McPhillamys Gold Project: Geochemical Characterisation

Report Prepared for

Regis Resources Limited



Report Prepared by

SRK Consulting (Australasia) Pty Ltd

REG017

July 2019

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July 2019

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Executive Summary

The overall aim of this study was to characterise the geochemical properties of materials which will be mined, dispatched to tailings, waste rock or ore storage facilities, or exposed in open pit faces during the implementation of the McPhillamys Project. The assessment focused particularly on those geochemical characteristics which (i) have the potential to exert a detrimental environmental influence or (ii) could influence the success of mine rehabilitation. A primary objective of this study was to clarify the zonation of non-acid forming (NAF) and potentially acid forming (PAF) materials within the potential pit shell, to facilitate waste rock management planning.

The geochemical information presented in this report will be used by Regis as part of the mining approvals process for the McPhillamys Project. The data will be of use during mine development planning and will also inform rehabilitation and closure planning and associated regulatory reporting requirements.

A total of 197 samples from 87 drill holes were selected for static geochemical testing, eight of which were ore grade. Samples were selected from drill cores and reverse circulation (RC) chips, available from drilling programs at various times between 2013 and 2018. Additionally, 3,380 samples were submitted for multi-element analysis, each being a composite of a 4 m section of drilled material.

Results from acid-base accounting (ABA) and net acid generation (NAG) testwork has highlighted the large variability in acid generating and acid neutralising properties of the materials to be mined at McPhillamys. A large range of total sulfur concentrations (<0.01 to 11 wt% S) was measured, with several lithologies having samples with >1 wt% S. Tailings total sulfur concentrations were in the range 1.8 – 7.2 wt% S, with minimum and maximum concentrations in oxide and fresh samples respectively.

Total sulfur concentrations less than 0.3% were more common between the periphery of the central mineralised zone, which runs north-south through the proposed pit, and the outer edges of the pit. Higher sulfur concentrations in the mineralised zone is likely to be largely indicative of the co-incident relationship between Au mineralisation and sulfide occurrence. Sulfur speciation testing indicated that most of the sulfur is present in sulfide form.

The acid neutralisation capacity (ANC) results also demonstrated a large range of values, from <0.5 kg H_2SO_4/t to 979 kg H_2SO_4/t in waste rock and 0.6–76.3 kg H_2SO_4/t in ore. The ANC range in tailings samples was 4.2–80 kg H_2SO_4/t.

Geochemical testwork results were used to clarify the spatial distribution of NAF/ PAF materials, and resulted in delineation of the central PAF zone, which contains 42% of the waste rock to be mined. Definition of the PAF zone has facilitated waste scheduling and waste emplacement planning to ensure that PAF classified waste rock is appropriately managed, i.e. encapsulated within NAF material in the waste emplacement facility.

In terms of global abundance, the trace elements that were identified as being present at concentrations considered to be ‘enriched’ in one or more waste rock samples were Ag, As, Bi, Cd, Co, Cu, Hg, Mn, Mo, Pb, S, Sb, Se and Zn. Ore samples were enriched in As, Cu, S and Se and tailings samples were enriched in Ag, As, Cd, Pb, S and Se.

Static leach testing using deionised water indicated few samples with elevated concentrations in contact water; however, there were samples which leached elevated concentrations of Al, Cd, Co, Ni, Se and Zn. When leaching under mildly acidic conditions, there was enhanced leaching of metals such as Cd, Co, Cu, Ni and Zn. Kinetic testing was completed on seven waste rock samples covering a range of sulfur contents and acid rock drainage classifications. The range of leachate pH represented was acidic to neutral (pH 4 to 8) and in general leachate conditions were consistent with sample classifications from static testing.

The scope of work did not include detailed facility water quality modelling; however, the geochemical characterisation results are adequate to inform material and water handling decisions for the project. On cessation of mining activities in the McPhillamys pit, a lake is predicted to form, reaching a maximum depth of around 415 m within approximately 500 years. It is likely that the pit lake will have elevated concentrations (in relation to livestock drinking water guidelines) of SO_4, and testing has also indicated the potential for elevated concentrations of As, Co, Ni, Pb and Zn. In the long term, the pit is expected to be a flow-through system with net seepage to the surrounding groundwater (the modelled water level will be above the pre-mining water table for around 60% of the time). Depending on the specifics of pit water management and timing of exposure of different wall units, there is also the potential for acidic water with elevated analyte concentrations to collect in pit sumps during operations.

The liquid fraction of tailings, which may be indicative of initial and ongoing operational seepage from the tailings storage facility (TSF), contained elevated concentrations of SO_4, F and Se. Localised generation of acid and metalliferous drainage (AMD) is anticipated in the TSF, where unsaturated conditions occur in beach areas and this will generate seepage which will either collect in the decant or seep into the TSF. Acidic seepage into the TSF during operations may be neutralised by ANC within the tailings. Results for samples which were analysed after being through cyanide detoxification highlighted the value of this process which is planned for use at McPhillamys. Non-detoxed samples had higher concentrations of cyanide and several other analytes, such as Cu, which complexes with cyanide.

Waste rock classified as PAF is expected to be associated with contact water which would be considered as AMD and this water should be managed, as is planned. It would also be advisable to manage contact water associated with the run of mine (ROM) ore pad, as ore in general is likely to be PAF with the potential to generate AMD. Any AMD associated with PAF waste rock or ore may be expected to be acidic and contain concentrations of analytes such as As, Co, Ni, Pb and Zn above livestock drinking water guideline concentrations.

Table of Contents

Executive Summary ii
Disclaimer vii
1 Introduction 1
1.1 Program objectives 1
1.2 Purpose of the Report 2
1.3 Statement of SRK independence 2
2 Project Overview 3
2.1 Project location and summary 3
2.2 Geology 5
3 Methodology 6
3.1 Sample numbers and locations 6
3.1.1 Waste rock and ore 6
3.1.2 Tailings 7
3.2 Sample analysis 8
3.2.1 Static testwork 8
3.2.2 Kinetic testwork 9
4 Results and Discussion 11
4.1 Paste pH and EC 11
4.2 Acid-base accounting and net acid generation 12
4.2.1 Acid generation potential 13
4.2.2 Acid neutralisation capacity 18
4.2.3 Net acid generation 20
4.3 Material classification 21
4.3.1 AMIRA classification 22
4.3.2 Neutralisation potential ratio (NPR) 24
4.3.3 Material classification distribution 27
4.4 Multi-element composition 30
4.5 Shake flask extraction (SFE) results 33
4.5.1 Mild acid shake flask extractions 36
4.6 Tailings liquid fraction 40
4.7 Sodicity and cation exchange capacity (CEC) 41
4.8 Kinetic testwork 42
4.8.1 Sample properties 42
4.8.2 Kinetic test program results 44
5 Facility Area Geochemistry 48
5.1 Open pit 48
5.2 TSF 51

5.3 Waste rock and ore 52
6 Summary and Conclusions 53
7 References 55

List of Tables

Table 3-1: Geochemical sample numbers from each lithology and regolith category 6
Table 4-1: Median values from ABA and NAG testwork for waste rock and ore samples 13
Table 4-2: ABA and NAG testwork results for tailings samples 13
Table 4-3: Chromium reducible sulfur (CRS) results 17
Table 4-4: Carbonate NP results 18
Table 4-5: ABCC results 19
Table 4-6: AMIRA classification criteria 22
Table 4-7: Summary statistics for selected multi-element analyses of waste rock and ore 30
Table 4-8: Multi-element analyses of tailings samples 31
Table 4-9: Summary statistics for selected multi-element analyses of waste rock composites 32
Table 4-10: Summary statistics for selected multi-element analyses of ore composites 33
Table 4-11: Leach test results for key parameters in waste rock and ore samples 34
Table 4-12: Leach test results for tailings samples 35
Table 4-13: Selected mild acid leachate results for volcaniclastic samples 37
Table 4-14: Multi-element results for liquid fraction of tailings samples 40
Table 4-15: Salinity, CEC and Sodicity Results 41
Table 4-16: Results of mineralogical analysis for the samples – estimated phase concentrations (wt %) 43
Table 4-17: Summary of acid-base accounting and net acid generation data 44
Table 4-18: Summary of kinetic test outcomes 46
Table 5-1: Groundwater quality estimate and proportions for inflow to McPhillamys pit 49
Table 5-2: Surface area of each lithological grouping exposed on final pit wall 51

List of Figures

Figure 2-1: Location of McPhillamys Project 3
Figure 2-2: Proposed McPhillamys Mine Infrastructure 4
Figure 2-3: McPhillamys regional geology and pit location 5
Figure 3-1: Locations of geochemical characterisation samples 7
Figure 4-1: Paste pH results 11
Figure 4-2: Paste EC results 12
Figure 4-3: Total sulfur results 14
Figure 4-4: Histogram of total-S concentrations in SRK waste rock samples 14
Figure 4-5: Histogram of total-S concentrations in McPhillamys waste rock database 15
Figure 4-6: Histogram of total-S concentrations in McPhillamys ore sample database 15

Figure 4-7: Spatial distribution of total sulfur concentrations 16
Figure 4-8: Comparison of total sulfur and sulfide sulfur concentrations 17
Figure 4-9: ABCC titration results 19
Figure 4-10: Relationship between measured ANC and Ca derived ANC 20
Figure 4-11: NAG pH results 21
Figure 4-12: AMIRA classification plot for Lithological groups 23
Figure 4-13: AMIRA classification plot for Regolith groups 24
Figure 4-14: Plot of ANC versus MPA for Lithological groups 25
Figure 4-15: Plot of ANC versus MPA for waste composites 26
Figure 4-16: Plot of ANC versus MPA for ore composites 26
Figure 4-17: Spatial distribution of classifications: SRK samples 27
Figure 4-18: Spatial distribution of classifications: All samples 28
Figure 4-19: Spatial distribution of classifications and PAF 'shell' 29
Figure 4-20: Shake Flask Extraction final pH values 38
Figure 4-21: Dissolved cobalt concentrations in de-ionised water and mild acid leach tests 38
Figure 4-22: Dissolved nickel concentrations in de-ionised water and mild acid leach tests 39
Figure 4-23: Dissolved zinc concentrations in de-ionised water and mild acid leach tests 39
Figure 4-24: pH of leachate from successive leachates (all columns) 47
Figure 4-25: Average sulfate release rate, plotted as a function of sulfide sulfur content 47
Figure 5-1: Development of McPhillamys pit lake level following closure 48
Figure 5-2: McPhillamys pit wall geology and evolution of pit lake level following closure 50

List of Appendices

Appendix A: Drill hole sample intervals
Appendix B: Laboratory test methods
Appendix C: ABA, NAG and CEC/ Sodicity results
Appendix D: Multi-element results
Appendix E: Static leach test results
Appendix F: XRD mineralogy results
Appendix G: Kinetic leach test results
Appendix H: Tailings laboratory results

Disclaimer

The opinions expressed in this Report have been based on the information supplied to SRK Consulting (Australasia) Pty Ltd (SRK) by Regis Resources Limited (Regis) and ALS laboratories (ALS). The opinions in this Report are provided in response to a specific request from Regis to do so. SRK has exercised all due care in reviewing the supplied information. While SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this Report apply to the site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which SRK had no prior knowledge nor had the opportunity to evaluate.

1 Introduction

The following report documents outcomes of a geochemical characterisation program for the Regis Resources Limited (Regis) McPhillamys Gold Project. The project is located in the Bathurst region of New South Wales, approximately 200 km west of Sydney. Current projections for mining at McPhillamys involve the development of an open pit and associated waste rock and tailings storage facilities (TSFs). Several geochemical characterisation programs have been carried out for the McPhillamys Project, involving both short-term (static) and long-term (kinetic) testwork as follows:

- Static geochemical characterisation of 136 samples from 63 drill holes (SRK, 2014)
- Kinetic testing of seven waste rock samples (SRK, 2015)
- Static geochemical characterisation of 32 samples from 19 drill holes and three tailings samples (SRK, 2018).

The previous work incorporated samples from drill holes which were available at that time and highlighted zones within the proposed pit shell which were considered to be gaps in the overall sample coverage.

A further drilling campaign carried out in 2018 provided an opportunity to address observed data gaps and expand the geochemical characterisation database for the McPhillamys Project. Additionally, a further five tailings samples were available from metallurgical testing in 2018 and these were incorporated into the characterisation program. Results from all testwork carried out are presented herein.

1.1 Program objectives

The overall objective of the characterisation program is to characterise the geochemical properties of materials which will be mined, dispatched to tailings, waste rock or ore storage facilities, or exposed in open pit faces during the implementation of the McPhillamys Project. The assessment is focused particularly on those geochemical characteristics which (i) have the potential to exert a detrimental environmental influence or (ii) could influence the success of mine rehabilitation.

The characterisation program is designed to provide the necessary information to evaluate the potential for acid and metalliferous drainage (AMD) and develop appropriate waste management strategies. In addition to AMD, the program is also designed to identify other waste rock and overburden properties (such as salinity) which may influence mine closure design requirements.

The work program implemented is consistent with national and international standards for assessing and documenting risks of acid and metalliferous drainage, for example reference is made to the following documents and standards:

- Preventing Acid and Metalliferous Drainage. Australian Government, Leading Practice Sustainable Development Program (LPSDP) for the Mining Industry, 2016
- Global Acid and Metalliferous Drainage (GARD) Guide (www.gardguide.com), December 2008, developed by the International Network for Acid Prevention (INAP)
- ARD Test Handbook – (AMIRA International, 2002)
- Australian and New Zealand Environment Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand 2000, Australian Water Guidelines for Fresh and Marine Waters and its updates.

1.2 Purpose of the Report

The geochemical information presented in this report will be used by Regis as part of the mining approvals process for the McPhillamys Project. The data contained in this report will also be of use during mine development planning, for example, to guide waste management handling practices. Additionally, the information will be of use during rehabilitation and closure planning and associated regulatory reporting requirements.

1.3 Statement of SRK independence

Neither SRK nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of SRK.

SRK has no prior association with Regis in regard to the mineral assets that are the subject of this Report. SRK has no beneficial interest in the outcome of the technical assessment being capable of affecting its independence.

SRK's fee for completing this Report is based on its normal professional daily rates plus reimbursement of incidental expenses. The payment of that professional fee is not contingent upon the outcome of the Report.

2 Project Overview

2.1 Project location and summary

The McPhillamys Project is located to the northeast of the town of Blayney, in the Bathurst region of New South Wales, approximately 200km west of Sydney (Figure 2-1).

Current projections are for an approximate 10-year life of mine (LOM), mining a probable ore reserve of approximately 60 Mt containing approximately 2 Moz of gold.

The planned layout of site facility areas is presented in Figure 2-2 and shows the open pit area with a single waste rock storage facility immediately east of the pit and TSF to the north.

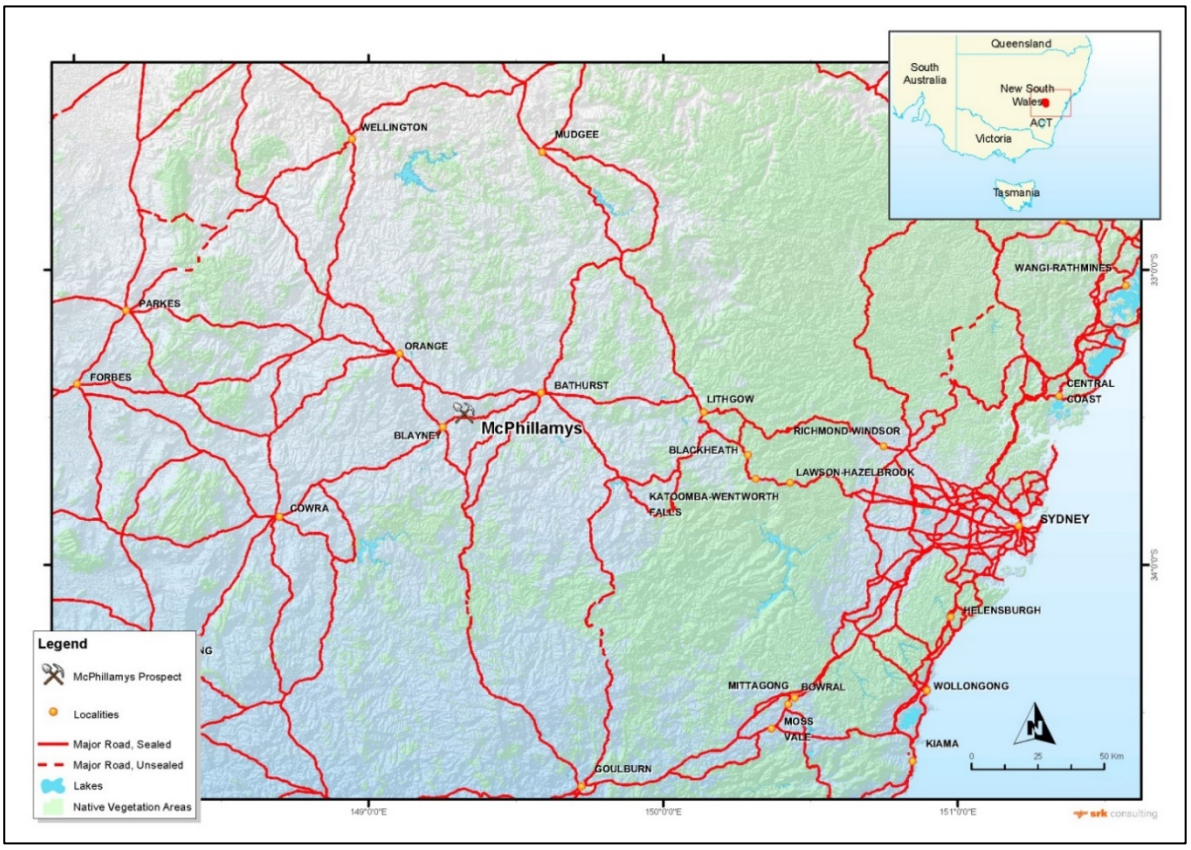


Figure 2-1: Location of McPhillamys Project

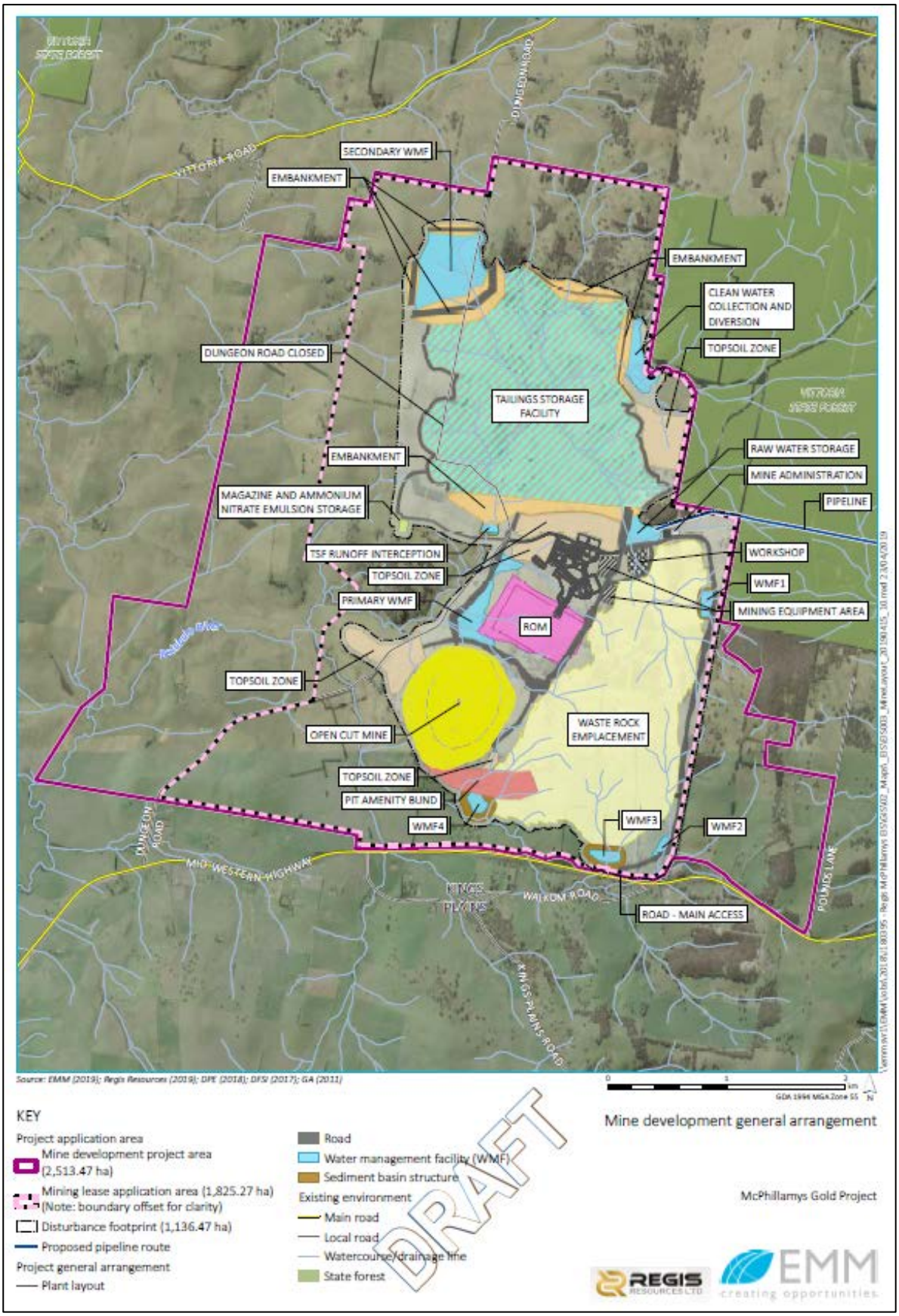


Figure 2-2: Proposed McPhillamys Mine Infrastructure

2.2 Geology

Regionally, the McPhillamys deposit lies in the East Lachlan Fold Belt, a major metallogenic region in eastern Australia. The deposit is hosted within the Silurian-aged Anson Formation which is faulted against the Ordovician aged Molong Volcanic Belt to the west by the major terrane bounding Ordovician-Silurian age Godolphin fault. The Anson Formation is unconformably overlain by deep marine Devonian sediments to the east of McPhillamys.

The McPhillamys mineralisation is a structurally controlled gold occurrence, hosted within a phyllosilicate-clay altered, sheared intermediate volcanic, volcaniclastic and intrusive igneous complex. Gold mineralisation lies within a north-south trending shear zone, slightly oblique to the Godolphin fault, and occurs in association with strong sericite-carbonate alteration, and pyrite-pyrrhotite-sphalerite-chalcopyrite-galena (sulfide) mineralisation.

Stratigraphy on a prospect scale is divided into underlying Ordovician volcanics, and a Silurian host package of variably deformed dacitic flows and proximal volcaniclastic debris, variably overprinted by intense alteration and deformation. Generally, the host rocks are intensely foliated and the highest gold grades occur within the clast-supported dacitic breccia facies. Structural elements include the major northwest striking, Godolphin fault, a pervasive, vertical, north-south trending dominant foliation, and a network of north- and northeast-trending local faults. Mineralisation is contained within a broad 0.1 g/t envelope up to 200 m wide, broadly coincident with the strong sericite-carbonate-pyrite alteration of Dacitic volcanic debris. Within this zone, discrete zones of Zn-rich mineralisation occur on the eastern margin, while two parallel, north south trending zones constrain the occurrence of higher grades. Sulfides (pyrite-pyrrhotite-sphalerite-chalcopyrite) occur at concentrations up to 10% and higher gold grades appear to be associated with coarse remobilised pyrite, chalcopyrite and pyrrhotite mineralisation.

