP1 PFL0924-AC Samp QC RPD %	DUP2 PFL0924-AM Samp QC RPD %	LCS %
ANC H2SO4	kg H2SO4/t	0.50	<0.50	23.7 23.7 0.102	5.20 5.37 3.21	100
Fizz Rating	-		0.00	1.00 1.00 0.00	0.00 0.00 [NA]	[NA]
ANC CaCO3	% CaCO3	0.010	<0.010	2.42 2.42 0.102	0.530 0.548 3.21	100

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3522

Analyte	Units	PQL	Blank	DUP1 PFL0924-AW Samp QC RPD %	DUP2 PFL0924-BG Samp QC RPD %	LCS %
ANC H2SO4	kg H2SO4/t	0.50	<0.50	15.8 14.3 9.83	28.9 28.8 0.257	98.9
Fizz Rating	-		1.00	1.00 1.00 0.00	2.00 2.00 0.00	[NA]
ANC CaCO3	% CaCO3	0.010	<0.010	1.61 1.46 9.83	2.95 2.94 0.257	98.9

Quality Control PFL0924

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3523

Analyte	Units	PQL	Blank	DUP1 PFL0924-BQ Samp QC RPD %	DUP2 PFL0924-CA Samp QC RPD %	LCS %
ANC H2SO4	kg H2SO4/t	0.50	<0.50	2.31 2.36 [NA]	3.05 2.95 3.28	108
Fizz Rating	-		0.00	0.00 0.00 [NA]	0.00 0.00 [NA]	[NA]
ANC CaCO3	% CaCO3	0.010	<0.010	0.236 0.241 2.11	0.311 0.301 3.28	108

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3524

Analyte	Units	PQL	Blank	DUP1 PFL0924-CK Samp QC RPD %	DUP2 PFL0924-CR Samp QC RPD %	LCS %
ANC H2SO4	kg H2SO4/t	0.50	<0.50	9.37 9.25 1.32	12.6 12.4 1.78	95.6
Fizz Rating	-		0.00	0.00 0.00 [NA]	1.00 1.00 0.00	[NA]
ANC CaCO3	% CaCO3	0.010	<0.010	0.956 0.944 1.32	1.29 1.27 1.78	95.6

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3525

Analyte	Units	PQL	Blank	DUP1 PFL0924-01 Samp QC RPD %	DUP2 PFL0924-11 Samp QC RPD %	LCS %
NAG pH	pH units			8.49 8.59 1.17	7.62 7.46 2.12	96.6
NAG pH4.5	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	<0.50 <0.50 [NA]	115
NAG pH7.0	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	<0.50 <0.50 [NA]	98.7

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3526

Analyte	Units	PQL	Blank	DUP1 PFL0924-21 Samp QC RPD %	DUP2 PFL0924-31 Samp QC RPD %	LCS %
NAG pH	pH units			5.39 5.44 0.923	7.63 7.65 0.262	99.4
NAG pH4.5	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	<0.50 <0.50 [NA]	117
NAG pH7.0	kg H2SO4/t	0.5		0.947 0.908 [NA]	<0.50 <0.50 [NA]	101

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3527

Analyte	Units	PQL	Blank	DUP1 PFL0924-42 Samp QC RPD %	DUP2 PFL0924-52 Samp QC RPD %	LCS %
NAG pH	pH units			8.72 8.76 0.458	6.34 6.35 0.158	96.3
NAG pH4.5	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	<0.50 <0.50 [NA]	105
NAG pH7.0	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	0.629 0.591 [NA]	102

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3528

Analyte	Units	PQL	Blank	DUP1 PFL0924-62 Samp QC RPD %	DUP2 PFL0924-72 Samp QC RPD %	LCS %
NAG pH	pH units			7.62 7.59 0.394	3.69 3.71 0.541	99.7
NAG pH4.5	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	1.88 1.87 [NA]	108
NAG pH7.0	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	4.67 4.73 1.22	93.0

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3529

Analyte	Units	PQL	Blank	DUP1 PFL0924-82 Samp QC RPD %	DUP2 PFL0924-92 Samp QC RPD %	LCS %
NAG pH	pH units			7.15 7.13 0.280	7.16 7.19 0.418	98.4
NAG pH4.5	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	<0.50 <0.50 [NA]	112
NAG pH7.0	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	<0.50 <0.50 [NA]	95.0