The regional geology is presented in Figure 2-3, with the proposed pit location outlined in red.

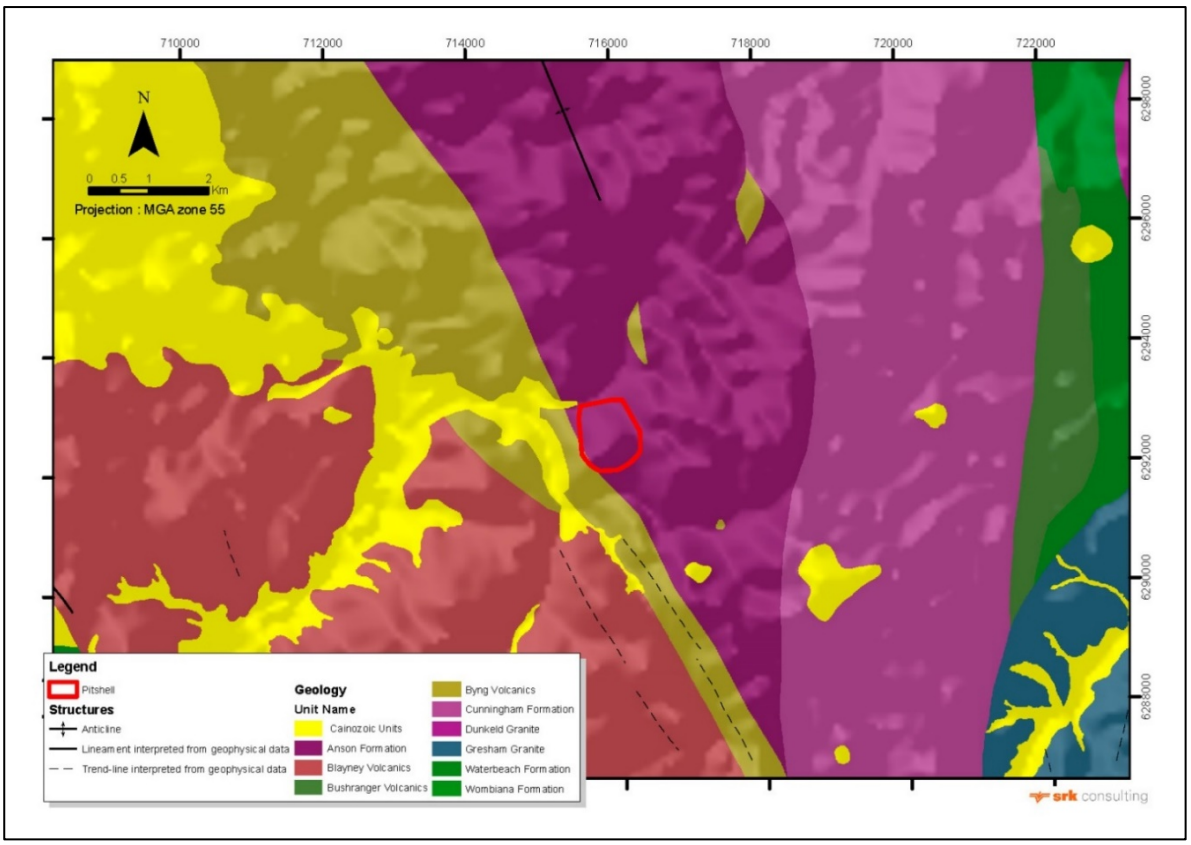


Figure 2-3: McPhillamys regional geology and pit location

3 Methodology

3.1 Sample numbers and locations

3.1.1 Waste rock and ore

A total of 197 samples from 87 drill holes were selected for static geochemical testing. Of the 197 samples, eight were ore grade, defined as samples in the Regis assay database which contain more than 0.5 mg/kg Au. The locations of samples selected in relation to the proposed pit are presented in Figure 3-1. Following identification of drill hole target intervals by SRK, samples were collected by Regis personnel and submitted to the analytical laboratory, ALS Brisbane. Drill hole intervals sampled are detailed in Appendix A.

Analysis of the McPhillamys drill hole database indicated that more than fifty different lithologies had been logged, partly as a result of changing nomenclature at times when the project changed ownership. As 3D modelling of the waste rock was not available at the time of sample selection, the relative proportions of different rock types within the Regis-logged holes were estimated based on comparison of the cumulative core length measured in each of the drill holes. This analysis included holes drilled and logged by Regis, as well as holes drilled prior to Regis' ownership of the project for which logs were updated to align lithological assignment with the Regis nomenclature. It should be noted that logged proportions may not represent accurately the proportions that could report to a waste rock facility. More accurate representation of the composition of mined waste rock would require 3D waste rock modelling. However, the use of metres logged as a proxy is considered suitable for sample selection.

The sampling plan was designed to generally include higher numbers of samples in those lithologies with greater logged lengths. Sampling was therefore biased towards volcaniclastic material which comprised almost 85% of the logged length. The percentage of the total metres attributable to each lithology are included in Table 3-1. The lithologies presented in Table 3-1 account for around 99% of the total logged metres. Additional lithologies such as alluvium and ferricrete were not included in sampling and are not presented in Table 3-1. These minor lithologies typically occur in proportions of less than 0.1% and it was not considered necessary to include them in the sampling program. Seven of the ore grade samples collected were classified as volcaniclastic and one was clay.

Table 3-1: Geochemical sample numbers from each lithology and regolith category

Lithology	Percentage of logged metres (%)	Regolith Group					Total
		Upper Saprolite	Lower Saprolite	Upper Saprock	Lower Saprock	Fresh Rock	
		"P"	"L"	"C"	"K"	"R"	
Clay	1.8	7	6	2			15 (1)
Gabbro/Dolerite	0.1			1	1	1	3
Intermediate Extrusive	4.4					1	1
Limestone	0.5	1			1	10	12
Sandstone	5.3					3	3
Shale	0.1		1	1			2
Siltstone	1.5		2	4		3	9
Vein	0.2		1			3	4
Volcaniclastic	84.8	2	11	20	18	97	148 (7)
Total	**98.7**	**10**	**21**	**28**	**20**	**118**	**197 (8)**

Note: Number in parenthesis indicates the subset of samples that were ore grade material.

In addition to the samples detailed in Table 3-1, Regis personnel collected a further 3,380 samples in 2017, each being a composite of a 4 m section of drilled material. These samples were predominantly from the central zone of the pit, as this area was the focus of the 2016–2017 drilling program which provided material for sampling.

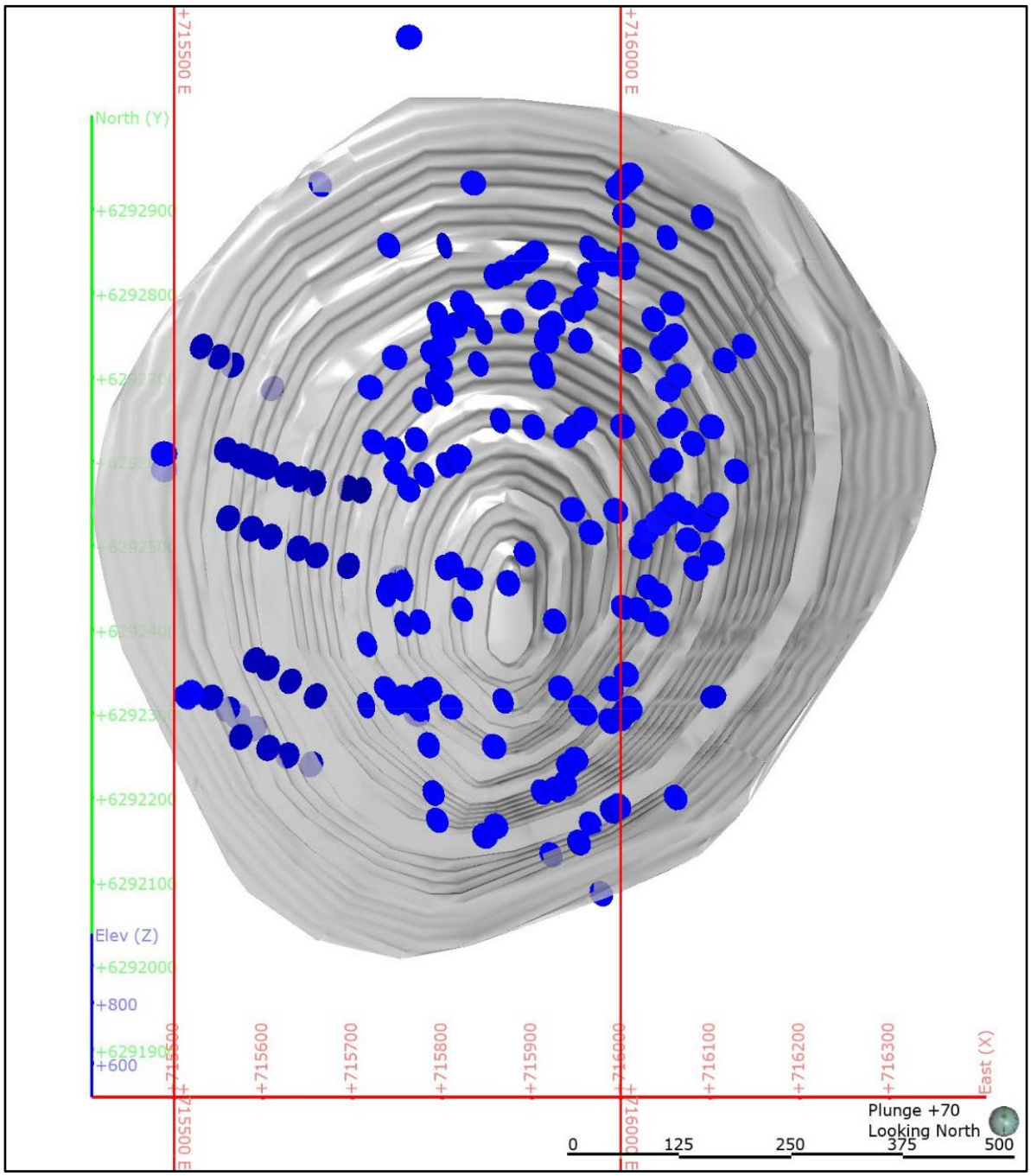


Figure 3-1: Locations of geochemical characterisation samples

3.1.2 Tailings

The following two batches of tailings samples were incorporated into the geochemical characterisation program, when available from metallurgical testwork:

- Batch 1 – three tailings samples representing oxide, transition and fresh ore material.
- Batch 2 – five tailings samples, each being a composite expected to represent tailings generated over a two-year period during the life of mine (LOM), i.e. Years 1–2, 3–4, 5–6, 7–8 and 9–10.

One significant difference between the batches was that Batch 2 was generated following development of the cyanide destruction method which will be used at site.

3.2 Sample analysis

3.2.1 Static testwork

SRK designed a static testwork program to characterise the materials sampled in terms of the overall balance between acid generating and acid consuming minerals and to allow classification of samples into one of three categories: i) non-acid forming (NAF); ii) uncertain in terms of acid forming characteristics (UC), or iii) potentially acid forming (PAF). Total metal analyses and leach tests were also included in the test program to investigate potential solute release and identify potential contaminants of concern.

The laboratory testwork program comprised two phases. The tests in the first phase were carried out on all waste rock, ore and tailings samples:

- Paste pH and electrical conductivity (EC) using a liquid to solids (L: S) ratio of 2:1
- Acid-base accounting (ABA) incorporating total sulfur (TS) and sulfate-sulfur (SO_4-S) analyses, determination of acid neutralisation capacity (ANC) and calculation of maximum potential acidity (MPA) and net-acid producing potential (NAPP)
- Net acid generation (NAG) tests
- Multi-element solids content determination (using an aqua regia digest prior to analysis).

Based on the first stage of test results, a subset of samples was selected for Stage 2 testing, which included the following testwork:

- Chromium Reducible Sulfur (CRS)
- Short-term shake flask extraction (SFE) tests using both de-ionised water and a mild-acid leach solution with 24-hour agitation at a 1:3 solid: liquid ratio (the resultant leachates were analysed for multi-element composition)
- Total carbon (TC)/ total inorganic carbon (TIC)/ total organic carbon (TOC)
- Acid-Base Characteristic Curve (ABCC) testing
- Cation Exchange Capacity (CEC).

The tailings were provided in the form of a slurry. After separation of the solids from the liquids in the laboratory, the solid portions were analysed as outlined above. The liquid fractions were submitted for multi-element analysis including cyanide speciation.

The 3,380 Regis composite samples were submitted for multi-element determination only, using an aqua regia digest prior to analysis.

Analytical methods are described in Appendix B.

All geochemical characterisation samples were dispatched to ALS in Brisbane for preparation and analysis. ALS employs internal quality assurance (QA) methods in line with its National Association of Testing Authorities (Australia) (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 ALS indicated that, in general, the QA indicators reported by ALS, for example, laboratory duplicates, method blanks, matrix spikes and laboratory control samples) were within standard limits.

3.2.2 Kinetic testwork

Waste rock

Following receipt of data for static testing, seven waste rock samples were selected for kinetic testing using a free-draining leach column method, based on the method described by AMIRA (2002). In summary, a sample of crushed rock (particle size <10 mm) was placed on a mesh, in a free-draining container, and subjected to periodic irrigation with a known volume of de-ionised water. The leachate draining from the sample was collected following each irrigation cycle and analysed.

The method was developed specifically to measure kinetically controlled reactions (e.g. sulfide oxidation). Between irrigation events, the samples are maintained in a moist, aerated condition and it is expected that sulfides present will oxidise. Such oxidation will result in accumulation of sulfate, iron and other metals as reaction products. Regular irrigation flushes soluble reaction products from the sample. By monitoring the chemical composition of leachates as a function of time, it is possible to estimate key reaction rates (e.g. sulfide oxidation rates and acid neutralisation rates).

The following modifications from the test procedure described by AMIRA were adopted:

- No heat lamps were used – in the standard method, heat lamps are used to ensure that the sample dries out between irrigation cycles. For the McPhillamys waste rock samples, it was found that the samples dried sufficiently under ambient conditions.
- Irrigation frequency was increased to occur on a weekly basis – in the standard method, the irrigation regime is a more complex cycle of weekly and monthly events (intended to approximate periodic wetting and drying cycles). The modified irrigation regime was designed to minimise the likelihood of solubility controls limiting solute mass in the leachate.

As volcaniclastic lithologies are anticipated to form the bulk of the waste rock mass (around 85% of logged length) and are dominant in the central pit area where sulfides are more prevalent (Section 0), a range of volcaniclastic sub-types were selected for kinetic testing:

- Volcaniclastic undifferentiated (Sample MP27008)
- Volcaniclastic conglomerate (Sample MP27042)
- Volcaniclastic fine grained (tuff, <2 mm) (Samples MP02702 and MP02727)
- Volcaniclastic matrix supported (lapilli, 2–64 mm) (Samples MP02710, MP26986 and MP27021).

The samples encompassed a range of classifications with respect to potential for acid generation.

The objectives of kinetic testing are to measure i) the rate of sulfide oxidation and hence acid production, ii) concurrent rate of acid neutralisation, and iii) solute release rates. Results may be used to predict the time to consumption of the acid generating and acid neutralising minerals respectively, providing an indication of whether acidic conditions could develop in the future.

The kinetic tests operated for periods between 25 and 50 weeks during 2014–2015, at the ALS laboratory in Brisbane. Mineralogical determinations by X-ray diffraction (XRD) were also carried out on waste rock samples used for kinetic tests.

Tailings

The five Batch 2 tailings samples were also submitted for kinetic testing. For these samples, the standard AMIRA method was adopted, where heat lamps are used to promote drying of the samples between leach events. Samples are wetted on a weekly basis and leached on each fourth week, with leachate being collected and submitted for multi-element analysis. Testwork commenced at the Intertek laboratory in Perth in early 2019 and is currently ongoing.

Three of the Batch 2 tailings samples (representing Years 1–2, 5–6 and 9–10) were also submitted for oxygen consumption rate (OCR) measurements at the Graeme Campbell & Associates (GCA) laboratory in Bridgetown, Western Australia. The OCR measurements provide an indication of how reactive the sulfides in the tailings may be.

4 Results and Discussion

A key focus of the static testwork program is to define the potential of materials to both produce and neutralise acidity. Selected results pertaining to this task are presented in the following sections followed by results from multi-element determinations and leaching characteristics. Full analytical results are included in Appendices B–E.

4.1 Paste pH and EC

The paste tests give an indication of availability of readily soluble weathering products and salts. An acidic pH (pH <5) may indicate the presence of acidic reaction products generated by sulfide oxidation. A neutral to alkaline pH (~7 or more) suggests the presence of reactive neutralising minerals, or, if categorised as potentially acid generating, that the sample has, as yet, not oxidised sufficiently to become acidic.

Paste EC can be used to indicate the state of oxidation/ weathering, where higher EC values usually suggest a more advanced state of oxidation/ weathering. Where the sample originates from a naturally saline environment, an elevated paste EC may simply indicate the presence of residual salts in the sample.

Box and whisker plots summarising the paste pH and EC results for each lithological group are presented in Figure 4-1 and Figure 4-2. The full results are provided in Appendix C to Appendix G.

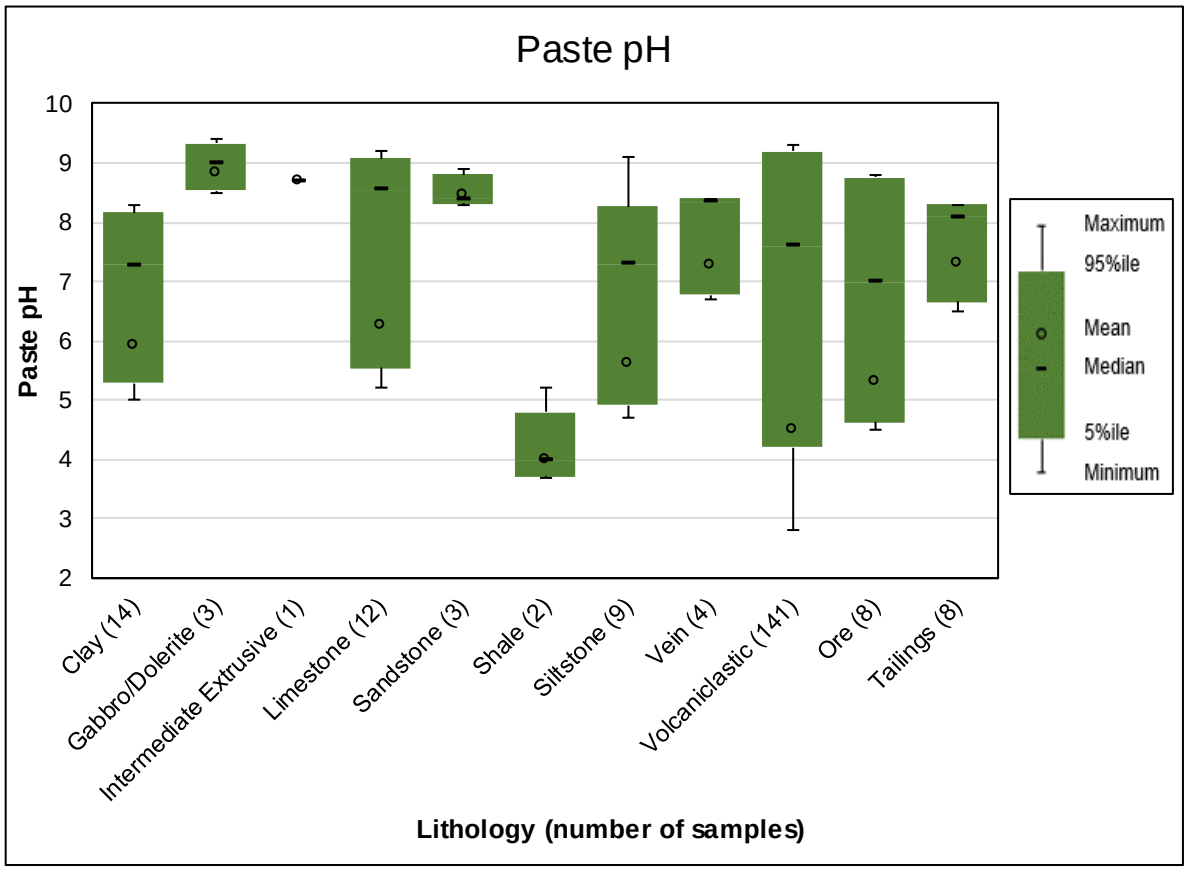


Figure 4-1: Paste pH results

Note: Ore comprises Clay (1 sample) and volcaniclastic (7 samples).

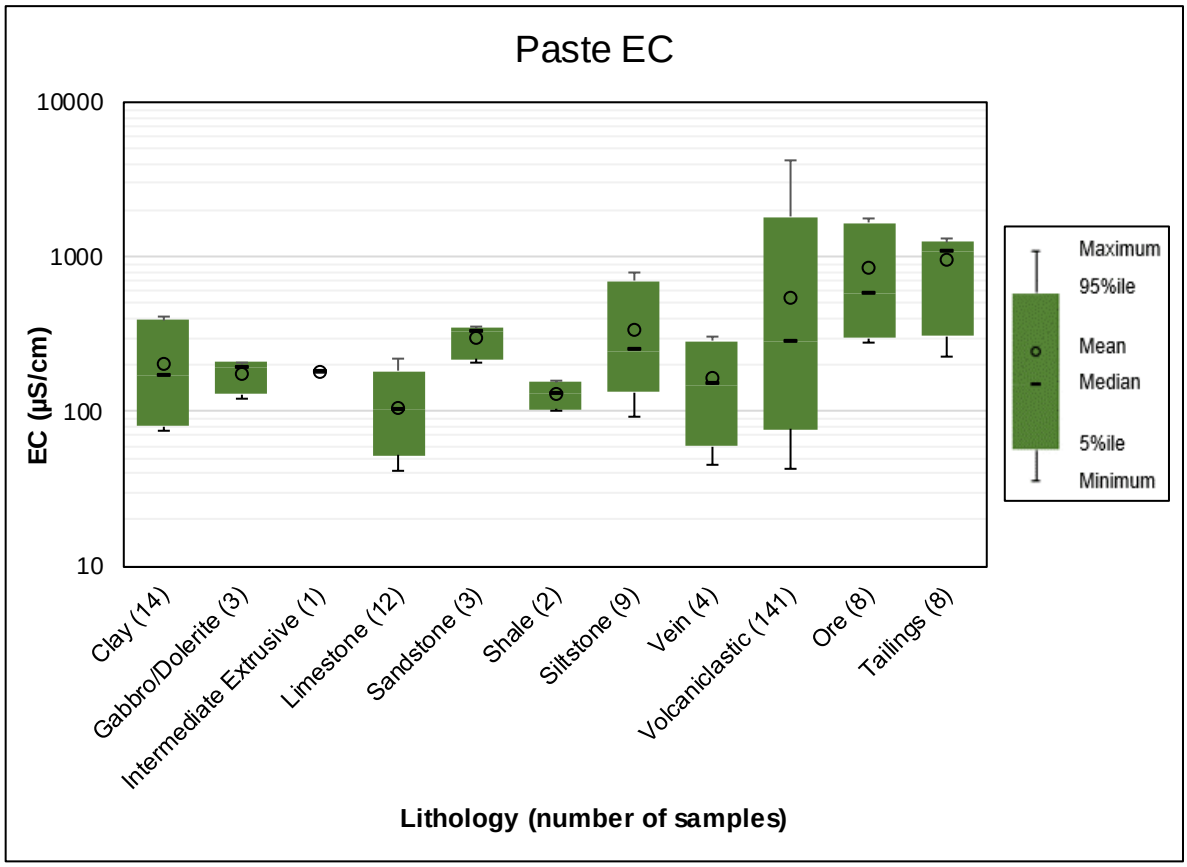


Figure 4-2: Paste EC results

Note: Ore comprises Clay (1 sample) and volcaniclastic (7 samples).

The samples recorded a wide range of paste pH values (pH 2.8–9.4) with the volcaniclastic grouping recording values over most of the range, from the minimum value of pH 2.8 up to a maximum of pH 9.3. The average volcaniclastic paste pH was 4.5, skewed by low values, with the median for this lithology being pH 7.6. Median paste pH values greater than pH 7 were recorded in all lithological groupings except for shale, which only had two samples (pH 3.7 and 5.2). The paste pH of ore samples ranged from 4.2–8.4, with a median of pH 7 and the range for tailings samples was pH 6.5–8.3, with a median of pH 8.1.

For most samples, the paste EC values were low (<500 µS/cm) indicating a limited presence of readily soluble salts/ minerals. Only the tailings grouping recorded a median EC value >500 µS/cm and only tailings and volcaniclastic samples recorded individual EC values >1,000 µS/cm, with a maximum of 4,190 µS/cm in a volcaniclastic sample. The two highest EC values were in samples with low pH (pH 2.8 and pH 3), indicating readily soluble sources of acidity, e.g. secondary sulfates which formed due to sulfide oxidation.

4.2 Acid-base accounting and net acid generation

The static acid-base accounting (ABA) and net acid generation (NAG) test methods provide a means to determine the acid forming and neutralising characteristics of materials tested.

Summary ABA and NAG testwork results for waste rock and ore are shown in Table 4-1 (full results are shown in Appendix C) and Table 4-2 shows the results from tailings testwork. The results are discussed further in the following sections.

Table 4-1: Median values from ABA and NAG testwork for waste rock and ore samples

Lithology	Number of samples	Paste pH	Paste EC	Total S	Sulfate S	MPA	ANC	NAPP	NAG acidity	NAG pH
		pH Unit	µS/cm	%		kg H_2SO_4/t				pH Unit
Clay	14	7.3	171	0.01	<0.01	0.4	3.35	-1.4	0.3	6.8
Dolerite/ Gabbro	3	9.2	191	0.05	<0.01	1.5	88	-86.7	<0.1	11.3
Intermediate Extrusive	1	8.7	176	1.0	0.01	29	138	-109	<0.1	10.4
Limestone	12	8.5	102	0.03	<0.01	0.8	848	-847	<0.1	11.0
Sandstone	3	8.4	326	2.7	<0.01	82	82	51	13.8	3.2
Shale	2	4.0	129	0.06	0.01	1.7	1.1	0.6	0.8	5.4
Siltstone	9	7.3	247	0.02	<0.01	0.6	1.8	-0.1	0.7	6.5
Vein	4	8.3	149	0.05	<0.01	1.4	274	-254	<0.1	8.5
Volcaniclastic	141	7.6	282	0.8	0.05	25	42	-0.5	0.1	7.3
Ore	8	7.0	574	6.7	0.16	204	32	145	55	2.6

Table 4-2: ABA and NAG testwork results for tailings samples

Sample	Ore period (years)	Paste pH	Paste EC	Total S	Sulfate S	MPA	ANC	NAPP	NAG acidity	NAG pH
		pH Unit	µS/cm	%		kg H_2SO_4/t				pH Unit
Oxide	-	8.2	229	1.78	n.d.	54	4.2	50	34	2.6
Transition	-	7.5	459	4.81	n.d.	147	17.3	130	94	2.3
Fresh	-	6.5	1070	5.52	n.d.	169	47	122	79	2.4
MCPTST01	1-2	8.3	1153	5.7	0.25	174	80	87	55	2.9
MCPTST02	3-4	8.3	1096	5.81	0.27	178	73	97	86	2.6
MCPTST03	5-6	7.9	1300	6.09	0.3	186	62	115	95	2.5
MCPTST04	7-8	8	1175	6.31	0.28	193	72	113	101	2.6
MCPTST05	9-10	8.3	1039	7.23	0.26	221	74	139	112	2.5

Note: n.d. – not determined

4.2.1 Acid generation potential

Due to the importance of sulfides such as pyrite (FeS_2) in acid generation, sulfur is a key parameter analysed in ABA testwork. Sulfur is also used in calculation of the maximum potential acidity (MPA) values.

Figure 4-3 shows that:

- Total sulfur concentrations in the waste rock were in the range <0.01–11 wt% S, with the highest concentration in a volcaniclastic sample.
- Most lithological groupings (i.e. limestone, sandstone, siltstone, vein, volcaniclastic and ore) contained samples with >1 wt% S.
- Median values for the intermediate extrusive, sandstone volcaniclastic and ore lithological groupings were greater than 0.3%. Median values for the other lithological groups were <0.1%.

Tailings total sulfur concentrations were in the range 1.8–7.2 wt% S, with minimum and maximum concentrations in the oxide and Year 9–10 composite samples respectively.

Samples were also submitted for determination of SO_4 content (HCl digest method) and in samples with >0.3 wt% total sulfur, the SO_4 concentration was typically <10% of the total sulfur, highlighting that sulfide S is the dominant sulfur species.

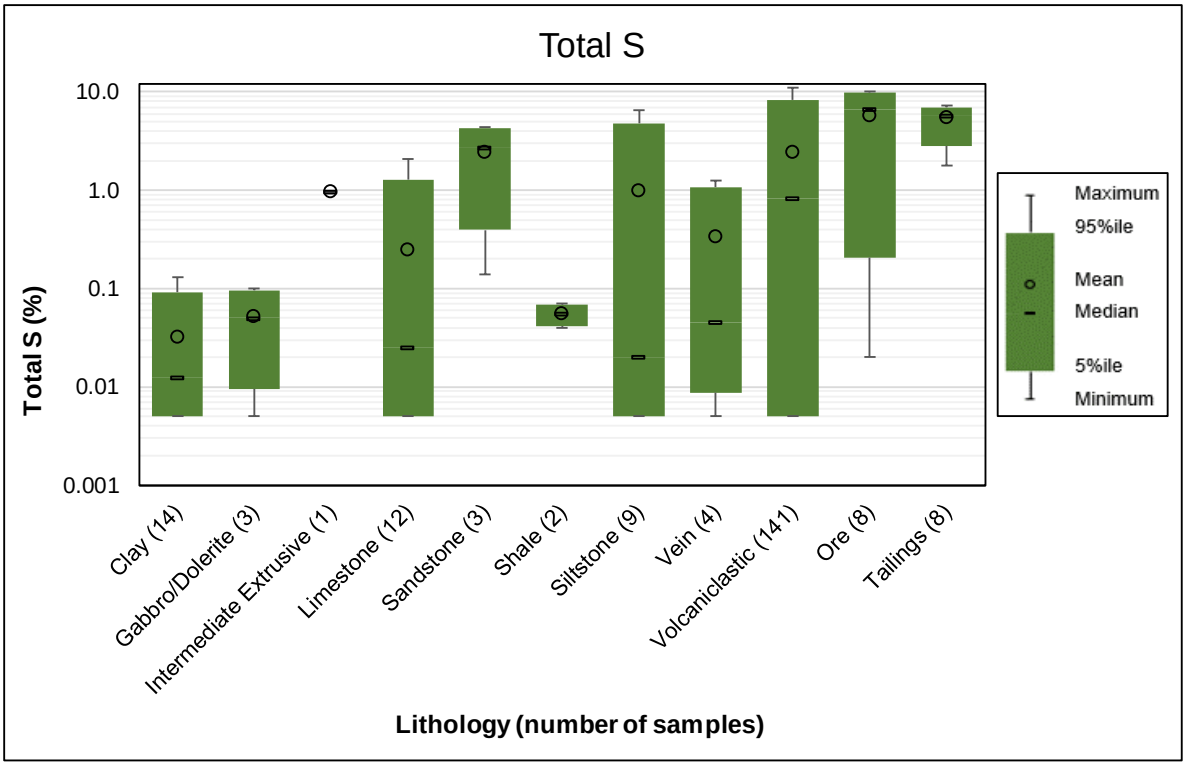


Figure 4-3: Total sulfur results

Note: Ore comprises Clay (1 sample) and volcaniclastic (7 samples).

Figure 4-4 presents a histogram of the total-S data for the 197 waste rock samples. Around 50% of the samples contain more than 0.3% sulfur, a concentration which would typically be of interest to the regulatory authorities in terms of acid generation.

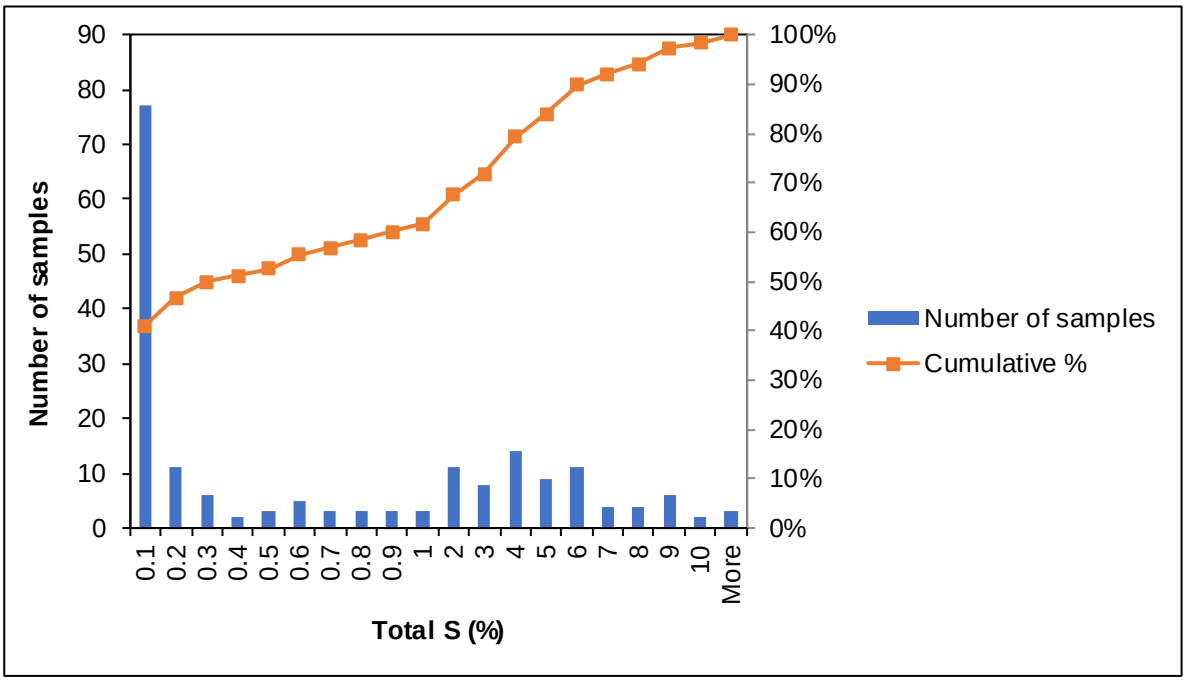


Figure 4-4: Histogram of total-S concentrations in SRK waste rock samples

The results in Figure 4-4 may be compared to those in Figure 4-5 which presents a histogram based on data extracted from the McPhillamys database. Data were extracted where a total-S value was present, and the sample contained less than 0.3 ppm Au. This extract contained 7,634 samples. Almost 80% of the samples in the database had greater than 0.3% S, with 68% having more than 1% S.

Figure 4-6 shows a histogram of sulfur concentrations in ore grade samples in the database and indicates that ore has a greater tendency towards higher sulfur concentrations. Around 95% of the ore grade samples had >1% S. This is of importance both for locations where ore will be stored, e.g. the run of mine (ROM) pad and in consideration of tailings generated during processing.

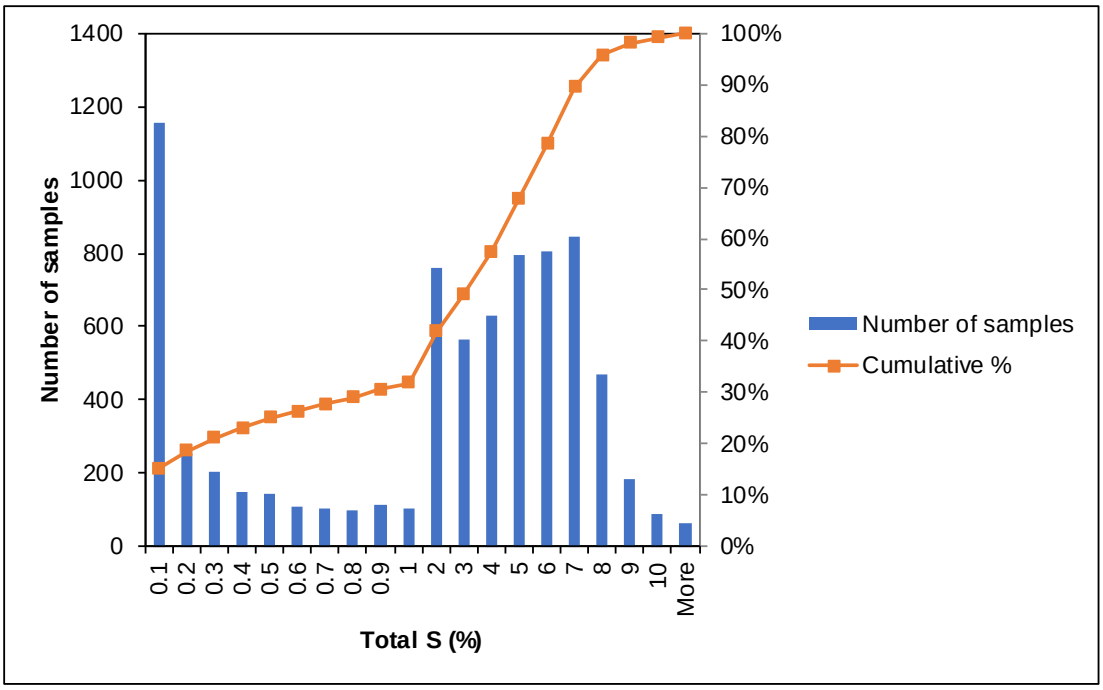


Figure 4-5: Histogram of total-S concentrations in McPhillamys waste rock database

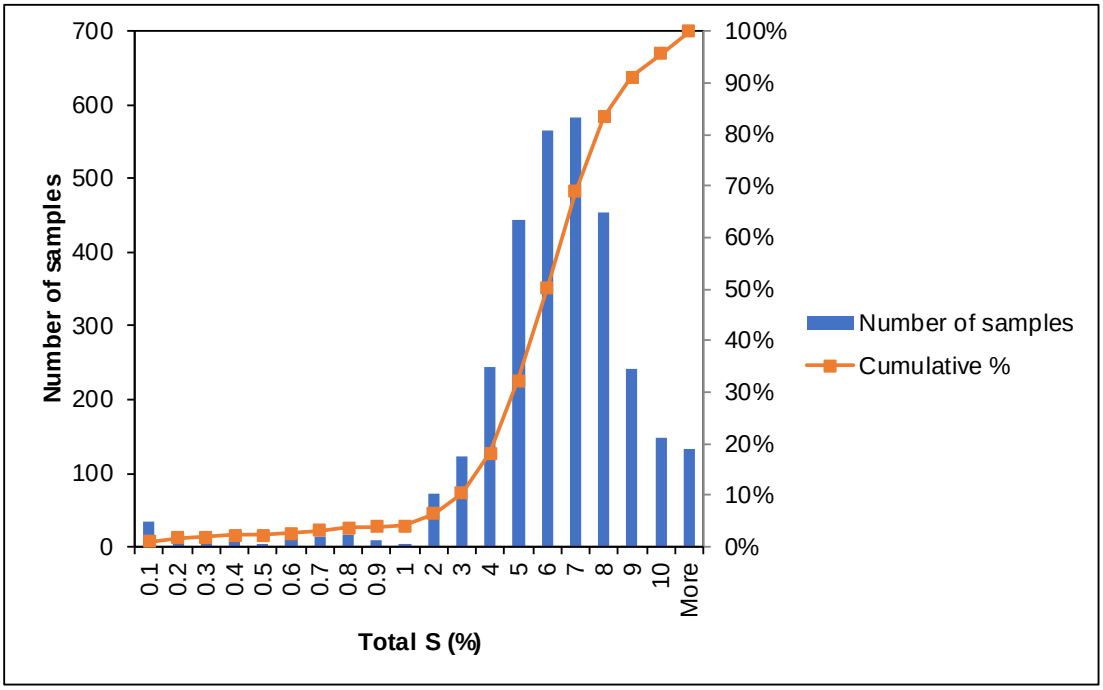


Figure 4-6: Histogram of total-S concentrations in McPhillamys ore sample database

The spatial distribution of sulfur concentrations in the McPhillamys samples was investigated using Leapfrog. The results presented in Figure 4-7 indicate that the total-S concentrations less than 0.3% are more common around the periphery of the sample set, in particular around the southern and western margins and in the upper zones on the eastern side. This is largely indicative of the coincident relationship between the gold mineralisation and sulfide occurrence, with the main ore zone occurring in the central pit area.

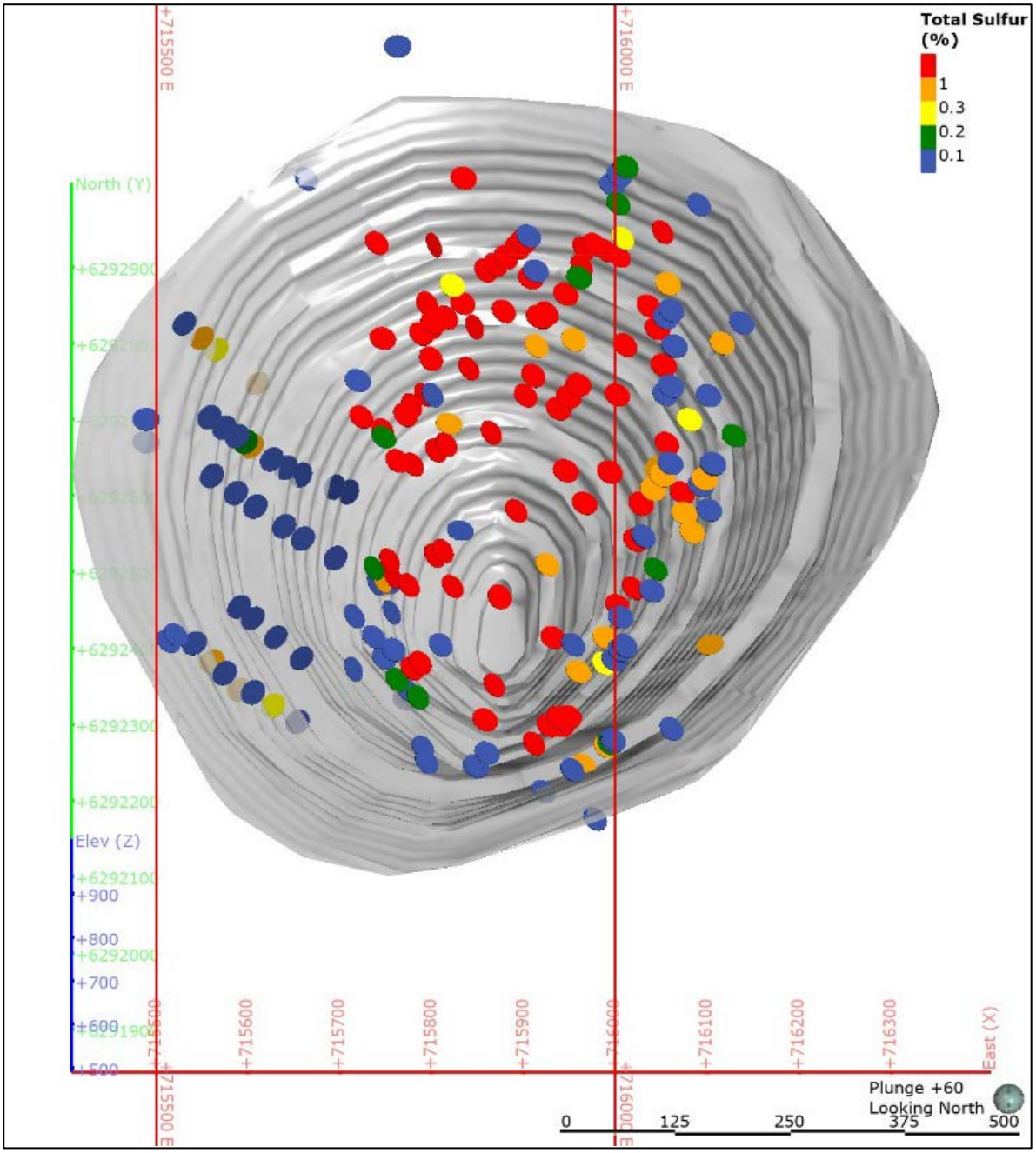


Figure 4-7: Spatial distribution of total sulfur concentrations

Sulfur speciation testing undertaken on all samples involved the determination of sulfate-S (SO_4-S) via hydrochloric acid (HCl) digest. The sulfide sulfur content was then determined by calculation, where sulfide sulfur is the difference between the total sulfur and SO_4-S (i.e. total S – SO_4-S). Calculated sulfide-S contents ranged from 1% to 100% of the total-S, the median proportion from the entire SRK dataset being 96%, highlighting the importance of sulfide-S in the McPhillamys samples.

The relationship between total-S and sulfide-S is presented in Figure 4-8 and highlights that the values correlate better at higher concentrations.