Quality Control PFL0924

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3530

Analyte	Units	PQL	Blank	DUP1 PFL0924-AC Samp QC RPD %	DUP2 PFL0924-AM Samp QC RPD %	LCS %
NAG pH	pH units			4.58 4.57 0.219	8.09 8.19 1.23	97.5
NAG pH4.5	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	<0.50 <0.50 [NA]	102
NAG pH7.0	kg H2SO4/t	0.5		1.29 1.19 [NA]	<0.50 <0.50 [NA]	86.9

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3531

Analyte	Units	PQL	Blank	DUP1 PFL0924-AW Samp QC RPD %	DUP2 PFL0924-BG Samp QC RPD %	LCS %
NAG pH	pH units			3.50 3.52 0.570	9.48 9.36 1.27	98.8
NAG pH4.5	kg H2SO4/t	0.5		1.78 1.68 [NA]	<0.50 <0.50 [NA]	97.3
NAG pH7.0	kg H2SO4/t	0.5		3.96 3.86 2.53	<0.50 <0.50 [NA]	92.5

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3532

Analyte	Units	PQL	Blank	DUP1 PFL0924-BQ Samp QC RPD %	DUP2 PFL0924-CA Samp QC RPD %	LCS %
NAG pH	pH units			6.15 6.17 0.325	6.49 6.52 0.461	98.8
NAG pH4.5	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	<0.50 <0.50 [NA]	97.0
NAG pH7.0	kg H2SO4/t	0.5		1.54 1.58 [NA]	1.09 1.14 [NA]	94.1

AMD-001 | Acid Mine Drainage (Solid adhoc) | Batch BFL3533

Analyte	Units	PQL	Blank	DUP1 PFL0924-CK Samp QC RPD %	DUP2 PFL0924-CR Samp QC RPD %	LCS %
NAG pH	pH units			7.55 7.69 1.84	3.68 3.71 0.812	98.8
NAG pH4.5	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	2.07 1.97 [NA]	113
NAG pH7.0	kg H2SO4/t	0.5		<0.50 <0.50 [NA]	7.56 7.60 0.521	96.8

QC Comments

Identifier	Description
[1]	Spike recovery is outside routine acceptance criteria (70-130%), this may be due to suspected non-homogeneity and/or matrix interference effects. However, an acceptable recovery was achieved for the LCS.
[2]	Duplicate %RPD may be flagged as an outlier to routine laboratory acceptance, however, where one or both results are <10*PQL, the RPD acceptance criteria increases exponentially.

Material Test Report

Report Number: ARC25660-1
Issue Number: 1
Date Issued: 24/06/2025
Client: MPL Laboratories
16/18 Hayden Court, Myaree WA 6154
Project Number: ARC25660
Project Name: PFL0924
Project Location: Not Specified
Work Request: 2960
Sample Number: S2960A
Date Sampled: 12/06/2025
Dates Tested: 12/06/2025 - 18/06/2025
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: In accordance with the test method
Remarks: No sample date provided: Received 12/06/2025.
Site Selection: Selected by Client
Sample Location: PFL0924-10



LABORATORY SERVICES
ARC Base Laboratory
8 Hyne Road South Guildford WA 6055
Phone: 0474 652 040
Email: beau@arctestng.com.au



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A handwritten signature in black ink that reads 'Beau Griffiths'.

Approved Signatory: Beau Griffiths
Laboratory Manager
NATA Accredited Laboratory Number: 21169

Determination of Slake Durability Index of Rock (AS 4133.3.4)	
Slake Durability (first cycle) (%)	99.6
Slake Durability (second cycle) (%)	99.5
Slaking Fluid	Tap Water
Slaking Fluid Temperature (°C)	21
Appearance Of Fragments Retained in the Drum	Retained specimens remain virtually unchanged
Appearance Of Material Passing Through the Drum	Slight Silty Appearance

Material Test Report

Report Number: ARC25660-1
Issue Number: 1
Date Issued: 24/06/2025
Client: MPL Laboratories
16/18 Hayden Court, Myaree WA 6154
Project Number: ARC25660
Project Name: PFL0924
Project Location: Not Specified
Work Request: 2960
Sample Number: S2960B
Date Sampled: 12/06/2025
Dates Tested: 12/06/2025 - 18/06/2025
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: In accordance with the test method
Remarks: No sample date provided: Received 12/06/2025.
Site Selection: Selected by Client
Sample Location: PFL0924-24



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Beau Griffiths

Approved Signatory: Beau Griffiths
Laboratory Manager
NATA Accredited Laboratory Number: 21169