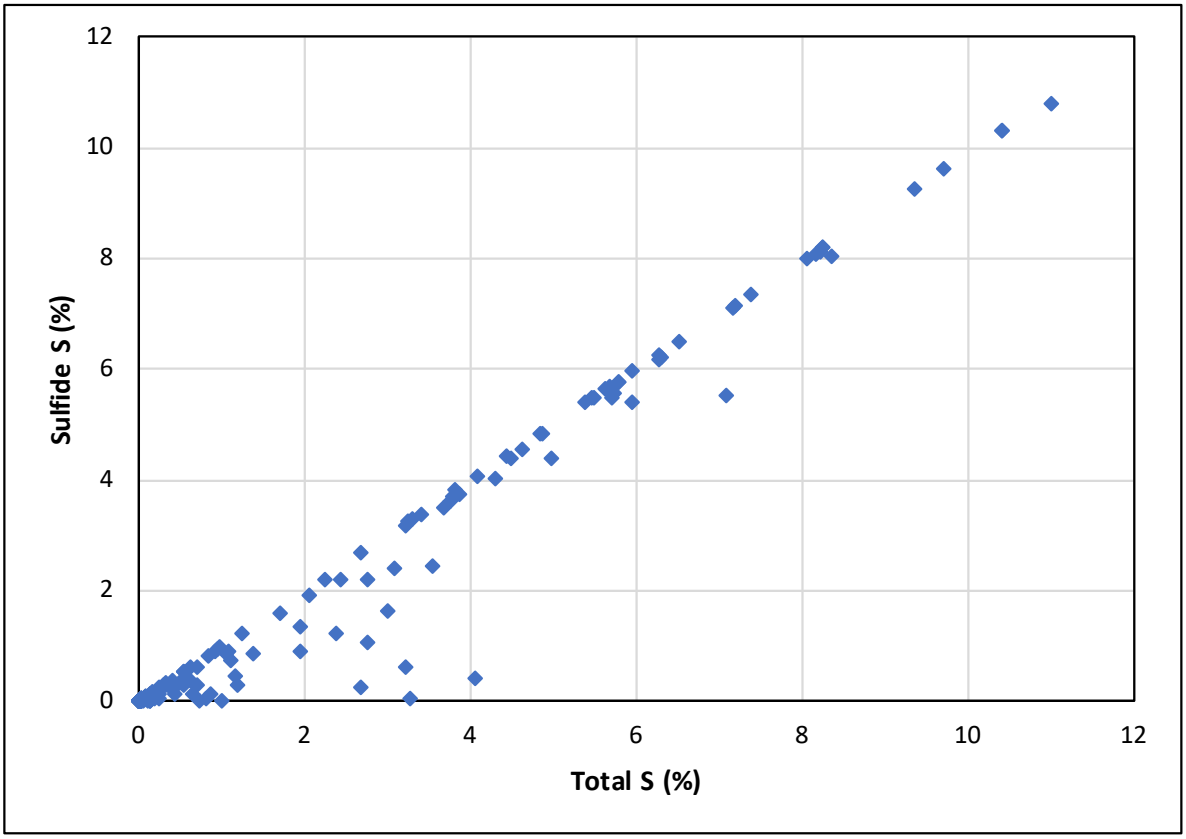


Figure 4-8: Comparison of total sulfur and sulfide sulfur concentrations

As a portion of the SO_4-S may be insoluble under the conditions of the HCl digest method (e.g. sulfate minerals such as barite and jarosite), the chromium reducible sulphur (CRS) method may be used to provide a direct measure of the sulfide sulfur content which can then be used to confirm calculated sulfide values. A sub-set of nine samples was submitted for CRS analysis, with the results presented in Table 4-3.

The results of testwork confirmed that there was generally good agreement between the measured and calculated sulfide values. The CRS results confirmed that, in the samples tested, sulfide-S dominated. The small variability in results may be due to sub-sample heterogeneity.

Table 4-3: Chromium reducible sulfur (CRS) results

Lithology	Total-S%	Sulfide-S% (HCl method)	Sulfide-S% (CRS method)
Volcaniclastic - Undifferentiated	4.5	4.4	3.7
Volcaniclastic - Matrix Supported	3.8	3.6	2.9
Volcaniclastic - Matrix Supported	6.3	6.2	5.2
Volcaniclastic - Matrix Supported	2.0	1.4	1.7
Volcaniclastic - Matrix Supported	3.0	1.6	2.0
Volcaniclastic - Fine Grained Tuff	3.8	3.7	3.4
Volcaniclastic - Fine Grained Tuff	2.4	1.2	1.9
Volcaniclastic - Fine Grained Tuff	0.5	0.4	0.4
Volcaniclastic - Fine Grained Tuff	3.7	3.5	2.8

As MPA values are calculated from total S concentrations, the highest median MPA values were in the ore, intermediate extrusive, sandstone and volcaniclastic groupings, all of which had MPA values higher than 10 kg H_2SO_4/t (Table 4-1).

4.2.2 Acid neutralisation capacity

Acid generated from sulfide oxidation may be neutralised by other minerals present in the sample. The ANC is a measure of the role that these minerals may play in neutralising acid that may be generated. While many minerals may contribute to the ANC, the carbonate minerals (e.g. calcite, $CaCO_3$ and dolomite, $CaMg(CO_3)_2$) are the most important, as these react quickly and buffer at near-neutral pH. In comparison, minerals such as aluminosilicates react more slowly and ANC attributable to them is generally not considered readily available. It should also be noted that not all carbonates (e.g. siderite, $FeCO_3$) contribute to neutralisation as significantly or rapidly as calcite.

The ANC of the McPhillamys waste rock samples ranged from <0.5 kg H_2SO_4/t to 979 kg H_2SO_4/t, with an overall average of 100 kg H_2SO_4/t and median of 31 kg H_2SO_4/t. Shale, siltstone and clay samples typically had ANC values at the lower end of the range (<50 kg H_2SO_4/t), with high values (>100 kg H_2SO_4/t) recorded in gabbro, intermediate extrusive, limestone, sandstone and volcaniclastic samples. Limestone and volcaniclastic groupings also recorded ANC values <0.5 kg H_2SO_4/t, with the low value in one limestone sample suggesting an incorrect lithological assignment during logging. In general, the limestone grouping had the highest ANC values, with 9 of 12 samples having values higher than 750 kg H_2SO_4/t.

The ANC values of ore samples ranged from 0.6–76.3 kg H_2SO_4/t with an average of 36 kg H_2SO_4/t and median of 32 kg H_2SO_4/t.

Tailings had ANC values in the range 4.2–80 kg H_2SO_4/t, with a median of 67 kg H_2SO_4/t. The lowest ANC values in tailings samples were for oxide and transitional samples.

To investigate the carbonate component of ANC in McPhillamys waste rock materials, independently of contribution from aluminosilicates, eight samples were submitted for carbon speciation testwork. Carbonate neutralisation potential (CarbNP) values were then calculated using inorganic carbon and expressed in kg H_2SO_4/t for comparison with ANC results. These data are presented in Table 4-4 and indicate that, in the samples tested, up to 40% of the ANC may be present in a non-carbonate form. The results for sample MP02702 appear somewhat anomalous and could be indicative of the presence of Fe-bearing carbonate (e.g. siderite) which would contribute to the CarbNP result, but not ANC.

Table 4-4: Carbonate NP results

Sample ID	Lithology	ANC (kg H_2SO_4/t)	CarbNP (kg H_2SO_4/t)	CarbNP as percentage of ANC
MP02706	Volcaniclastic – Undifferentiated	65	44	68%
MP02716		112	75	67%
MP02710	Volcaniclastic – Matrix Supported	107	64	60%
MP02712		147	121	82%
MP02749		91	60	66%
MP02702	Volcaniclastic – Fine-grained Tuff	22	31	142%
MP02727		56	50	90%
MP02743		18	13	71%

The eight samples assessed for CarbNP were also submitted for acid-base characterisation curve (ABCC) testing, where acid is incrementally added to a sample while recording pH. The ABCC results are presented in Table 4-5 and Figure 4-9. Typically, neutralisation at pH 7 and above is indicative of

control by calcite, neutralisation between pH 6 and 7 may be indicative of dolomitic carbonate, and pH buffering by aluminium and iron hydroxide minerals may occur below pH 4.5.

In Figure 4-9, the relatively long plateau between pH 6.5 and 5.5 for MP02716 indicates buffering by carbonate minerals. For this sample, approximately half of the ANC (53%) is readily available for acid neutralisation.

While there is some evidence of a small amount of carbonate buffering for MP02749, MP02710 and MP02712, generally the pH drops rapidly, with little further buffering occurring. The proportion of ANC consumed to pH 4.5 is relatively low, indicating that only a small amount is readily available for acid neutralisation.

Table 4-5: ABCC results

Sample ID	Lithology	ANC	NP to pH 6		NP to pH 4.5	
		kg H_2SO_4/t	kg H_2SO_4/t	ANC consumed	kg H_2SO_4/t	ANC consumed
MP02706	Volcaniclastic - Undifferentiated	65	3.5	5%	6.0	9%
MP02716		112	33.3	30%	59.2	53%
MP02710	Volcaniclastic - Matrix Supported	107	10.4	10%	22.5	21%
MP02712		147	8.4	6%	12.2	8%
MP02749		91	12.3	13%	15.3	17%
MP02702	Volcaniclastic - Fine-grained Tuff	22	0.8	3%	2.8	13%
MP02727		56	2.8	5%	4.9	9%
MP02743		18	0.0	0%	0.2	1%

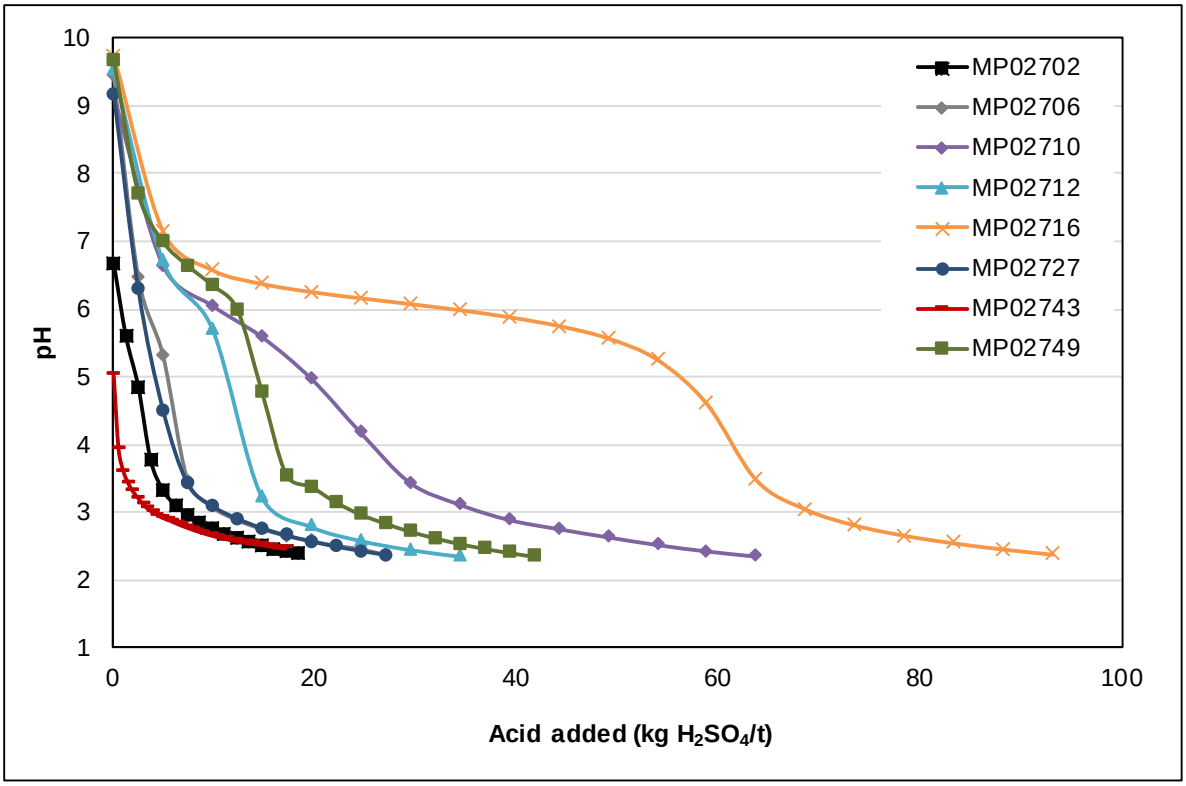


Figure 4-9: ABCC titration results

The ABCC results suggest that the readily available neutralisation capacity of the samples is significantly lower than the measured ANC, ranging from 1% - 53% of ANC at pH 4.5. In two of the samples (MP02710 and MP02727), calcite was identified in the mineralogical assessment (Table 4-16) at concentrations which generally agree with CarbNP values. The results of the ABCC tests suggest either that the calcite in these samples is not contributing as expected to the ANC or that there are issues with the ABCC data.

The relationship between Ca concentrations and ANC was assessed to investigate the potential use of Ca as a proxy for ANC in the larger multi-element database. Calcium concentrations were converted to ANC values, assuming that all measured Ca was in the form $CaCO_3$. It should be noted that the Ca concentrations assessed were results from aqua regia digests, and therefore do not represent 'total' concentrations. Aqua regia does not digest all minerals, e.g. resistant silicates; however, it would be expected to digest all carbonates. The Ca derived ANC values are plotted against measured ANC in Figure 4-10. There is a strong correlation, indicating that Ca (based on aqua regia digests) may be used as a proxy for ANC, in the absence of measured ANC values. The measured ANC is typically slightly higher than Ca derived ANC, therefore using Ca derived ANC values is somewhat conservative. It should be noted that ten samples are not shown in Figure 4-10 as all had Ca concentrations which were reported as over-range. Nine of these samples were limestone and all had measured ANC values in the range 760–979 kg H_2SO_4/t. Exclusion of these samples is not detrimental to the purpose of the comparison of ANC and Ca, as application of Ca as a proxy for ANC to the multi-element database largely involves lithologies other than limestone (predominantly volcaniclastic).

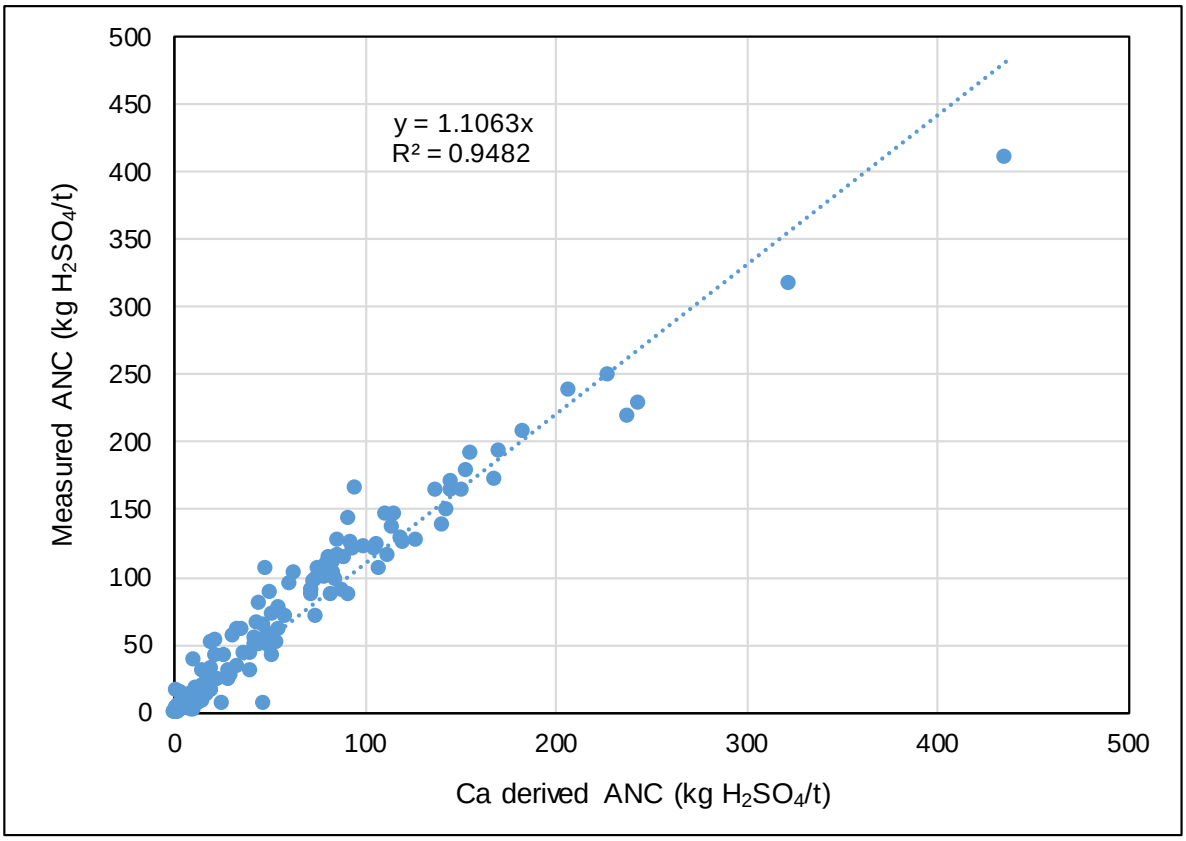


Figure 4-10: Relationship between measured ANC and Ca derived ANC

4.2.3 Net acid generation

During the NAG test, samples are mixed with the strong oxidant, hydrogen peroxide, to oxidise 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. In addition to measurement of the solution pH (NAG pH), 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 consumption of any neutralising mineral phases. The acidity generated between pH 4.5 and pH 7 includes contribution from metals such as copper, 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. NAG pH values ranged from pH 2.1 to pH 11.4 and are presented in Figure 4-11. Limestone, sandstone, siltstone and volcaniclastic samples, along with ore and all tailings, recorded NAG pH values <4.5. NAG pH >7 was recorded for samples from all groupings except for shale, ore and tailings.

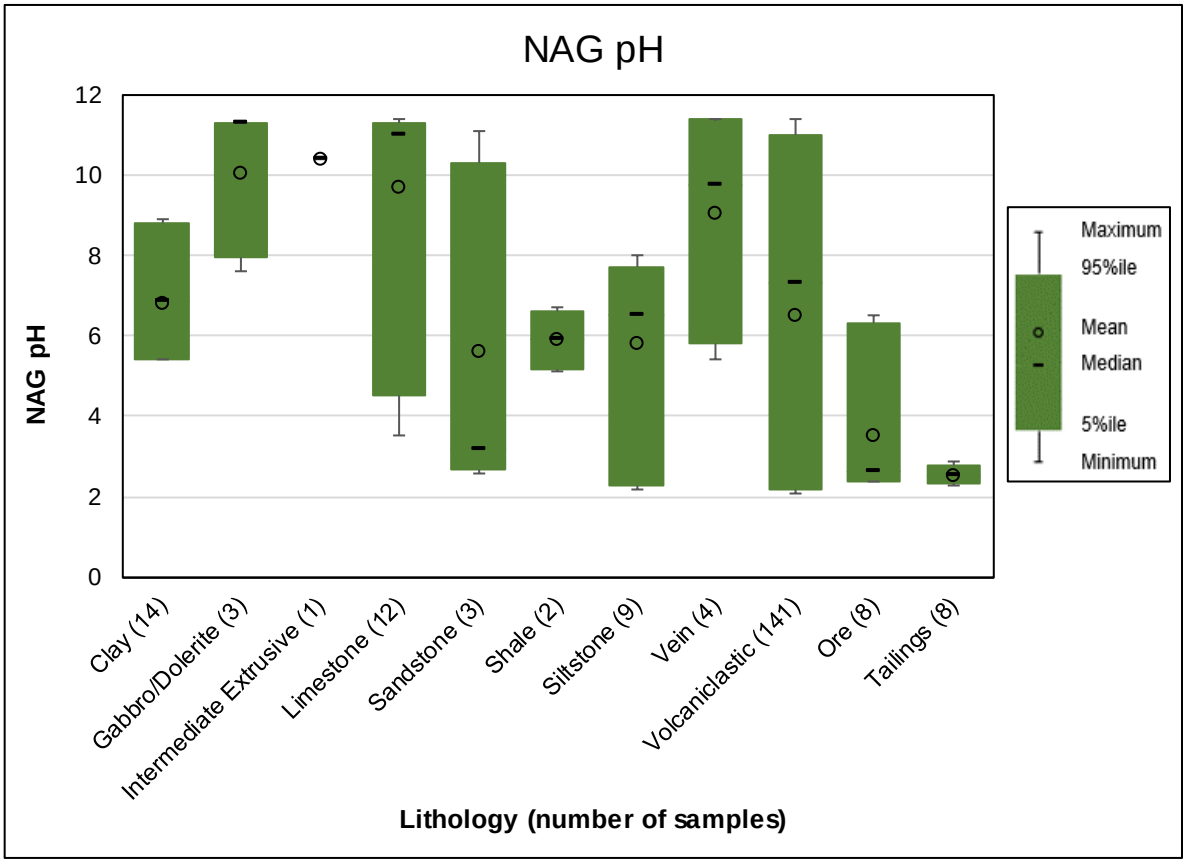


Figure 4-11: NAG pH results

Note: Ore comprises Clay (1 sample) and volcaniclastic (7 samples).

4.3 Material classification

The net acid production potential (NAPP) of a sample is the balance of MPA and ANC, i.e. NAPP = MPA - ANC. A negative NAPP indicates an overall excess of neutralising capacity, while a positive NAPP indicates an excess of acidity.

Calculated NAPP values for the waste rock samples ranged from -979 kg H_2SO_4/t to 328 kg H_2SO_4/t, with 114 of 189 samples having negative NAPP values indicating an overall excess of neutralising capacity. Negative NAPP values were recorded for all gabbro/ dolerite, intermediate extrusive, limestone, and vein samples. Only the ore and tailings groups had all samples with positive NAPP values.

For the majority of samples, the calculated NAPP values were higher than the NAG acidity measured from titration to pH 7. This is not uncommon, and could either be due to a portion of the total sulfur being in non-pyrite minerals (e.g. pyrrhotite, sphalerite and chalcopyrite), therefore an over-estimation in NAPP (pyrite is assumed as a worst case in the NAPP calculation), or could be due to incomplete oxidation of sulfides in the NAG test, therefore an under-estimation in the NAG result.

4.3.1 AMIRA classification

Results from NAG testwork are commonly used along with NAPP values to classify samples as NAF, PAF or UC. The criteria used to classify the samples are shown in Table 4-6.

Geochemical classification plots showing the classification of the samples are shown in Figure 4-12 and Figure 4-13, with samples differentiated by lithological and regolith group, respectively. The plots highlight the range of material classifications from NAF to PAF, with mixed classifications for several lithologies. The limestone samples stand out at the upper end of the NAF range as a result of their high ANC values and the majority of the ore and all of the tailings samples classify as PAF. The fresh rock regolith grouping has the largest number of samples (Table 3-1) and shows the largest spread in classification, with the other regolith groups typically having more tightly defined NAPP ranges.