Determination of Slake Durability Index of Rock (AS 4133.3.4)	
Slake Durability (first cycle) (%)	99.9
Slake Durability (second cycle) (%)	99.8
Slaking Fluid	Tap Water
Slaking Fluid Temperature (°C)	21
Appearance Of Fragments Retained in the Drum	Retained specimens remain virtually unchanged
Appearance Of Material Passing Through the Drum	Slight Silt Appearance

Material Test Report

Report Number: ARC25660-1
Issue Number: 1
Date Issued: 24/06/2025
Client: MPL Laboratories
16/18 Hayden Court, Myaree WA 6154
Project Number: ARC25660
Project Name: PFL0924
Project Location: Not Specified
Work Request: 2960
Sample Number: S2960C
Date Sampled: 12/06/2025
Dates Tested: 12/06/2025 - 19/06/2025
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: In accordance with the test method
Remarks: No sample date provided: Received 12/06/2025.
Site Selection: Selected by Client
Sample Location: PFL0924-41



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Beau Griffiths

Approved Signatory: Beau Griffiths
Laboratory Manager
NATA Accredited Laboratory Number: 21169

Determination of Slake Durability Index of Rock (AS 4133.3.4)	
Slake Durability (first cycle) (%)	99.2
Slake Durability (second cycle) (%)	99.1
Slaking Fluid	Tap Water
Slaking Fluid Temperature (°C)	21
Appearance Of Fragments Retained in the Drum	Retained specimens remain virtually unchanged
Appearance Of Material Passing Through the Drum	Slight Silt Appearance

Material Test Report

Report Number: ARC25660-1
Issue Number: 1
Date Issued: 24/06/2025
Client: MPL Laboratories
16/18 Hayden Court, Myaree WA 6154
Project Number: ARC25660
Project Name: PFL0924
Project Location: Not Specified
Work Request: 2960
Sample Number: S2960D
Date Sampled: 12/06/2025
Dates Tested: 12/06/2025 - 19/06/2025
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: In accordance with the test method
Remarks: No sample date provided: Received 12/06/2025.
Site Selection: Selected by Client
Sample Location: PFL0924-45



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Beau Griffiths

Approved Signatory: Beau Griffiths
Laboratory Manager
NATA Accredited Laboratory Number: 21169

Determination of Slake Durability Index of Rock (AS 4133.3.4)	
Slake Durability (first cycle) (%)	
Slake Durability (second cycle) (%)	
Slaking Fluid	Tap Water / Distilled Water / Site Water
Slaking Fluid Temperature (°C)	
Appearance Of Fragments Retained in the Drum	
Appearance Of Material Passing Through the Drum	
Insufficient suitable material to perform testing.	

Material Test Report

Report Number: ARC25660-1
Issue Number: 1
Date Issued: 24/06/2025
Client: MPL Laboratories
16/18 Hayden Court, Myaree WA 6154
Project Number: ARC25660
Project Name: PFL0924
Project Location: Not Specified
Work Request: 2960
Sample Number: S2960E
Date Sampled: 12/06/2025
Dates Tested: 12/06/2025 - 19/06/2025
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: In accordance with the test method
Remarks: No sample date provided: Received 12/06/2025.
Site Selection: Selected by Client
Sample Location: PFL0924-46

Determination of Slake Durability Index of Rock (AS 4133.3.4)	
Slake Durability (first cycle) (%)	100.4
Slake Durability (second cycle) (%)	100.3
Slaking Fluid	Tap Water
Slaking Fluid Temperature (°C)	21
Appearance Of Fragments Retained in the Drum	Retained specimens remain virtually unchanged
Appearance Of Material Passing Through the Drum	Slight Silt Appearance



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A handwritten signature in black ink, appearing to read 'Beau Griffiths'.

Approved Signatory: Beau Griffiths
Laboratory Manager
NATA Accredited Laboratory Number: 21169

Material Test Report

Report Number: ARC25660-1
Issue Number: 1
Date Issued: 24/06/2025
Client: MPL Laboratories
16/18 Hayden Court, Myaree WA 6154
Project Number: ARC25660
Project Name: PFL0924
Project Location: Not Specified
Work Request: 2960
Sample Number: S2960F
Date Sampled: 12/06/2025
Dates Tested: 12/06/2025 - 20/06/2025
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: In accordance with the test method
Remarks: No sample date provided: Received 12/06/2025.
Site Selection: Selected by Client
Sample Location: PFL0924-66

Determination of Slake Durability Index of Rock (AS 4133.3.4)	
Slake Durability (first cycle) (%)	99.8
Slake Durability (second cycle) (%)	99.6
Slaking Fluid	Tap Water
Slaking Fluid Temperature (°C)	21
Appearance Of Fragments Retained in the Drum	Retained specimens remain virtually unchanged
Appearance Of Material Passing Through the Drum	Slight Silt Appearance



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Approved Signatory: Beau Griffiths
Laboratory Manager
NATA Accredited Laboratory Number: 21169

Material Test Report

Report Number: ARC25660-1
Issue Number: 1
Date Issued: 24/06/2025
Client: MPL Laboratories
16/18 Hayden Court, Myaree WA 6154
Project Number: ARC25660
Project Name: PFL0924
Project Location: Not Specified
Work Request: 2960
Sample Number: S2960G
Date Sampled: 12/06/2025
Dates Tested: 12/06/2025 - 20/06/2025
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: In accordance with the test method
Remarks: No sample date provided: Received 12/06/2025.
Site Selection: Selected by Client
Sample Location: PFL0924-80



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Beau Griffiths

Approved Signatory: Beau Griffiths
Laboratory Manager
NATA Accredited Laboratory Number: 21169

Determination of Slake Durability Index of Rock (AS 4133.3.4)	
Slake Durability (first cycle) (%)	99.7
Slake Durability (second cycle) (%)	99.6
Slaking Fluid	Tap Water
Slaking Fluid Temperature (°C)	21
Appearance Of Fragments Retained in the Drum	Retained specimens remain virtually unchanged
Appearance Of Material Passing Through the Drum	Slight Silt Appearance

Material Test Report

Report Number: ARC25660-1
Issue Number: 1
Date Issued: 24/06/2025
Client: MPL Laboratories
16/18 Hayden Court, Myaree WA 6154
Project Number: ARC25660
Project Name: PFL0924
Project Location: Not Specified
Work Request: 2960
Sample Number: S2960H
Date Sampled: 12/06/2025
Dates Tested: 12/06/2025 - 23/06/2025
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: In accordance with the test method
Remarks: No sample date provided: Received 12/06/2025.
Site Selection: Selected by Client
Sample Location: PFL0924-81

Determination of Slake Durability Index of Rock (AS 4133.3.4)	
Slake Durability (first cycle) (%)	99.4
Slake Durability (second cycle) (%)	99.1
Slaking Fluid	Tap Water
Slaking Fluid Temperature (°C)	21
Appearance Of Fragments Retained in the Drum	Retained specimens remain virtually unchanged
Appearance Of Material Passing Through the Drum	Slight silt appearance



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A handwritten signature in black ink, appearing to read 'Beau Griffiths', written over a light blue horizontal line.

Approved Signatory: Beau Griffiths
Laboratory Manager
NATA Accredited Laboratory Number: 21169

Material Test Report

Report Number: ARC25660-1
Issue Number: 1
Date Issued: 24/06/2025
Client: MPL Laboratories
16/18 Hayden Court, Myaree WA 6154
Project Number: ARC25660
Project Name: PFL0924
Project Location: Not Specified
Work Request: 2960
Sample Number: S29601
Date Sampled: 12/06/2025
Dates Tested: 12/06/2025 - 23/06/2025
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: In accordance with the test method
Remarks: No sample date provided: Received 12/06/2025.
Site Selection: Selected by Client
Sample Location: PFL0924-AC



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Beau Griffiths

Approved Signatory: Beau Griffiths
Laboratory Manager
NATA Accredited Laboratory Number: 21169

Determination of Slake Durability Index of Rock (AS 4133.3.4)	
Slake Durability (first cycle) (%)	99.8
Slake Durability (second cycle) (%)	99.7
Slaking Fluid	Tap Water
Slaking Fluid Temperature (°C)	21
Appearance Of Fragments Retained in the Drum	Retained specimens remain virtually unchanged
Appearance Of Material Passing Through the Drum	Slight Silt Appearance

Material Test Report

Report Number: ARC25660-1
Issue Number: 2 - This version supersedes all previous issues
Reissue Reason: S2960J Complete
Date Issued: 24/06/2025
Client: MPL Laboratories
16/18 Hayden Court, Myaree WA 6154
Project Number: ARC25660
Project Name: PFL0924
Project Location: Not Specified
Work Request: 2960
Sample Number: S2960J
Date Sampled: 12/06/2025
Dates Tested: 12/06/2025 - 24/06/2025
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: In accordance with the test method
Remarks: No sample date provided: Received 12/06/2025.
Site Selection: Selected by Client
Sample Location: PFL0924-AL



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A handwritten signature in black ink, reading 'Beau Griffiths'.