Table 4-6: AMIRA classification criteria

Class	Sub-class	Description
NAF	NAF	Samples with a negative NAPP value and a NAG pH of ≥4.5
PAF	PAF	Samples with a positive NAPP value and a NAG pH of <4.5
Uncertain	UC	Samples with negative NAPP but giving NAG pH values <4.5
		Samples with positive NAPP but giving NAG pH values ≥4.5

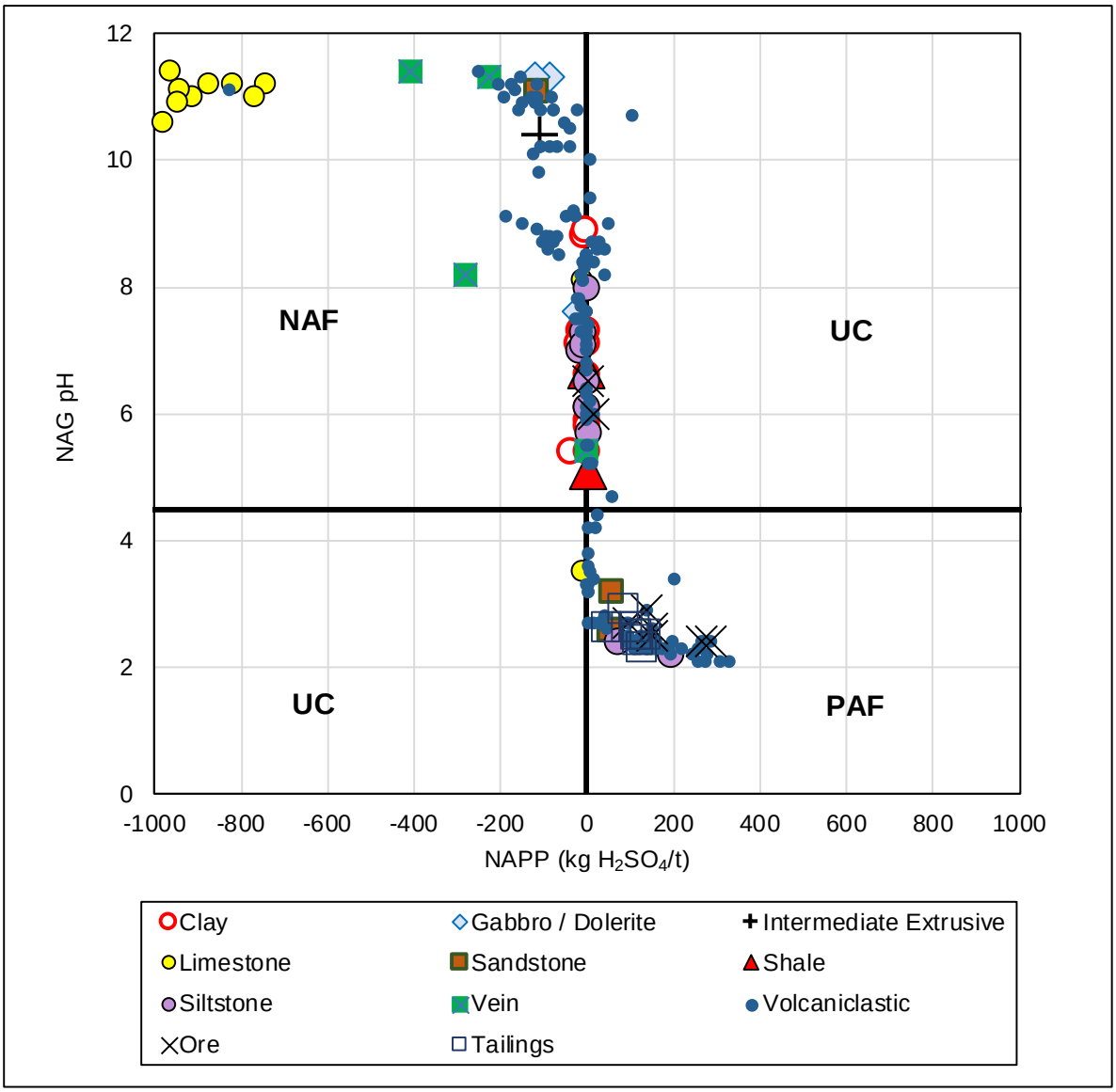


Figure 4-12: AMIRA classification plot for Lithological groups

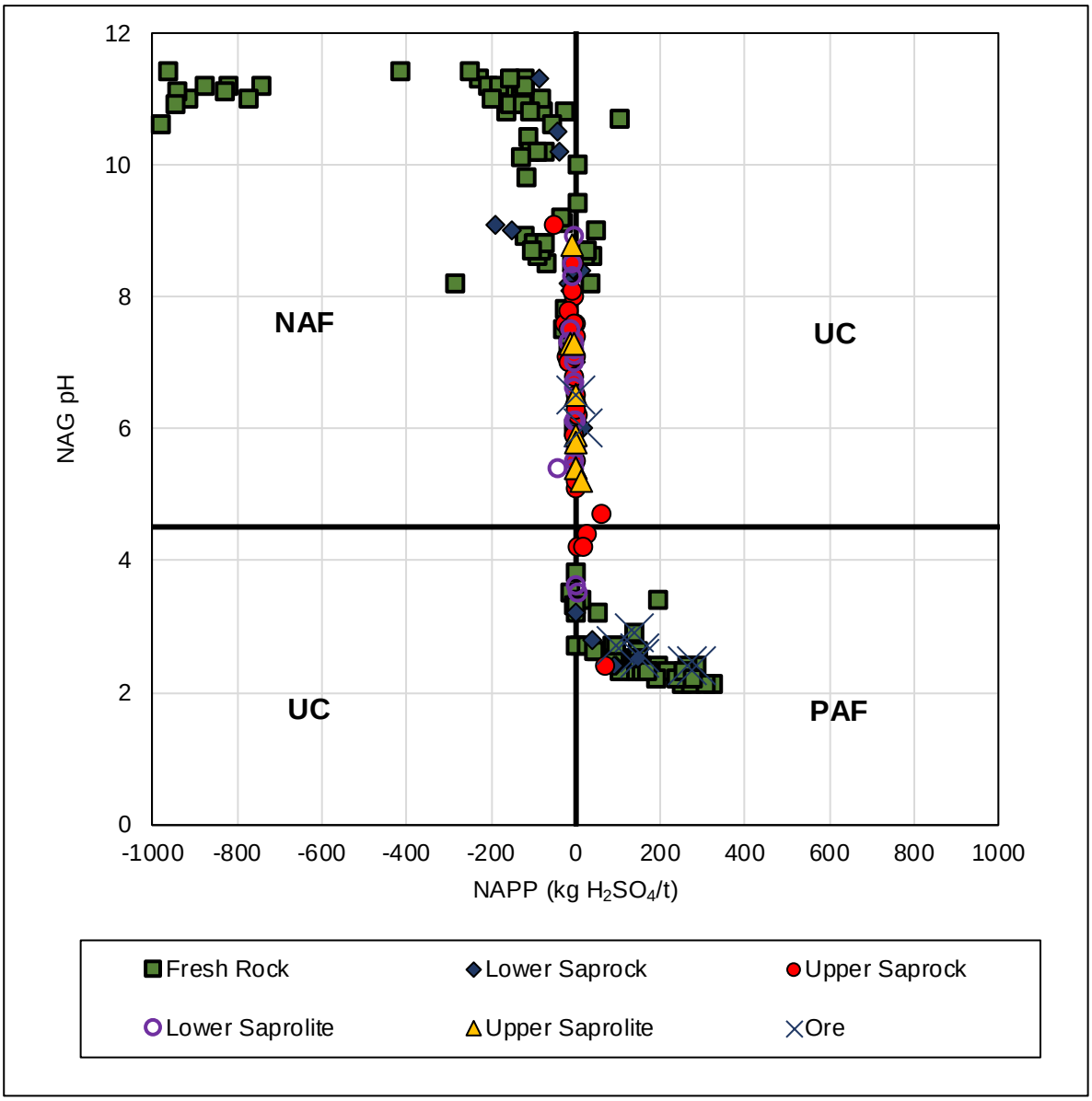


Figure 4-13: AMIRA classification plot for Regolith groups

4.3.2 Neutralisation potential ratio (NPR)

In addition to calculation of NAPP values, ANC and MPA can also be used to calculate the neutralisation potential ratio (where NPR = ANC/MPA), which provides a method of classifying the acid generation potential of samples. A plot of ANC/MPA is shown in Figure 4-14, with samples differentiated by lithological group. The plots include lines to show where ANC/MPA values equal 1 and 2, indicating boundaries between PAF and NAF regions on the plot. ANC/MPA = 2 is used as a nominal boundary value, as samples with ANC/MPA values of 2 or more are commonly considered as unlikely to be problematic with respect to AMD (LPSDP, 2016).

As with the AMIRA classification method, NPR highlights the range of sample classifications within several lithological groups, and all ore and tailings samples classify as PAF.

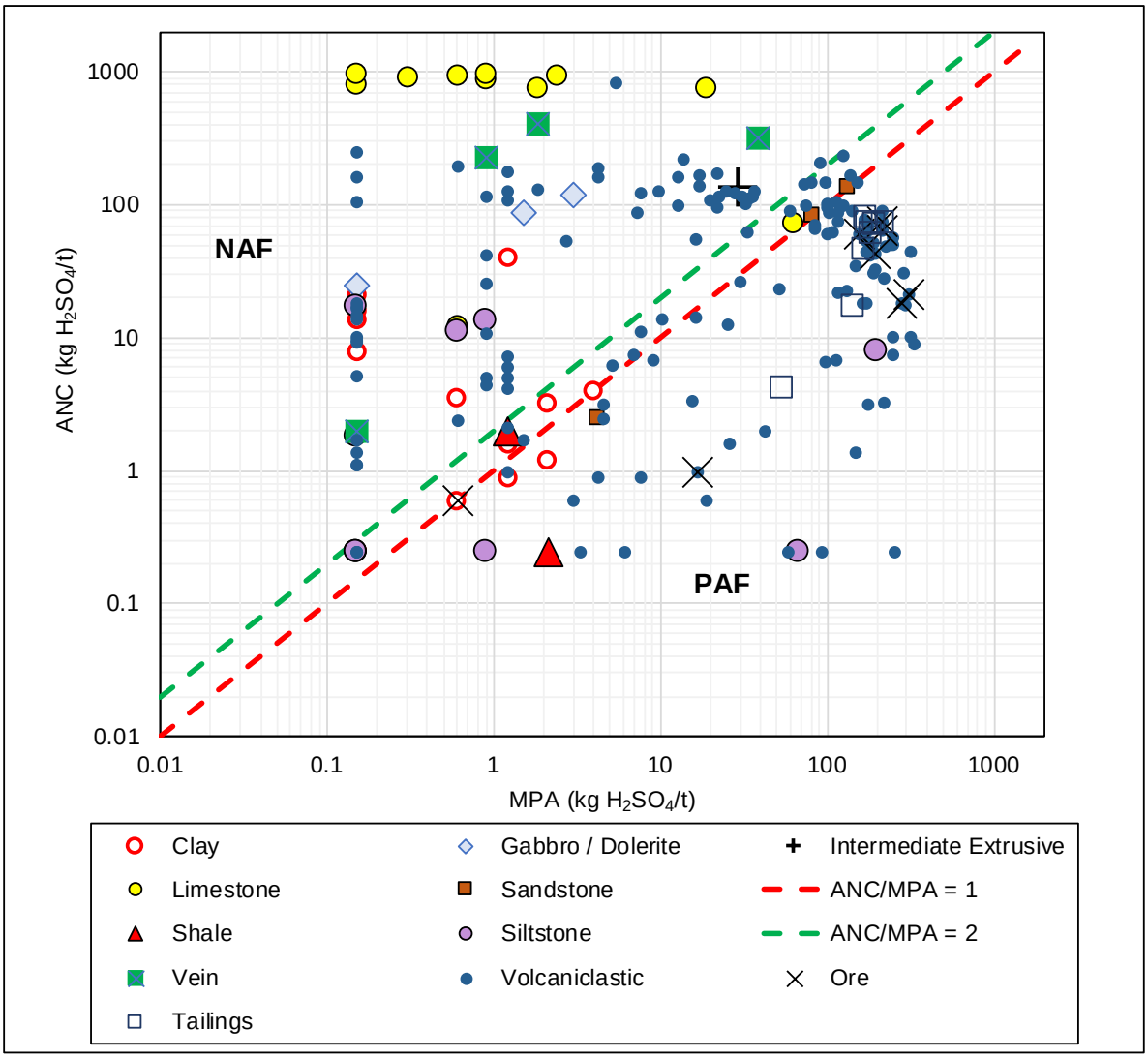


Figure 4-14: Plot of ANC versus MPA for Lithological groups

NPR values were also calculated for the 3,380 composite samples which were submitted for aqua regia digest and multi-element analysis. To facilitate this, Ca derived ANC values were calculated, as outlined in Section 4.2.2 and MPA values were calculated from total sulfur concentrations. Samples were also separated into ore and waste groupings, using a boundary concentration of 0.3 ppm Au. The results are presented as plots of ANC versus MPA in Figure 4-15 and Figure 4-16. The waste composites (2541 samples) show a much greater spread over NAF to PAF classifications, with the ore composites (839 samples) being predominantly PAF.

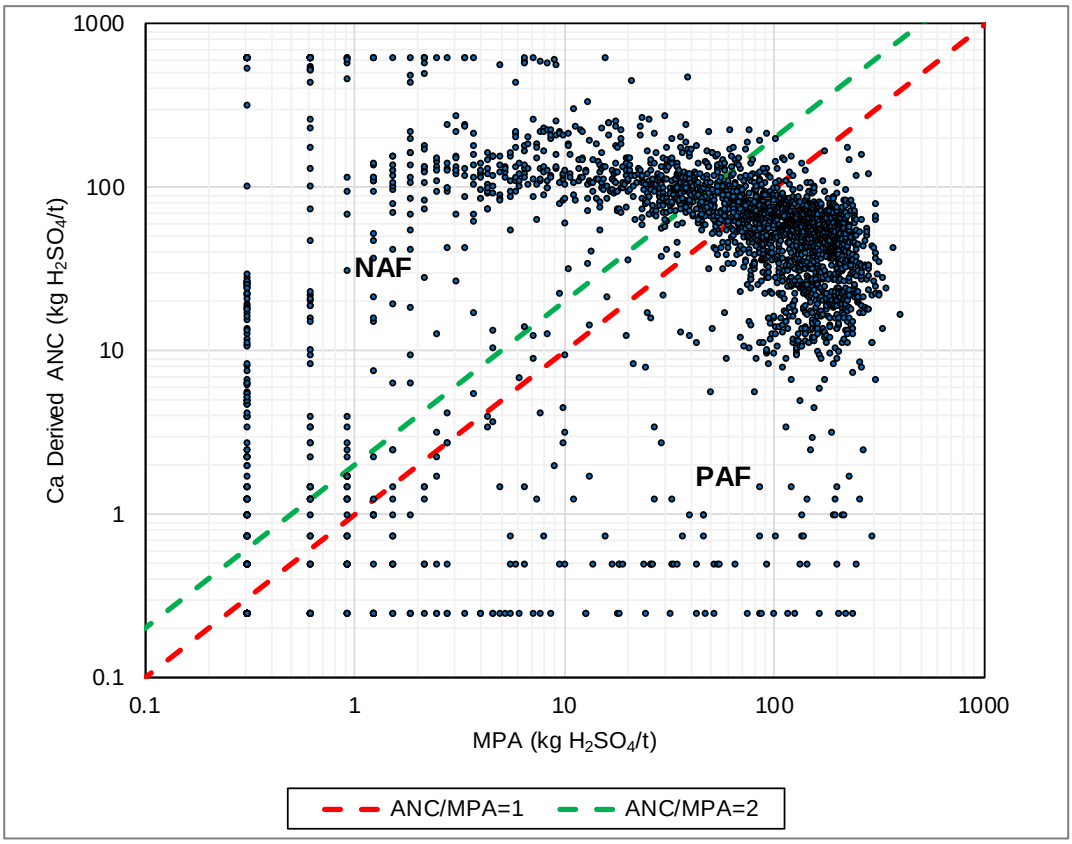


Figure 4-15: Plot of ANC versus MPA for waste composites

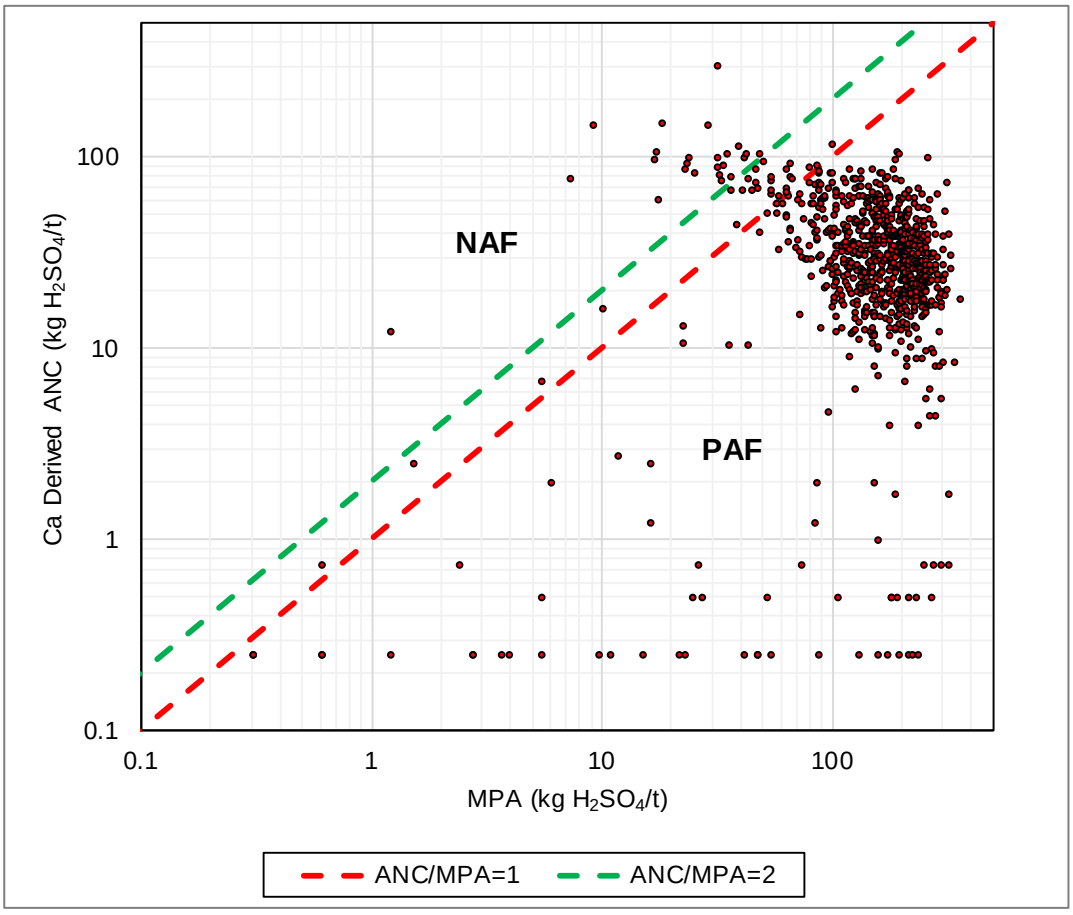


Figure 4-16: Plot of ANC versus MPA for ore composites

4.3.3 Material classification distribution

Sample classifications were processed using Leapfrog to facilitate 3D visualisation. The results are shown in Figure 4-17.

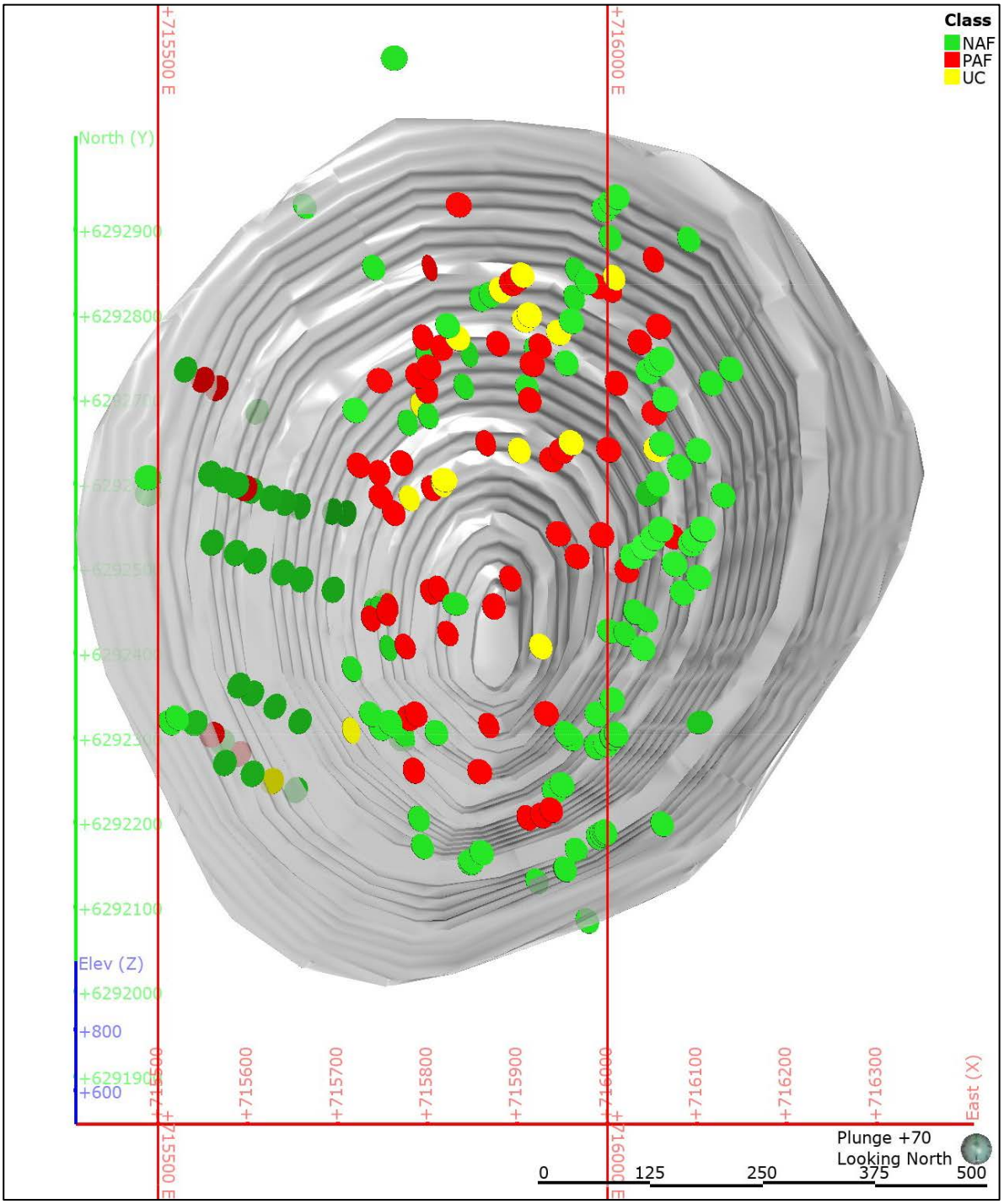


Figure 4-17: Spatial distribution of classifications: SRK samples

Results indicate that PAF samples are predominantly from the central mineralised zone, with NAF more common around the periphery. Inclusion of the multi-element dataset classifications (Figure 4-18) further reinforces the nature of the distribution, in particular on the upper eastern side of the mineralised zone. A range of correlations in the database were assessed against the PAF classifications and a PAF 'shell' was created by Regis based on the SRK classifications along with

other factors such as logged mineralogical occurrences. This shell largely encompasses the mineralised zone, and the majority of PAF samples, and is shown in Figure 4-19.

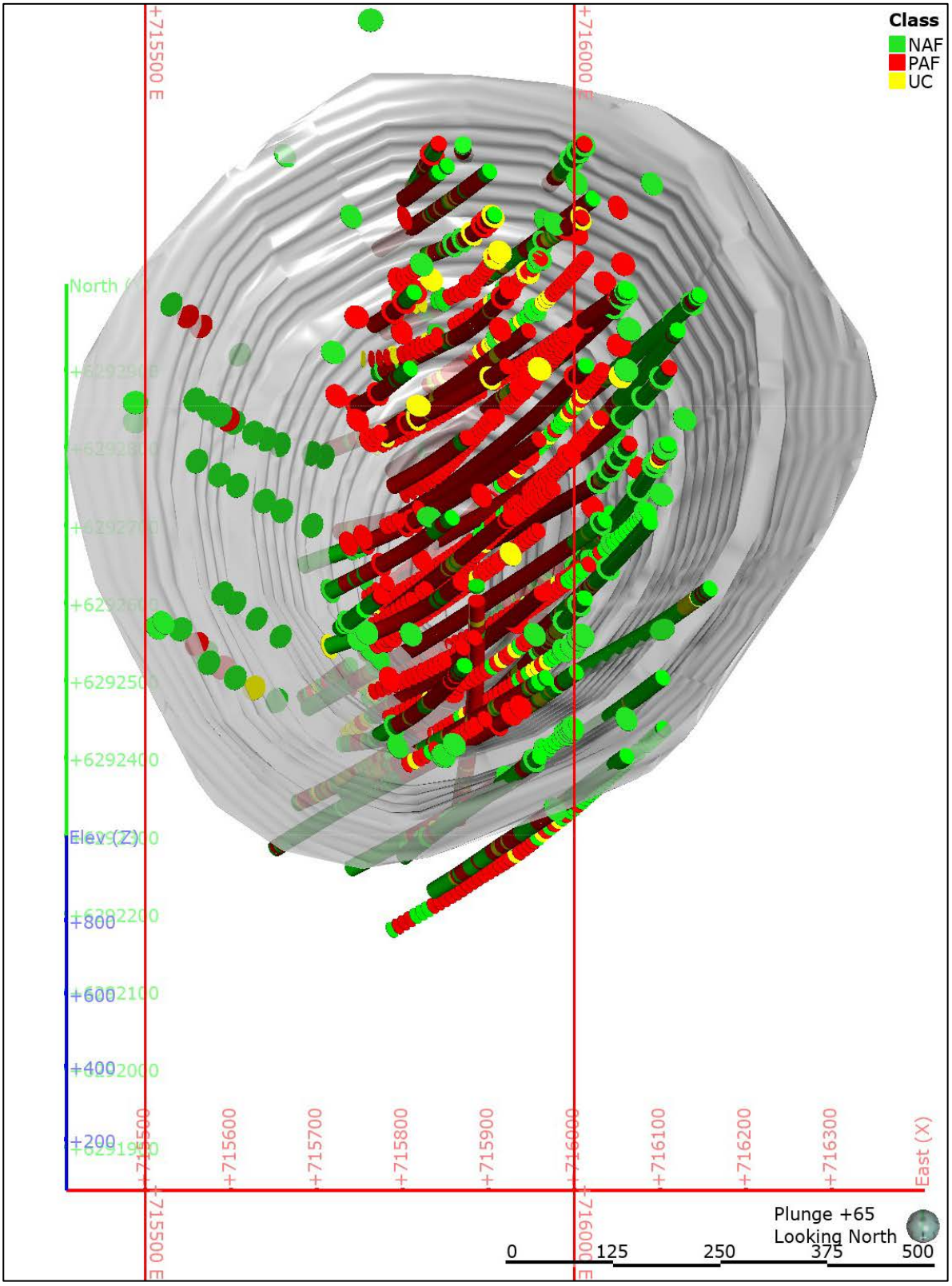


Figure 4-18: Spatial distribution of classifications: All samples

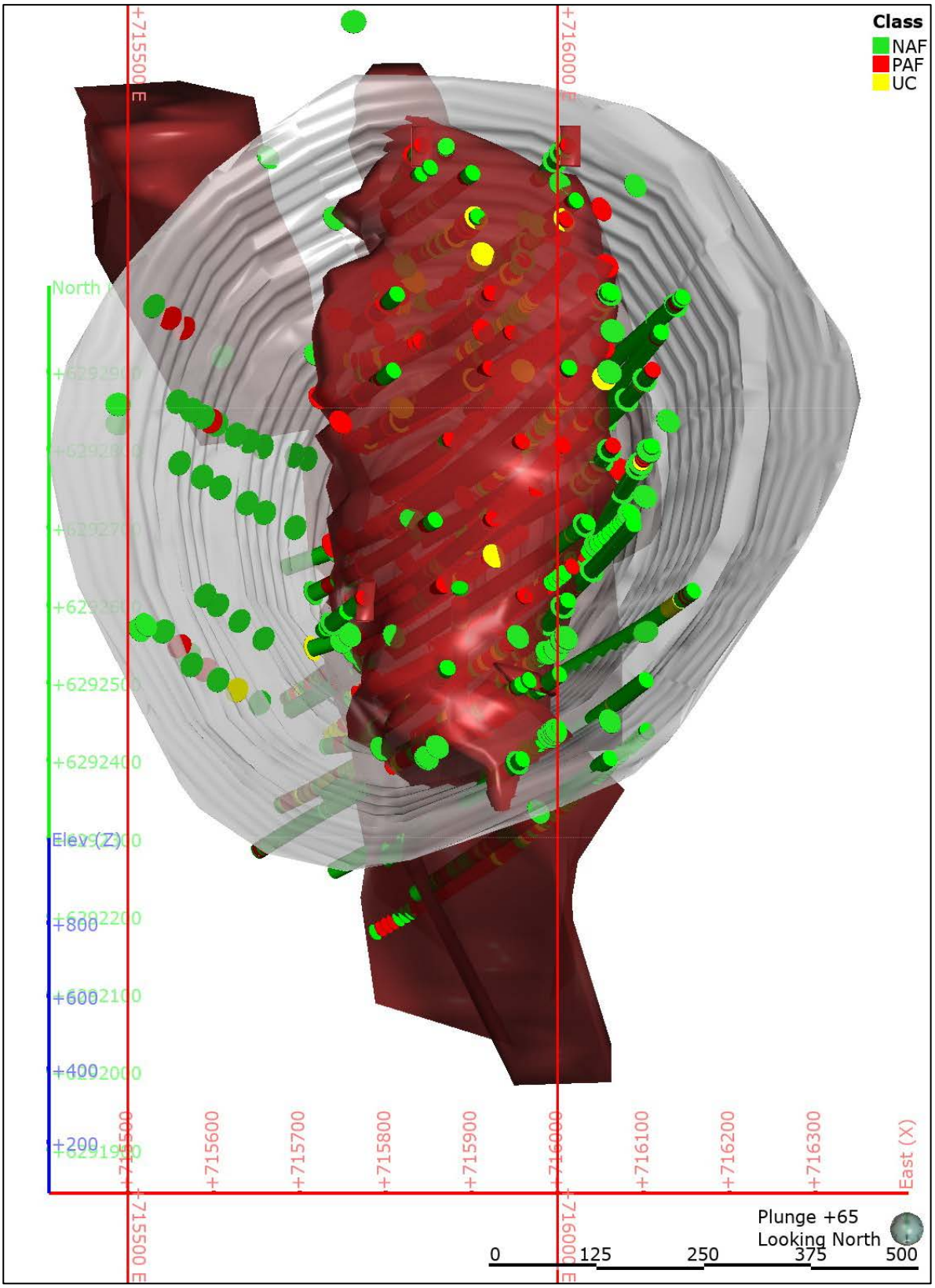


Figure 4-19: Spatial distribution of classifications and PAF 'shell'

4.4 Multi-element composition

Results from multi-element analyses for waste rock and ore samples are presented in Table 4-7 and tailings in Table 4-8 (full results are provided in Appendix D). Results from the composite samples are presented in Table 4-9 (waste) and Table 4-10 (ore).

Table 4-7: Summary statistics for selected multi-element analyses of waste rock and ore

Element	Statistic (mg/kg)					GAI 3 Threshold (mg/kg)	No. of samples enriched
	Minimum	10th percentile	Median	90th percentile	Maximum		
Ag	0.01	0.04	0.17	0.8	68	0.84	20
Al	0.01	0.04	0.17	0.8	68	960000	-
As	<0.1	4.6	30	103	1365	24	112
B	<10	5	5	5	10	120	-
Ba	<10	20	40	194	1140	5160	-
Be	<0.05	0.05	0.09	0.3	2.2	36	-
Bi	<0.01	0.02	0.08	0.5	6.1	2.4	1
Ca	<0.01	0.02	0.9	6.3	>25	360000	-
Cd	<0.01	0.02	0.1	2.5	44	2.16	23
Co	0.3	1.7	23.3	44	383.0	300	2
Cr	<1	2	12	89	424	2400	-
Cu	2	30	179	388	3140	720	12
Fe	0.2	2.1	5.4	8.0	13.5	600000	-
Hg	<0.01	<0.01	0.02	0.3	8.4	0.96	10
Mg	0.01	0.03	1.0	2.1	3.6	252000	-
Mn	5	105	881	3196	27300	10800	3
Mo	<0.05	0.1	1.3	3.7	89.3	24	1
Na	<0.01	0.01	0.01	0.03	0.15	288000	-
Ni	0.2	3.4	7.4	38	248	960	-
Pb	0.5	1.9	7.3	61	4560	192	6
S	<100	<100	4200	64160	110000	6000	-
Sb	0.1	0.3	1.1	2.6	28	6	5
Se	<0.2	0.2	0.7	10.2	82	1.08	80
Sn	<0.2	<0.2	0.1	0.3	1	30	-
Sr	0.7	8.2	76.3	385	1310	4440	-
Tl	<0.02	0.01	0.06	0.3	3.0	12	-
U	<0.05	0.14	0.23	0.8	6.5	36	-
Zn	<2	18	89	1064	5410	840	22

Notes: Total number of samples = 197; Average crustal concentrations from Smith & Huyck,1998; GAI ≥3 shaded in blue.

The multi-element results were from testwork involving a combination of Aqua Regia digest and inductively coupled plasma–mass spectrometry (ICP-MS) determinations. Global abundance index (GAI) values have been calculated for the multi-element dataset. The GAI is a tool which provides a measure of geochemical enrichment relative to average crustal abundance (Bowen, 1979). The GAI (based on a log-2 scale) is expressed in 7 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'. Values that would correspond to a GAI of 3 or more are shaded in blue in the multi-element tables.

The tables show that:

- All groups of samples (waste rock, ore and tailings) showed enrichment of Ag, As, Cd, Cu, Pb, S, Se and Zn.
- For the SRK samples (Table 4-7), As was enriched in the largest number of samples (112 of 197) followed by Se (80 samples). This group of samples was also enriched with Bi, Co, Hg, Mn, Mo and Sb.
- Of the eight ore samples (not distinguished separately in Table 4-7), six were enriched in As, seven in Cu, six in S and all in Se.
- The larger datasets for the composite samples also exhibited enrichment of Ba, Bi, Co, Hg, Mn and Mo in waste (Table 4-9) and Bi, Hg and Mo in ore (Table 4-10).
- The tailings were all enriched in As, S and Se, with the fresh sample also showing enrichment of Ag, Cd and Pb. The year 1-2 tailings composite (MCPTST-01) was enriched in the largest number of elements (Ag, As, Cd, Cu, S, Se and Zn) and Cu enrichment was also recorded in Years 3–4, 7–8 and 9–10 tailings composites.

Table 4-8: Multi-element analyses of tailings samples

Element	Samples (mg/kg)								GAI 3 Threshold (mg/kg)
	Oxide	Transition	Fresh	MCPTST-					
				01	02	03	04	05	
Ag	0.33	0.45	0.89	0.9	0.46	0.16	0.3	0.24	0.84
Al	8100	20600	11500	20900	18800	20500	15700	17100	960000
As	65	160	138	100	415	63	174	439	24
B	40	30	30	<5	<5	<5	<5	<5	120
Ba	190	30	60	70	71	62	60	54	5160
Be	0.15	0.09	0.06	0.14	0.15	0.13	0.13	0.13	36
Bi	0.45	0.13	0.55	0.29	0.46	0.66	1.32	1.24	2.4
Ca	1200	6400	16600	14000	12400	13500	16300	16600	360000
Cd	0.44	1.2	2.5	10.2	1.15	0.21	0.13	0.13	2.16
Co	6.7	25.6	26	27.8	27.0	25.2	26.8	29.0	300
Cr	39	115	175	267	362	283	251	249	2400
Cu	266	280	635	743	773	663	905	956	720
Fe	67500	66400	70600	75900	74900	75900	78700	89200	600000
Hg	0.06	0.26	0.36	0.59	0.11	0.11	0.07	0.06	0.96
Mg	3400	20000	12200	15400	15600	11300	11000	11500	252000
Mn	148	1710	1840	3228	2620	1671	1778	1838	10800
Mo	2.65	3.83	6.96	3.75	6.07	3.45	4.57	4.42	24
Ni	19	60	90	132	171	127	126	118	960
Pb	19.5	21	209	59.2	31.9	20.0	24.3	23.9	192
S	18300	42800	53200	57000	58100	60900	63100	72300	6000
Sb	2.9	2.1	2.5	1.83	1.97	1.93	2.09	2.19	6
Se	6.4	3	7.5	7.9	9.6	6.1	6.8	7.5	1.08
Sn	<0.2	0.2	0.4	0.4	0.3	0.3	0.5	0.3	30
Sr	50	56	150	161	152	126	176	173	4440
Tl	0.12	0.13	0.11	0.23	0.19	0.25	0.18	0.17	12
U	0.23	0.19	0.22	0.34	0.32	0.28	0.26	0.27	36
Zn	63	394	707	2354	366	104	95	85	840

Notes: Average crustal concentrations from Smith & Huyck,1998; GAI ≥ 3 shaded in blue.

Table 4-9: Summary statistics for selected multi-element analyses of waste rock composites

Element	Statistic					GAI 3 Threshold (mg/kg)
	Minimum	10th percentile	Median	90th percentile	Maximum	
Ag	0.005	0.06	0.26	1.46	285	0.84
Al	400	7300	17700	27900	58800	960000
As	0.7	9.7	40.9	172	4740	24
B	5	5	10	10	10	120
Ba	10	40	70	160	8900	5160
Be	0.025	0.07	0.11	0.25	14.4	36
Bi	0.005	0.02	0.14	0.55	5.74	2.4
Ca	0.01	600	22800	54100	250000	360000
Cd	0.005	0.02	0.11	3.67	232	2.16
Co	0.2	13.9	24.7	35.9	694	300
Cr	0.5	1	2	35	507	2400
Cu	0.9	69.5	207	510	7380	720
Fe	900	42800	59300	74000	221000	600000
Hg	0.005	0.01	0.02	0.5	52.8	0.96
Mg	100	1600	14900	23800	69100	252000
Mn	5	299	1290	3580	50000	10800
Mo	0.025	0.32	1.37	3.3	50.5	24
Na	0.005	100	200	400	800	288000
Ni	0.1	4.5	6.4	24.1	430	960
Pb	1.2	3.5	13	115.5	26100	192
S	100	300	25800	66000	130500	6000
Sb	0.05	0.57	1.25	3.24	398	6
Se	0.1	0.4	2.2	12.3	74.6	1.08
Sn	0.1	0.1	0.2	0.2	1.4	30
Sr	0.7	32.2	156.5	351	1070	4440
Tl	0.01	0.03	0.09	0.31	4.6	12
U	0.05	0.14	0.21	0.57	8.82	36
Zn	3	25	96	1160	79900	840

Notes: Total number of samples = 2541; Average crustal concentrations from Smith & Huyck,1998; GAI ≥ 3 shaded in blue.

Table 4-10: Summary statistics for selected multi-element analyses of ore composites

Element	Statistic					GAI 3 Threshold (mg/kg)
	Minimum	10th percentile	Median	90th percentile	Maximum	
Ag	0.01	0.15	0.46	2.47	338	0.84
Al	2700	6600	14800	23820	42600	960000
As	0.8	26.0	53.3	196	2020	24
B	5	5	10	10	10	120
Ba	10	30	70	120	2330	5160
Be	0.025	0.05	0.07	0.12	0.67	36
Bi	0.01	0.12	0.38	0.9	5.66	2.4
Ca	0.01	3880	11800	26920	122500	360000
Cd	0.005	0.02	0.08	2.6	407	2.16
Co	0.2	17.1	22.9	28.7	65.4	300
Cr	0.5	1	2	7	454	2400
Cu	21.5	154	430	1446	5930	720
Fe	25500	55400	70900	87240	115500	600000
Hg	0.005	0.02	0.04	0.34	64	0.96
Mg	200	3780	13200	22920	45200	252000
Mn	13	516	1670	3300	6760	10800
Mo	0.16	1.0	1.5	3.3	50	24
Na	0.005	100	100	300	700	288000
Ni	0.4	3.9	5.3	8	136	960
Pb	2.3	7.1	18.6	64.3	38700	192
S	100	20780	54900	83400	119000	6000
Sb	0.26	0.9	1.44	2.66	722	6
Se	0.3	1.8	6.8	15.4	48.8	1.08
Sn	0.1	0.1	0.2	0.2	0.4	30
Sr	1.9	42	131	258	552	4440
Tl	0.01	0.05	0.14	0.27	2.66	12
U	0.07	0.14	0.2	0.27	11.55	36
Zn	3	45	88	545	122000	840

Notes: Total number of samples = 839; Average crustal concentrations from Smith & Huyck,1998; GAI ≥ 3 shaded in blue.

4.5 Shake flask extraction (SFE) results

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

Leach tests were carried out on 26 waste rock, one ore and three tailings samples and were conducted at a 1:3 solid to liquid ratio with a 24-hour contact time (during which the sample was tumbled). Results are provided in Table 4-11 and Table 4-12 (full results are provided in in Appendix E). For reference purposes only, the ANZECC (2000) livestock drinking water guideline values are also listed. The laboratory results cannot be used directly to represent 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. Thus, while comparison with the guidelines may help identify some 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.

Table 4-11: Leach test results for key parameters in waste rock and ore samples

Analyte	Units	Lithology (number of samples)							Stock Water Value
		Clay (1)	Gabbro (1)	Limestone (3) - median	Sandstone (1)	Siltstone (3) - median	Volcaniclastic (17) - median	Ore (1)	
pH	-	7.57	9.76	8.29	8.04	7.67	7.54	6.86	
EC	µS/cm	122	171	99	378	177	439	1260	
Alkalinity	mg $CaCO_3$/L	21	51	45	68	20	37	84	
Acidity		2	<1	<1	<1	1	5	34	
SO_4	mg/L	13	31	<1	142	14	124	660	1000
Cl	mg/L	11	20	6	47	8	6	4	
F	mg/L	0.6	0.3	0.2	0.6	0.5	0.2	<0.1	
Ag	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Al	mg/L	0.09	0.06	0.27	0.2	0.06	0.05	<0.01	5
As	mg/L	<0.001	0.043	0.002	0.004	0.001	0.001	<0.001	0.5
B	mg/L	0.09	0.07	0.08	0.09	0.1	<0.05	0.07	
Ba	mg/L	0.6	0.4	0.5	0.5	0.5	0.03	0.5	
Be	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Bi	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Ca	mg/L	2	3	8	30	10	43	275	
Cd	mg/L	0.0002	<0.0001	0.0002	0.0002	0.0002	0.0001	0.0002	0.01
Co	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	1
Cr	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	1
Cu	mg/L	0.004	<0.001	<0.001	<0.001	0.002	0.003	0.002	0.4
Fe	mg/L	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Hg	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
K	mg/L	4	30	2	47	7	10	18	
Mg	mg/L	3	0.5	2	3	6	13	5	
Mn	mg/L	0.006	0.001	<0.001	0.009	0.027	1.03	0.02	
Mo	mg/L	<0.001	0.001	<0.001	0.004	<0.001	<0.001	<0.001	0.15
Na	mg/L	13	12	5	10	12	6	7	
Ni	mg/L	<0.001	<0.001	<0.001	0.002	<0.001	0.002	<0.001	1
Pb	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.1
Sb	mg/L	<0.001	0.035	0.002	0.047	<0.001	0.001	<0.001	
Se	mg/L	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.02
Sn	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Sr	mg/L	0.016	0.035	0.11	0.111	0.036	0.117	0.131	
Tl	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002
Ti	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
U	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.2
V	mg/L	<0.01	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	
Zn	mg/L	0.042	0.011	0.02	0.073	0.109	0.062	0.322	20

Notes:
Median values shown for lithologies with more than one sample (limestone, siltstone and volcaniclastic); Concentrations higher than stock water value (ANZECC, 2000) shaded blue.

Table 4-12: Leach test results for tailings samples

Analyte	Units	Tailings			Stock Water Value
		Oxide	Transition	Fresh	
pH	-	6.8	7.7	7.5	
EC	µS/cm	45	91	565	
SO_4	mg/L	7	23	235	1000
Cl	mg/L	2	3	16	
F	mg/L	0.3	<0.1	<0.1	
Ag	mg/L	<0.001	<0.001	<0.001	
Al	mg/L	0.23	0.49	<0.01	5
As	mg/L	0.011	0.01	<0.001	0.5
B	mg/L	<0.05	<0.05	<0.05	
Ba	mg/L	0.002	<0.001	0.025	
Be	mg/L	<0.001	<0.001	<0.001	
Bi	mg/L	<0.001	<0.001	<0.001	
Ca	mg/L	3	13	99	
Cd	mg/L	<0.0001	<0.0001	0.0002	0.01
Co	mg/L	<0.001	<0.001	0.002	1
Cr	mg/L	<0.001	<0.001	<0.001	1
Cu	mg/L	<0.001	<0.001	<0.001	0.4
Fe	mg/L	0.06	<0.05	<0.05	
Hg	mg/L	<0.0001	<0.0001	<0.0001	
K	mg/L	1	1	1	
Mg	mg/L	<1	<1	7	
Mn	mg/L	<0.001	0.009	2.2	
Mo	mg/L	<0.001	<0.001	<0.001	0.15
Na	mg/L	3	<1	1	
Ni	mg/L	<0.001	<0.001	<0.001	1
Pb	mg/L	<0.001	<0.001	<0.001	0.1
Sb	mg/L	<0.001	0.002	0.002	
Se	mg/L	<0.01	<0.01	<0.01	0.02
Sn	mg/L	<0.001	<0.001	<0.001	
Sr	mg/L	0.002	0.018	0.63	
Tl	mg/L	<0.001	<0.001	<0.001	0.002
Ti	mg/L	<0.01	<0.01	<0.01	
U	mg/L	<0.001	<0.001	<0.001	0.2
V	mg/L	<0.01	<0.01	<0.01	
Zn	mg/L	<0.005	<0.005	<0.005	20

The final pH values obtained were in the range pH 3.5–9.8 for waste rock and pH 6.8–7.7 for tailings. The waste rock samples gave rise to very low (9 µS/cm) to moderately (1,800 µS/cm) saline leachates, with a volcaniclastic sample giving the highest EC. Tailings leachate EC values were <100 µS/cm in the oxide and transition samples and 565 µS/cm in the fresh sample. The leachates from all samples generally contained low concentrations of major ions, with a maximum Ca concentration of 388 mg/L and maximum SO_4 concentration of 901 mg/L, both in volcaniclastic sample MP02731.

Minor/ trace elements were commonly close to or below method detection limits and there were few concentrations which were higher than ANZECC (2000) livestock drinking water concentration guidelines. The only trace element highlighted in Table 4-11 as higher than stock water guidelines is Se in the sandstone sample leachate (MP-WR021 – where Se was 0.03 mg/L compared to the stock water concentration of 0.02 mg/L).

There were additional concentrations higher than the stock water guidelines in individual samples not shown in Table 4-11, as they occurred in lithological groupings where median values are shown in Table 4-11. One volcaniclastic sample produced leachate with pH 3.5 which had concentrations of Al, Co, Ni and Zn which were higher than the stock water levels. There were also individual samples with concentrations of Al (siltstone sample MPWR058), Cd (volcaniclastic sample MP02735) and Se (volcaniclastic sample MP02738) which were higher than the stock water guideline concentrations.

Correlations between elements indicated to be 'enriched' in solid samples and concentrations in leachates were weak, and results suggest that high proportions of most elements were present in a form not readily leachable under the conditions of the tests, i.e. under circum-neutral conditions.

4.5.1 Mild acid shake flask extractions

Mild acid leach SFE tests provide an indication of the potential leachability of elements under acid conditions.