Approved Signatory: Beau Griffiths

Laboratory Manager

NATA Accredited Laboratory Number: 21169

Determination of Slake Durability Index of Rock (AS 4133.3.4)	
Slake Durability (first cycle) (%)	99.8
Slake Durability (second cycle) (%)	99.7
Slaking Fluid	Tap Water
Slaking Fluid Temperature (°C)	21
Appearance Of Fragments Retained in the Drum	Retained specimens remain virtually unchanged
Appearance Of Material Passing Through the Drum	Slight Silt Appearance



SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10525_1_ECN
Project:	PFL0924	Sample No.	WG25.10525
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-06	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Rock

Water Used:

Distilled

**EMERSON CLASS
NUMBER**

8

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 16/June/2025



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SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10526_1_ECN
Project:	PFL0924	Sample No.	WG25.10526
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-08	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Silty Sand with Gravel

Water Used:

Distilled

**EMERSON CLASS
NUMBER**

5

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 16/June/2025



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TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10528_1_ECN
Project:	PFL0924	Sample No.	WG25.10528
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-11	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Rock

Water Used:

Distilled

EMERSON CLASS
NUMBER

8

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 16/June/2025



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TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10529_1_ECN
Project:	PFL0924	Sample No.	WG25.10529
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-12	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Crushed Rock

Water Used:

Distilled

EMERSON CLASS
NUMBER

8

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 16/June/2025



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TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10534_1_ECN
Project:	PFL0924	Sample No.	WG25.10534
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-50	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Silty Sand with Gravel

Water Used:

Distilled

**EMERSON CLASS
NUMBER**

5

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 16/June/2025



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TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10536_1_ECN
Project:	PFL0924	Sample No.	WG25.10536
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-69	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Silty Sand with Gravel

Water Used:

Distilled

**EMERSON CLASS
NUMBER**

5

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 16/June/2025



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SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10537_1_ECN
Project:	PFL0924	Sample No.	WG25.10537
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-73	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Silty Sand with Gravel

Water Used:

Distilled

EMERSON CLASS
NUMBER

6

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 16/June/2025



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SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10538_1_ECN
Project:	PFL0924	Sample No.	WG25.10538
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-74	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Silty Sand with Gravel

Water Used:

Distilled

**EMERSON CLASS
NUMBER**

6

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 16/June/2025



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SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10539_1_ECN
Project:	PFL0924	Sample No.	WG25.10539
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-77	Date Tested:	12/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Silty Sand

Water Used:

Distilled

**EMERSON CLASS
NUMBER**

5

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 12/June/2025



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SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10542_1_ECN
Project:	PFL0924	Sample No.	WG25.10542
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-85	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Sandy Clay with Gravel

Water Used:

Distilled

**EMERSON CLASS
NUMBER**

2

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 17/June/2025



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SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10543_1_ECN
Project:	PFL0924	Sample No.	WG25.10543
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-93	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Gravel

Water Used:

Distilled

**EMERSON CLASS
NUMBER**

5

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 17/June/2025



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SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10544_1_ECN
Project:	PFL0924	Sample No.	WG25.10544
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-94	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Sandy Clay with Gravel

Water Used:

Distilled

**EMERSON CLASS
NUMBER**

2

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 17/June/2025



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SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10546_1_ECN
Project:	PFL0924	Sample No.	WG25.10546
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-AH	Date Tested:	12/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Sandy Clay

Water Used:

Distilled

EMERSON CLASS
NUMBER

2

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 12/June/2025



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SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.8.1

Client:	MPL Laboratories	Ticket No.	S17721
Client Address:	16-18 Hayden Crt, Myaree WA 6154	Report No.	WG25.10547_1_ECN
Project:	PFL0924	Sample No.	WG25.10547
Location:	Not Specified	Date Sampled:	Not Specified
Sample Identification:	PFL0924-AK	Date Tested:	16/06/2025

TEST RESULTS - Emerson Class Number

Sampling Method:

Sampled by Client, Tested as Received

Source of Material:

Not Specified

Soil Description:

Sandy Silt with Gravel

Water Used:

Distilled

**EMERSON CLASS
NUMBER**

5

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 17/June/2025



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