Rough crushed samples were leached using dilute sulfuric acid (pH 4) at a solid: liquid ratio of 1:3 for 24 hours. In the initial stages of the tests, the pH was monitored and adjusted to maintain the pH of the leachates in the target range of between pH 3 and pH 4. Once the solution pH stabilised, the samples were agitated for 24 hours. The liquor of the final solutions was filtered (0.45 μm) and then submitted for analyses.

Four samples were selected, incorporating materials classed as NAF (MP02719 and MP02726), UC (MP02701) and PAF (MP02736). Results from the mild acid the leach extraction tests are provided in Table 4-13. The samples selected were also submitted for deionised water SFE tests and comparisons in leachate compositions are discussed below.

The final pH in the mild acid leach tests ranged from pH 4.2 to 6.4, compared to pH 4.9 to 8.1 in the equivalent de-ionised water leach tests (Figure 4-20).

Following the mild acid leach, the final pH for three samples (pH 4.2-4.6) was just above the target range, pH 3–4. The final leachate pH of sample MP02719 (volcaniclastic undifferentiated) was slightly higher (pH 6.4) and is considered due to higher neutralisation capacity offered by the sample (167 kg H_2SO_4/t). The higher concentrations of calcium (499 mg/L), magnesium (111 mg/L) and strontium (4.34 mg/L; chemically analogous to calcium) present in the mild acid leach extract, compared to the equivalent de-ionised water extraction, suggest the dissolution of carbonate content within the sample.

As was expected, the dissolved concentrations of certain elements were observed to be higher under more acidic conditions (e.g. Al, K, Mg, Ca, As, Ba, Be, Cd, Co, Cu, Mn, Ni, Rb, Sr, Y, Zn). For example, Figure 4-21, Figure 4-22 and Figure 4-23 compare the dissolved Co, Ni and Zn concentrations in standard de-ionised water leach tests with those observed in the equivalent mild acid leach tests. Higher dissolved concentrations under acidic conditions likely reflect increased mineral solubility, perhaps combined with desorption from mineral surfaces (sorption of many metals is weaker at acid pH). Note that in the case of sample MP02701 – the pH of both the de-ionised leach and the mild acid leach was similarly acidic (pH 4.9 and pH 4.2, respectively).

The acid leach of samples MP02701 and MP02736 resulted in the lowest two end solution pH values of pH 4.2 and pH 4.3, respectively. Comparatively high concentrations of aluminium were observed

in the acid leach solutions from these samples, which may be due to increased dissolution of aluminium silicates at this low pH. A comparatively high concentration of iron was observed from the leach solution of MP02736 (pH 4.3), but not in the solution from MP02701 (pH 4.2).

Table 4-13: Selected mild acid leachate results for volcaniclastic samples

Analyte	Units	Sample				Stock water value
		MP02701	MP02719	MP02726	MP02736	
pH	-	4.17	6.36	4.54	4.25	
EC	µS/cm	303	4260	272	377	
Alkalinity	mg $CaCO_3$/L	1	87	1	1	
Acidity		14	60	10	10	
Cl	mg/L	3	2	11	6	
Ag	mg/L	<0.001	<0.001	<0.001	<0.001	
Al	mg/L	0.3	0.02	0.02	0.2	5
As	mg/L	0.006	8.3	0.003	0.002	0.5
B	mg/L	<0.05	<0.05	<0.05	<0.05	
Ba	mg/L	0.12	0.12	0.19	0.07	
Be	mg/L	<0.001	<0.001	<0.001	<0.001	
Bi	mg/L	<0.001	<0.001	<0.001	<0.001	
Ca	mg/L	14	499	9	6	
Cd	mg/L	0.0004	0.004	0.002	0.001	0.01
Co	mg/L	0.1	0.2	0.15	0.01	1
Cr	mg/L	<0.001	<0.001	<0.001	<0.001	1
Cu	mg/L	0.04	<0.001	0.03	0.02	0.4
Fe	mg/L	<0.05	<0.05	<0.05	0.4	
Hg	mg/L	<0.001	<0.001	<0.001	<0.001	
K	mg/L	22	64	7	13	
Mg	mg/L	11	111	15	17	
Mn	mg/L	4.8	1370	0.8	0.4	
Mo	mg/L	<0.001	0.006	<0.001	<0.001	0.15
Na	mg/L	5	3	19	34	
Ni	mg/L	0.04	0.1	0.03	0.02	1
Pb	mg/L	<0.001	0.27	<0.001	<0.001	0.1
Sb	mg/L	<0.001	0.06	<0.001	<0.001	
Se	mg/L	<0.01	<0.01	<0.01	<0.01	0.02
Sn	mg/L	0.001	0.001	0.001	0.001	
Sr	mg/L	0.14	4.3	0.22	0.08	
Tl	mg/L	<0.001	<0.001	<0.001	<0.001	0.002
Ti	mg/L	<0.01	<0.01	<0.01	<0.01	
U	mg/L	<0.001	<0.001	<0.001	<0.001	0.2
V	mg/L	<0.01	<0.01	<0.01	<0.01	
Zn	mg/L	0.15	1.4	0.3	0.2	20

Notes: Concentrations higher than stock water value (ANZECC, 2000) shaded blue; SO4 is not included in the analytical suite since this was present in H_2SO_4 used to acidify the samples.

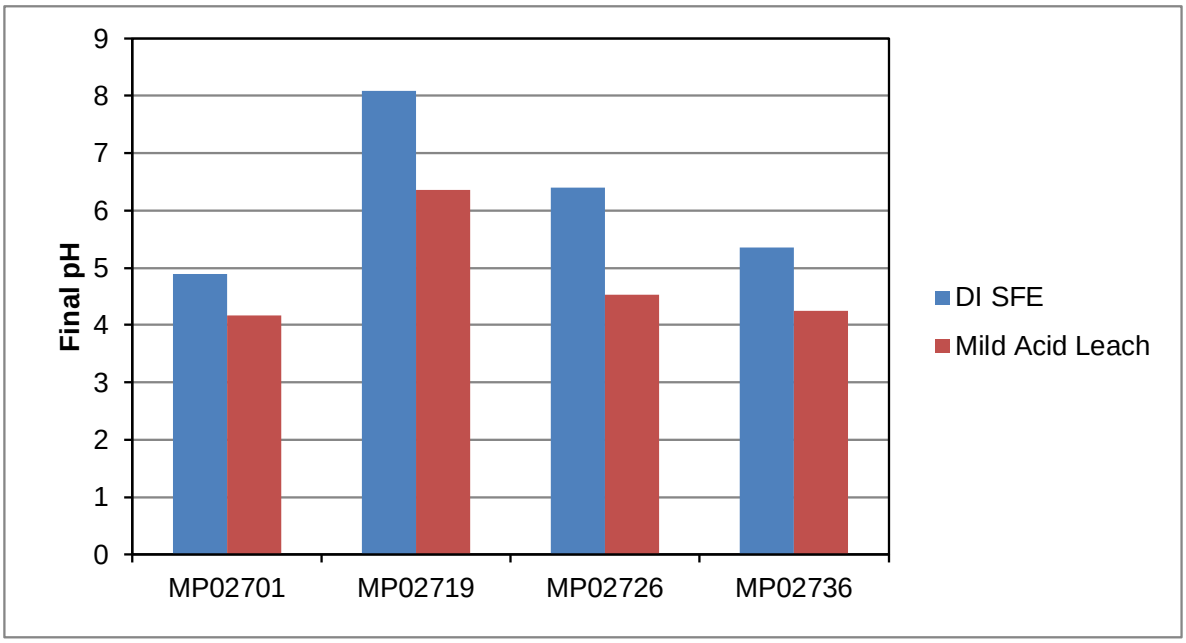


Figure 4-20: Shake Flask Extraction final pH values

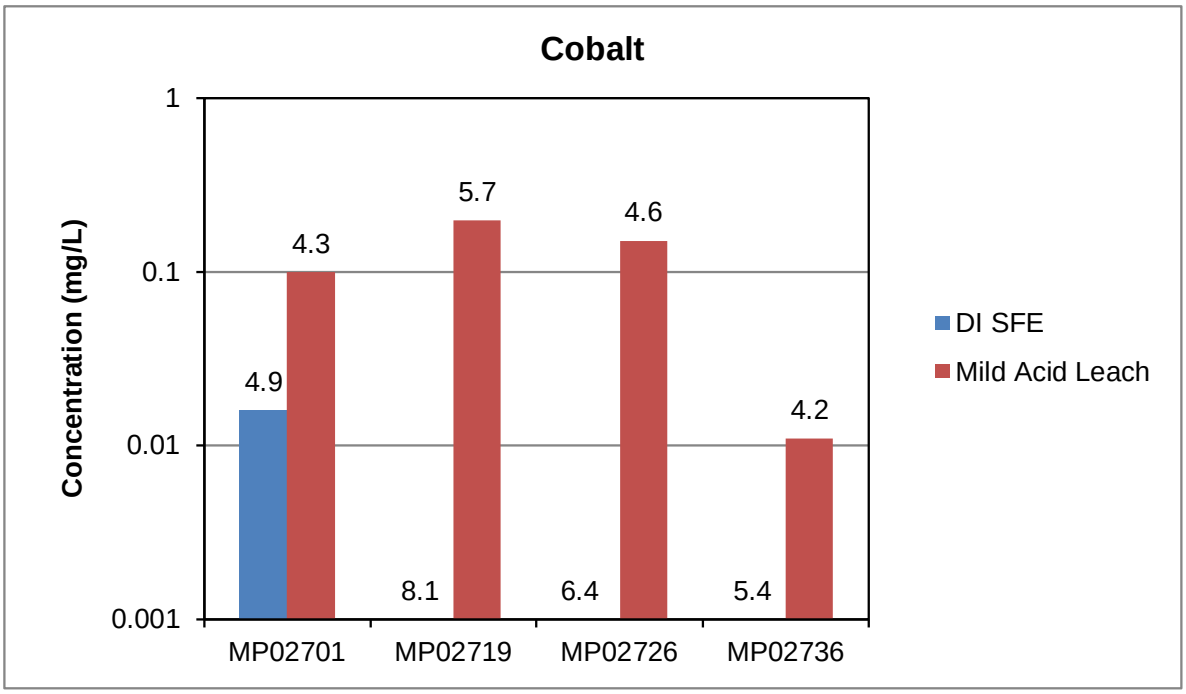


Figure 4-21: Dissolved cobalt concentrations in de-ionised water and mild acid leach tests

Notes: The DI SFE Co concentrations for samples MP02719, MP02726 and MP02736 were reported below the detection limit (<0.001 mg/L). The final pH values of the leachate solutions are given above the data columns.

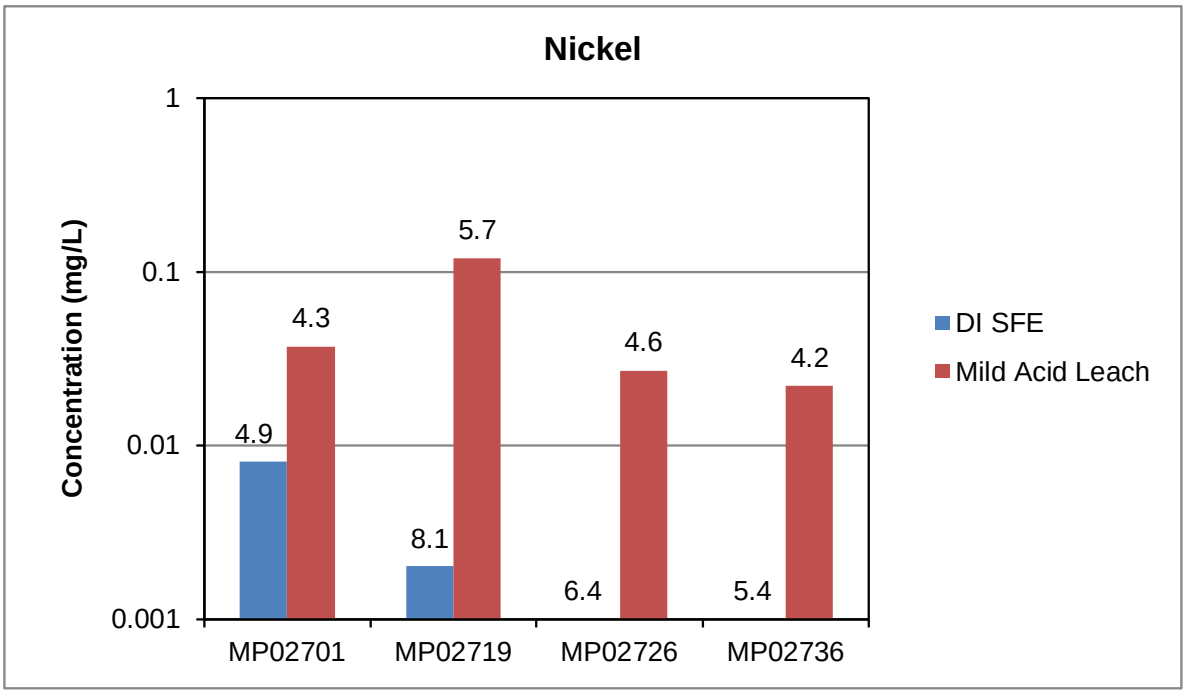


Figure 4-22: Dissolved nickel concentrations in de-ionised water and mild acid leach tests

Note: The DI SFE Ni concentrations for samples MP02726 and MP02736 were reported below the detection limit (<0.001 mg/L). The final pH values of the leachate solutions are given above the data columns.

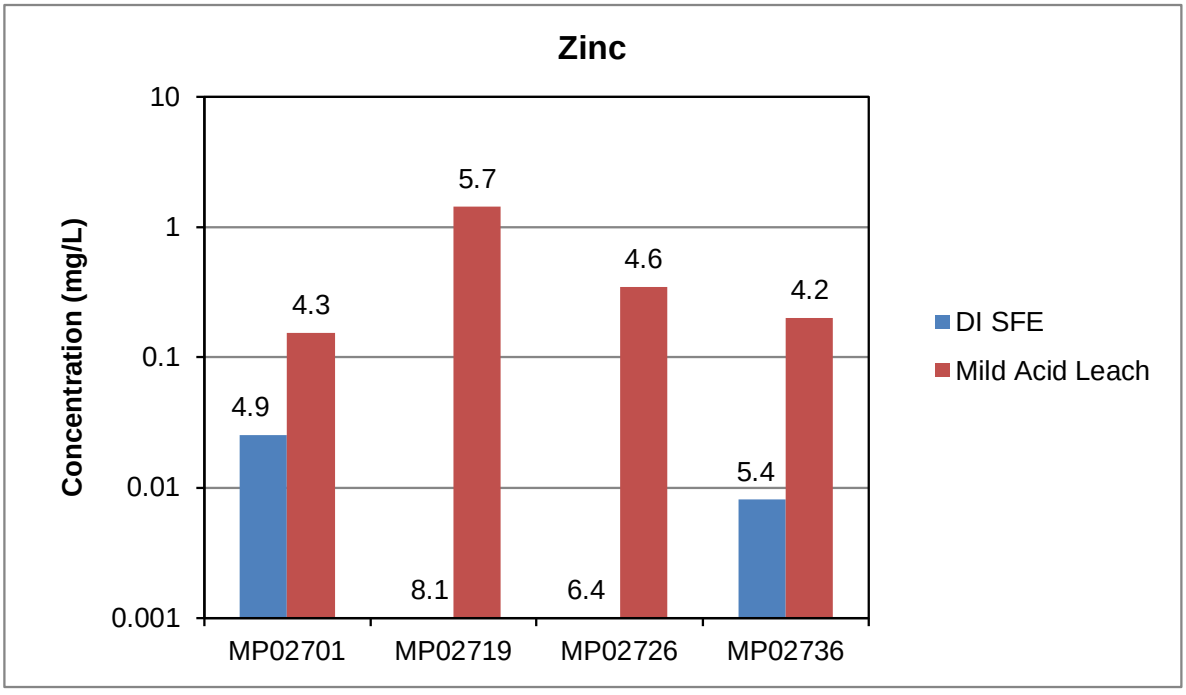


Figure 4-23: Dissolved zinc concentrations in de-ionised water and mild acid leach tests

Note: The final pH values of the leachate solutions are given above the data columns.

Mild acid leach testing has shown that the leachability of a number of elements (i.e. Al, K, Mg, Ca, As, Ba, Cd, Co, Cu, Mn, Ni, Rb, Sr, Y, Zn) will be greater under acidic conditions. This likely reflects increased dissolution of minerals containing these elements in response to acidic conditions.

4.6 Tailings liquid fraction

Results for analysis of the liquid fractions of tailings samples are presented in Table 4-14. The samples were generated at different times, with the Batch 1 samples (oxide/ transition/ fresh samples) being produced while cyanide detoxification trials were in process. The MCPTST samples, were generated after finalisation of the cyanide detoxification process.

Table 4-14: Multi-element results for liquid fraction of tailings samples

Analyte	UNITS	Oxide	Transition	Fresh	MCPTST-					Stock Water Value
					01	02	03	04	05	
pH	NONE	n.d.	n.d.	n.d.	8.2	8.4	8.3	7.9	8.3	
EC	µS/cm	n.d.	n.d.	n.d.	4080	9490	4050	4370	4330	
Total Alkalinity	mg $CaCO_3$/L	n.d.	n.d.	n.d.	195	412	156	149	178	
Acidity		n.d.	n.d.	n.d.	4.2	<0.2	<0.2	9.6	<0.2	
SO_4	mg/L	258	396	628	2201	5267	2318	2680	2246	1000
Ag	µg/L	70	60	70	0.2	0.2	0.2	<0.1	<0.1	
Al	mg/L	4.9	7.1	2	0.3	0.5	0.3	0.4	0.3	5
As	µg/L	72	89	610	10	15	2	3	76	500
B	mg/L	<0.05	<0.05	<0.05	<0.1	0.1	<0.1	<0.1	<0.1	5
Ba	µg/L	6	5	11	89	132	88	82	77	
Be	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	
Bi	µg/L	<1	<1	<1	<0.05	0.13	<0.05	<0.05	0.06	
Ca	mg/L	2	5	12	496	497	505	631	466	
Cd	µg/L	50	23	21	<0.2	<0.2	<0.2	<0.2	<0.2	10
Cl	mg/L	446	436	609	305	1321	312	353	335	
Co	µg/L	50	60	4	63	163	41	48	45	1000
Cr	mg/L	0.005	<0.001	<0.001	<0.1	<0.1	<0.1	<0.1	<0.1	1
Cu	mg/L	76.6	59.9	57.2	<0.1	<0.1	<0.1	<0.1	0.1	0.4
F	mg/L	n.d.	n.d.	n.d.	2.2	3.9	1.1	1.0	1.1	2
Fe	mg/L	0.5	1	4	<0.1	<0.1	0.7	<0.1	<0.1	
Hg	µg/L	n.d.	n.d.	n.d.	<1	<1	<1	<1	<1	2
K	mg/L	5	17	14	78	304	74	98	110	
Mg	mg/L	<1	<1	1	29	142	26	41	33	
Mn	mg/L	0.009	0.006	0.009	0.3	0.4	0.4	0.5	0.3	
Mo	µg/L	17	17	22	13	39	9.1	11	10	150
Na	mg/L	365	436	440	698	2465	700	716	714	
Ni	mg/L	0.23	0.16	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	1
Pb	µg/L	16	11	3	<5	<5	<5	<5	<5	100
Sb	µg/L	20	30	100	6.3	19	6.6	4.5	8.3	
Se	µg/L	40	40	100	38	252	16	60	37	20
Sn	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	
Sr	µg/L	70	80	240	3563	8590	4196	4919	3804	
Th	µg/L	<1	<1	<1	<0.05	<0.05	<0.05	<0.05	<0.05	
Ti	mg/L	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
Tl	µg/L	<1	<1	<1	0.1	0.1	<0.1	<0.1	<0.1	
U	µg/L	<1	<1	<1	2.4	2.3	0.7	0.4	0.4	200
V	mg/L	0.04	0.04	0.02	<0.1	<0.1	<0.1	<0.1	<0.1	
Zn	mg/L	4.5	7.3	11.4	<0.1	<0.1	<0.1	<0.1	<0.1	20
CN-Tot	mg/L	221	236	268	0.6	0.6	1.6	0.8	1.0	
CN-WAD	mg/L	220	234	256	0.6	0.6	<0.5	0.8	<0.5	

Note: n.d. signifies that these analytes were not determined

In the Batch 1 (oxide/ transition/ fresh) samples, the concentrations of Cd, Cu and Se are higher than the stock water concentration limits. Additionally, Al is higher in the transition sample and As in the fresh sample. The most significant concentrations are for Cu, being in the range 57.2–76.6 mg/L in comparison to a stock water limit of 0.4 mg/L. With total cyanide concentrations up to 268 mg/L, it is likely that Cu is complexed with cyanide.

The Batch 2 (MCPTST) samples have undergone cyanide detoxification and demonstrate the value of incorporation of this into the McPhillamys process circuit. Batch 2 samples do not show elevated Cu, with concentrations being at or below the limit of detection. In the Batch 2 samples, only SO_4, F and Se are higher than the stock water limits.

4.7 Sodicity and cation exchange capacity (CEC)

Exchangeable sodium and CEC were determined on eight samples to provide an indication of the likelihood of materials to be dispersive in the waste dump environment. There are currently no guidelines available that classify the salinity of waste rock based on EC or salinity measurements. For this reason, guidelines applicable to the classification of soils have been used as an alternative to provide an indication of waste rock salinity. A summary of the results is provided in Table 4-15.

Table 4-15: Salinity, CEC and Sodicity Results

Sample ID	Lithology	Depth (m)		pH	EC	Cation Exchange Capacity	Exchangeable Sodium
		From	To	pH Unit	µS/cm	meq/100g	%
MP02706	Volcaniclastic undifferentiated	34	35	8.2	364	17.8	<0.1
MP02711	Volcaniclastic matrix supported	120	121	7.5	1590	14.1	<0.1
MP02713	Clayey sand	3	4	5	160	5.4	5.4
MP02722	Volcaniclastic fine grained tuff	70	71	6.9	1400	5.5	<0.1
MP02736	Volcaniclastic matrix supported	4	5	4.8	189	3.5	3
MP02738	Volcaniclastic fine grained tuff	35	36	4.6	1350	0.7	<0.1
MP02746	Volcaniclastic fine grained tuff	220	221	8.9	188	20.7	<0.1
MP02749	Volcaniclastic matrix supported	106	107	8.6	134	14.7	<0.1

CEC is a measure of a soils ability to adsorb and exchange cations which are held by the negatively charged clay and organic matter via electrostatic force. The CEC may be used as an indicator of the potential available nutrient reserve in the soil and inherent fertility.

The CEC of the soil samples ranges between 0.7 meq/100 g and 21 meq/100 g, reflecting variable CEC values ranging from typical sand (1–5 meq/100g, with low CEC) through to clay loam soils (15–30 meq/100g, with good CEC).

Highly sodic soils are prone to rapid 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 gullying in the waste dumps, which can affect their long-term stability and sustainability.

Paste testing, and results from leach testing, suggest that the samples contained variable salinity; paste EC ranged from 41 µS/cm to 4190 µS/cm, with a median of 260 µS/cm.

The exchangeable sodium percentage (ESP) can be used as an indication of the susceptibility of soil to dispersion. Soils with an ESP greater than 6% are generally classified as “sodic” and >15% as strongly sodic (Northcote and Skene, 1972). ESP testwork indicated values ranging between <0.1% and 5.4% (with a median value <0.1%). This suggests that the material is not sodic.

4.8 Kinetic testwork

Kinetic column testwork took place on the following seven samples:

- MP27008 – volcaniclastic undifferentiated (v)
- MP27042 – volcaniclastic conglomerate (vc)
- MP02702 and MP02727 – volcaniclastic fine-grained [tuff] (vt), <2mm
- MP02710, MP26986 and MP27021 – volcaniclastic matrix supported [lapilli] (vm), 2–64 mm.

The test procedure is outlined in Section 3.2.2, with the tests operated for periods between 25 and 50 weeks.

4.8.1 Sample properties

Table 4-16 and Table 4-17 provide a summary of sample mineralogy, and results from acid-base account and net acid generating testing.

Table 4-16 shows that pyrite was present in five of the samples, with contents ranging between 0.5 wt% and 15 wt%. Jarosite, a secondary sulfate mineral that can represent a source of stored acidity on dissolution, was present in sample MP27021 (2.8 wt%).

Carbonate, as calcite, was identified in three samples (3.5–7 wt%), dolomite was present in sample MP27042 (6.4 wt%) and the iron-bearing carbonate minerals, siderite and ankerite, were identified in sample MP02702 (each at 3 wt%).

Table 4-17 shows that the samples cover a range of sulfur contents (0.2%–8.1 %) and ANC values (<0.5–107 kg H_2SO_4/t). Testwork indicated that five samples were classed as PAF, one as UC and one as NAF.

Table 4-16: Results of mineralogical analysis for the samples – estimated phase concentrations (wt %)

Mineral Phase	Approx Formula	Group	Estimated phase concentrations (wt%) for sample ID, lithology code and column number						
			MP02702	MP02710	MP02727	MP27008	MP27042	MP26986	MP27021
			vt	vm	vt	v	vc	vm	vm
			1	2	3	4	5	6	7
Pyrite	FeS_2	Sulfide	7	5	0.5		2.5	15	
Jarosite (Na)	$KFe_3^{3+}(SO_4)_2(OH)_6$	Sulfate							2.8
Calcite	$CaCO_3$	Carbonate		7	3.5			3.5	
Dolomite	$(Mg,Ca)(CO_3)_2$						6.4		
Siderite	$FeCO_3$		3						
Ankerite	$Ca(Fe,Mg)(CO_3)_2$		3						
Quartz	SiO_2	Silicates and alumino-silicates	20	16	10.5	18.5	15.4	23.8	3.4
Plagioclase (Albite)	$NaAlSi_3O_8$			24	41		34.4		13.3
Kaolinite	$Al_2Si_2O_5(OH)_4$					21.4			5.6
K-feldspar (Microcline)	$KAlSi_3O_8$		24	0.5	2.5				
Muscovite	$KAl_2(Si_3Al)O_{10}(OH,F)_2$		26	28.5	27	43.4	22.9	32.8	62.7
Chlorite	$(Fe,Al,Mg)_6(Si,Al)_4O_{10}(OH)_8$		13	16.5	10.5		5.1	11	
Goethite	FeO(OH)	Oxides and oxy-hydroxides				9.1			
Rutile	TiO_2							0.8	
Non-diffracting/ unidentified			<5	<5	<5	7.7	13.3	13.2	12.1

Table 4-17: Summary of acid-base accounting and net acid generation data

Sample ID	MP02702	MP02710	MP02727	MP27008	MP27042	MP26986	MP27021
Column ID	1	2	3	4	5	6	7
Lithology	vt	vm	vt	v	vc	vm	vm
Total S (%)	3.8	3.8	0.5	0.2	2.8	8.1	0.6
Sulfide Sulfur (%)	3.7	3.6	0.4	0.1	1.1	8.0	0.4
MPA (kg H_2SO_4/t)	116	115	16.5	6.1	85	246	19.0
AP (Sulfide) (kg H_2SO_4/t)	113	111	12.9	2.1	32	244	11.6
ANC (kg H_2SO_4/t)	22	107	55	<0.5	68	51	0.6
NAPP (kg H_2SO_4/t)	94	8.0	-39	6.1	16.8	195	18.4
NAG pH (ox)	2.5	10	10.2	3.5	3.4	2.4	4.2
NAG acidity to pH 4.5	58	<0.1	<0.1	2.9	3.6	88	2.5
NAG acidity to pH 7	70	<0.1	<0.1	5.9	6.4	96	8
AMIRA Class	PAF	UC	NAF	PAF	PAF	PAF	PAF

4.8.2 Kinetic test program results

The results of the kinetic testwork program are summarised below, together with a discussion of the findings. The full results of the testwork are provided in Appendix G.

A plot of the pH profiles for all tests is shown in Figure 4-24. Six of the seven tests had generated reasonably stable trends during the testing periods – although there was some variability in the pH of the leachate from Columns 5 and 6. While the pH of the leachate also fluctuated for Column 1 (and was not stable when testing was terminated), there was long term trend toward more acidic pH.

Figure 4-24 shows that Column 2 (UC) and Column 3 (NAF) both generated leachate with neutral pH over the duration of the test. Assuming current conditions prevail, average reaction rates calculated for these samples indicate that the acid potential would be depleted before the ANC, suggesting both samples would remain NAF.

The results of static testwork on five of the samples indicated that they would be PAF. Columns 4 and 7 generated leachate that was acidic (pH around 4 for Column 4) and mildly acidic (pH around 5 for Column 7) from the early stages of testwork – confirming that the samples are acid forming. The results indicate that samples of this nature (low sulfide and negligible ANC) have the potential to be acid generating.

The leachate from Columns 1, 5 and 6 was neutral at the start of the test, suggesting that acidity generated from sulfide oxidation is being buffered by ANC in the samples. However, the leachate pH became more variable as the test proceeded with all samples generating mildly acidic leachates (pH <5) during the second half of the test. Column 1, which contained the least ANC showed a trend towards progressively more acidic leachate pH over the duration of the test. For all samples, the ANC is expected to be depleted before the acid potential

Table 4-18 gives a summary of test outcomes. Average release rates were calculated based on the rate of release when a stable trend was established. In the case of Column #1, the rates were based on the later stages of the test.

The columns that developed acidic conditions were linked to higher metal release rates (Table 4-18) – probably reflecting increased solubility at acid pH. Maximum rates were often observed for Column #1; had this column operated for longer, it is possible that the pH would have continued to decrease and that these rates would have increased further. Several elements were showing trends toward higher dissolved concentrations, e.g. Fe, Cd, Co, Cu and Zn (Appendix G).

The highest sulfate (and calcium) release was observed from NAF-classed sample in Column #2, indicating the potential for neutral, saline drainage from this material type. Due to the neutral pH, metal release was relatively low and would be expected to remain low.

Figure 4-25 shows average sulfate release rates plotted as a function of sample sulfide sulfur content. It is often the case that these parameters are positively correlated, i.e. higher sulfate release would be coincident with higher sulfide content. Such correlations, if apparent in the data, can be useful when using kinetic data to support predictive water quality calculations. In the current dataset, such a correlation is not readily apparent – unless the datapoint for Column #6 is disregarded. For such a high sulfide content, the sulfate release from Column #6 is unexpectedly low. Possible explanations may be that neutralisation products have armoured pyrite surfaces and are inhibiting reaction rates or a result of sulfide grain morphology, for example, if the sulfide is entrained within another mineral phase, it may not be available for reaction.

Table 4-18: Summary of kinetic test outcomes

Column ID	1	2	3	4	5	6	7
Test Duration (weeks)	**50**	**27**	**27**	**25**	**50**	**50**	**25**
Stable trend period (weeks)	36-50[1]	21-25	21-25	10-25	44-50[1]	32-50[1]	16-25
Sample ID	MP02702	MP02710	MP02727	MP27008	MP27042	MP26986	MP27021
Lithology	vt	vm	vt	v	vc	vm	vm
AMIRA Classification	PAF	UC (NAF)	NAF	PAF	PAF	PAF	PAF
Long-term leachate pH trend	pH 4-5 (decreasing)	pH 7-8	pH 7-8	pH ~4	pH 5-7 (variable)	pH 5-7 (variable)	pH 5
Average release rates, mg/kg/week							
SO_4	118	151	76	11	9	6	9
Cl	0.3	0.2	0.2	0.4	0.3	0.4	0.3
F	0.01	0.06	0.1	0.03	0.09	0.2	0.03
P	0.003	0.002	0.004	0.004	0.001	0.004	0.01
Al	0.02	0.002	0.002	0.2	0.004	0.01	0.01
Ca	26	55	28	0.4	1.3	2	0.6
Fe	0.1	0.01	0.01	0.08	0.02	0.02	0.01
K	2.9	2.7	2.9	1.5	0.5	0.9	11
Mg	9.6	1	0.4	0.3	0.9	0.4	0.7
Mn	17	0.2	0.2	0.05	0.01	0.01	0.1
Na	0.7	0.9	0.8	0.9	0.3	0.5	0.4
Si	2.2	1.6	1.5	1.2	0.3	0.4	1
Ag	0.0003	0.0002	0.0003	0.0003	0.0003	0.0004	0.0003
As	0.0006	0.0002	0.0088	0.0003	0.0003	0.0004	0.0003
B	0.3	0.3	0.2	0.1	0.2	0.3	0.1
Ba	0.03	0.02	0.02	0.02	0.03	0.07	0.04
Bi	0.0003	0.0002	0.0002	0.0003	0.0003	0.0004	0.0003
Cd	0.0002	0.00002	0.0001	0.0001	0.00003	0.00004	0.00006
Co	0.04	0.0003	0.003	0.004	0.0003	0.0004	0.003
Cr	0.0003	0.0002	0.0002	0.0003	0.0003	0.0004	0.0003
Cu	0.02	0.0006	0.0003	0.01	0.0006	0.002	0.002
Hg	0.00003	0.00002	0.00002	0.00003	0.00003	0.00004	0.00003
Mo	0.0003	0.0003	0.0009	0.0003	0.0009	0.001	0.0003
Ni	0.02	0.0002	0.0005	0.004	0.0004	0.0005	0.001
Pb	0.0003	0.0002	0.0002	0.0005	0.0003	0.0004	0.0003
Sb	0.0003	0.0002	0.001	0.0003	0.0003	0.0004	0.0003
Se	0.003	0.002	0.002	0.003	0.003	0.004	0.003
Sn	0.0003	0.0002	0.0002	0.0003	0.0003	0.0004	0.0003
Sr	0.2	0.2	0.1	0.002	0.005	0.01	0.004
Th	0.0003	0.0002	0.0002	0.0003	0.0003	0.0004	0.0003
Ti	0.003	0.002	0.002	0.003	0.003	0.004	0.003
Tl	0.0003	0.0002	0.0002	0.0003	0.0003	0.0004	0.0003
U	0.0003	0.0002	0.0002	0.0003	0.0003	0.0004	0.0003
V	0.003	0.001	0.002	0.003	0.003	0.004	0.003
Zn	0.4	0.04	0.04	0.1	0.01	0.02	0.1

Notes: [1] Stable conditions not for this column. Average release rate calculated on basis of most stable period.

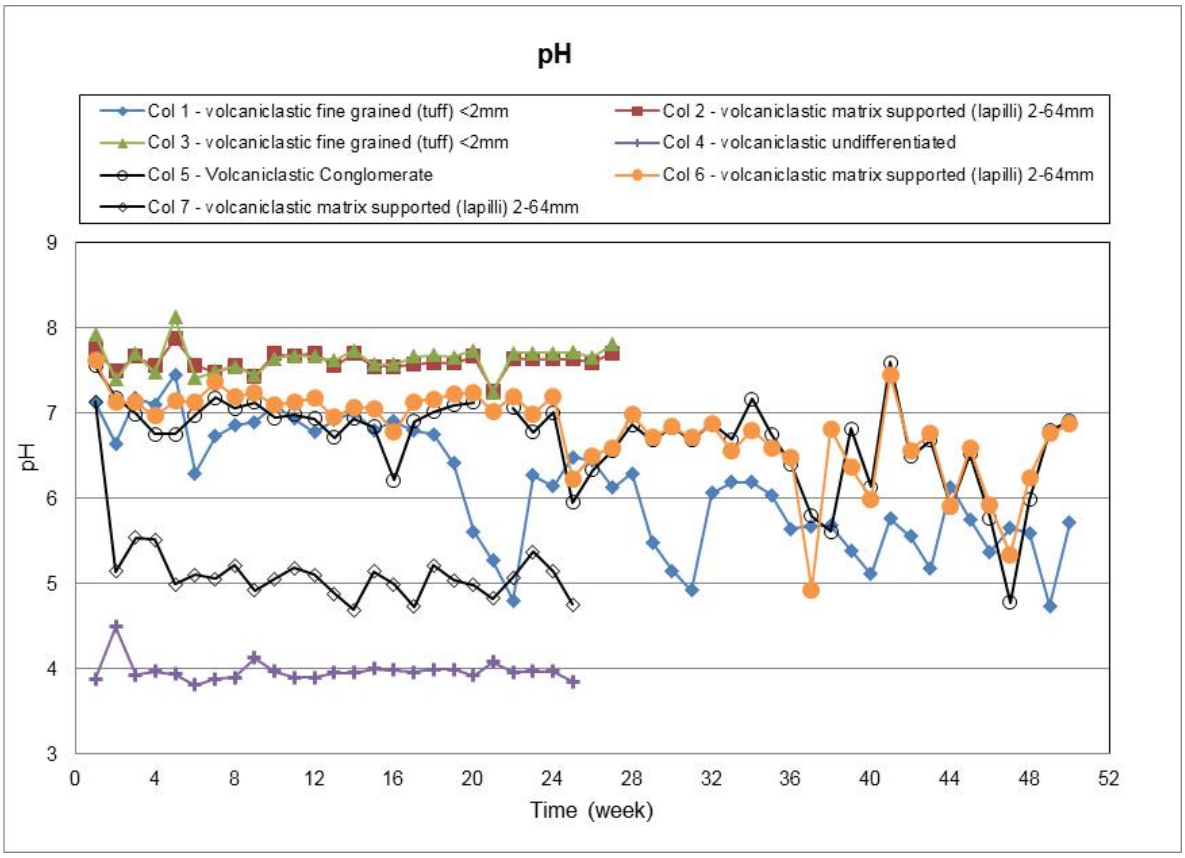


Figure 4-24: pH of leachate from successive leachates (all columns)

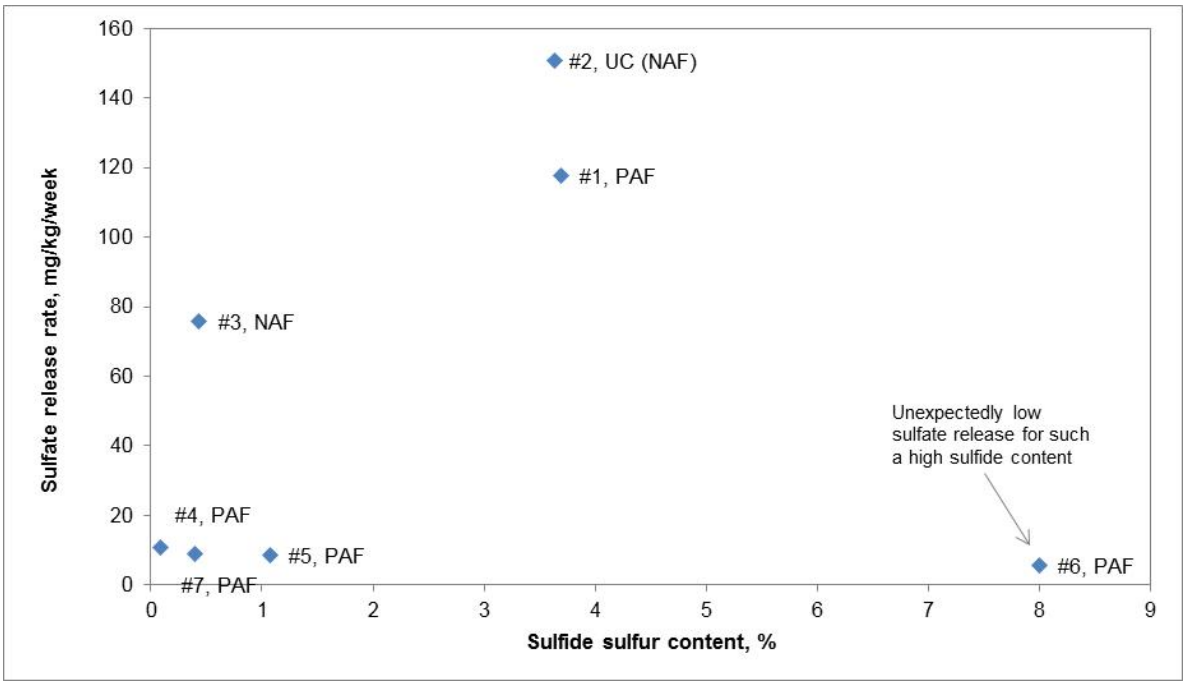


Figure 4-25: Average sulfate release rate, plotted as a function of sulfide sulfur content

5 Facility Area Geochemistry

5.1 Open pit

Water will collect in the McPhillamys open pit during operations from both rainfall and groundwater seepage and this water will need to be pumped out of the pit and managed. Following cessation of mining activities, water will continue to collect in the pit and over the long term a pit lake will form.

Groundwater modelling and a pit water balance have been carried out by others (EMM and HEC respectively) and details for filling of the pit lake on closure have been provided to SRK (HEC, 2019). As shown in Figure 5-1, the lake elevation rises rapidly within the first 100 years and within 250 years has reached a depth of over 350 m, which is within approximately 50 m of its final maximum elevation. From around 500 years after closure onwards, the lake level shows fluctuations but does not continue to increase in depth overall, reaching a maximum level of around 906 m RL. The maximum lake level is approximately 10 m below the lowest point on the pit crest, which is 916 m RL (shown by the horizontal orange line in the plot), on the north west side of the pit, adjacent to the topsoil storage area shown in Figure 2-2. The most recent modelling data indicates that the lake level varies between 896 m RL and 906m RL, both above and below the pre-mining water table of 900m RL. In the long term, the pit is expected to be a flow-through system with net seepage to the surrounding groundwater (the modelled water level will be above the pre-mining water table for around 60% of the time).

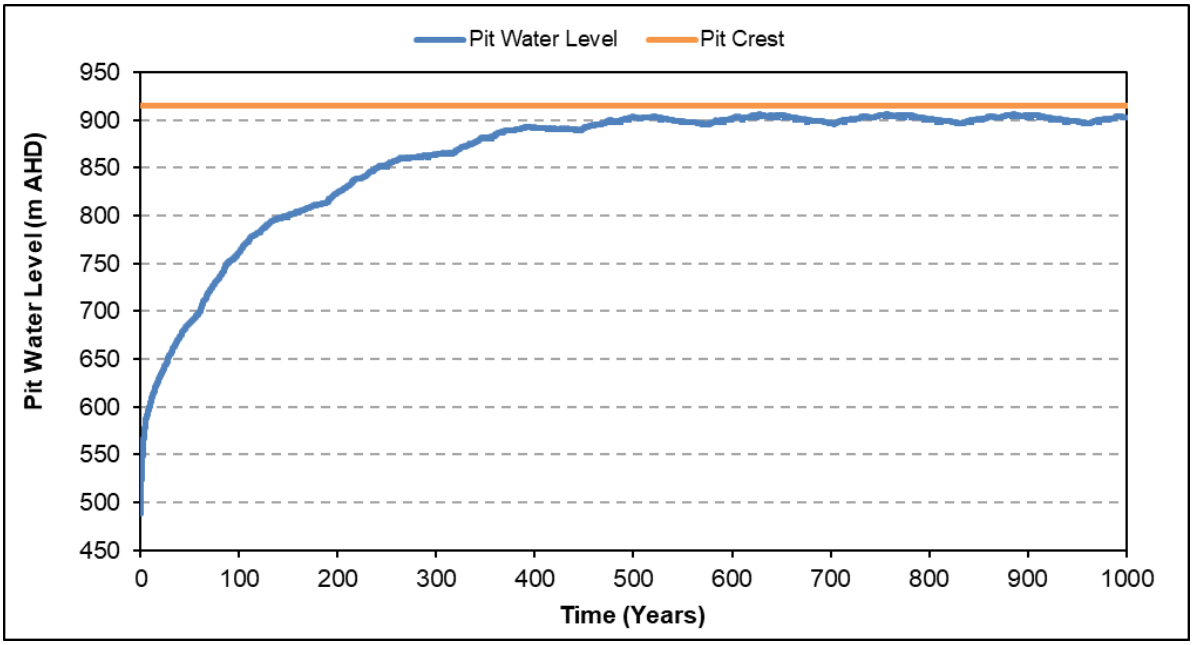


Figure 5-1: Development of McPhillamys pit lake level following closure

Water quality in the pit lake will be influenced by a combination of inflowing groundwater plus solutes which wash from the pit wall into the lake. Groundwater quality is presented in Table 5-1, along with the proportions of total groundwater inflow from different lithological units. Approximately 67% of the total groundwater inflow is predicted to be from metasedimentary units, and this groundwater source has the highest solute load, with median total dissolved solids (TDS) of 1,390 mg/L in comparison to volcaniclastic (433 mg/L) and limestone (395 mg/L). The metasediment source groundwater also has the highest SO_4 (699 mg/L), along with the highest concentrations of the majority of other major solutes (Ca, K, Mg, Na). Although metasediment has the lowest pH, all three groundwater sources are circum-neutral, and several trace elements are below analytical detection limits.

Table 5-1: Groundwater quality estimate and proportions for inflow to McPhillamys pit

Analyte	units	Metasediment (median)	Volcaniclastic (median)	Limestone (median)
Proportion of inflow	%	67	30	3
pH	mg/L	6.78	7.44	7.13
EC	mg/L	1932	741	670
SO_4	mg/L	699	23	74
Alkalinity	mg $CaCO_3$/L	269	264	246
TDS	mg/L	1390	433	395
Ag	mg/L	<0.001	<0.001	<0.001
Al	mg/L	<0.01	<0.01	<0.01
As	mg/L	<0.001	0.002	<0.001
B	mg/L	<0.05	<0.05	<0.05
Ba	mg/L	0.053	0.096	0.04
Be	mg/L	<0.001	<0.001	<0.001
Ca	mg/L	137	43	56
Cd	mg/L	<0.0001	<0.0001	<0.0001
Cl	mg/L	39	58	24
Co	mg/L	<0.001	<0.001	<0.001
Cr	mg/L	<0.001	<0.001	<0.001
Cu	mg/L	0.0015	<0.001	<0.001
F	mg/L	0.2	0.1	0.30
Fe	mg/L	0.3	0.2	0.7
Hg	mg/L	<0.0001	<0.0001	<0.0001
K	mg/L	6.4	2.5	2
Mg	mg/L	69	19	25
Mn	mg/L	0.7	0.1	0.7
Mo	mg/L	<0.001	<0.001	<0.001
Na	mg/L	94	40	44
Ni	mg/L	0.0065	<0.001	<0.001
Pb	mg/L	<0.001	<0.001	<0.001
Sb	mg/L	<0.001	<0.001	<0.001
Se	mg/L	<0.001	<0.001	<0.001
V	mg/L	<0.001	0.0015	<0.001
Zn	mg/L	0.007	<0.005	0.01

Note: Median values calculated from groundwater database supplied by EMM.

The post-closure pit wall lithological exposure is presented in Figure 5-2 along with a pit wall projection of the PAF shell (Figure 4-19) to show the approximate area of wall exposure considered as PAF.

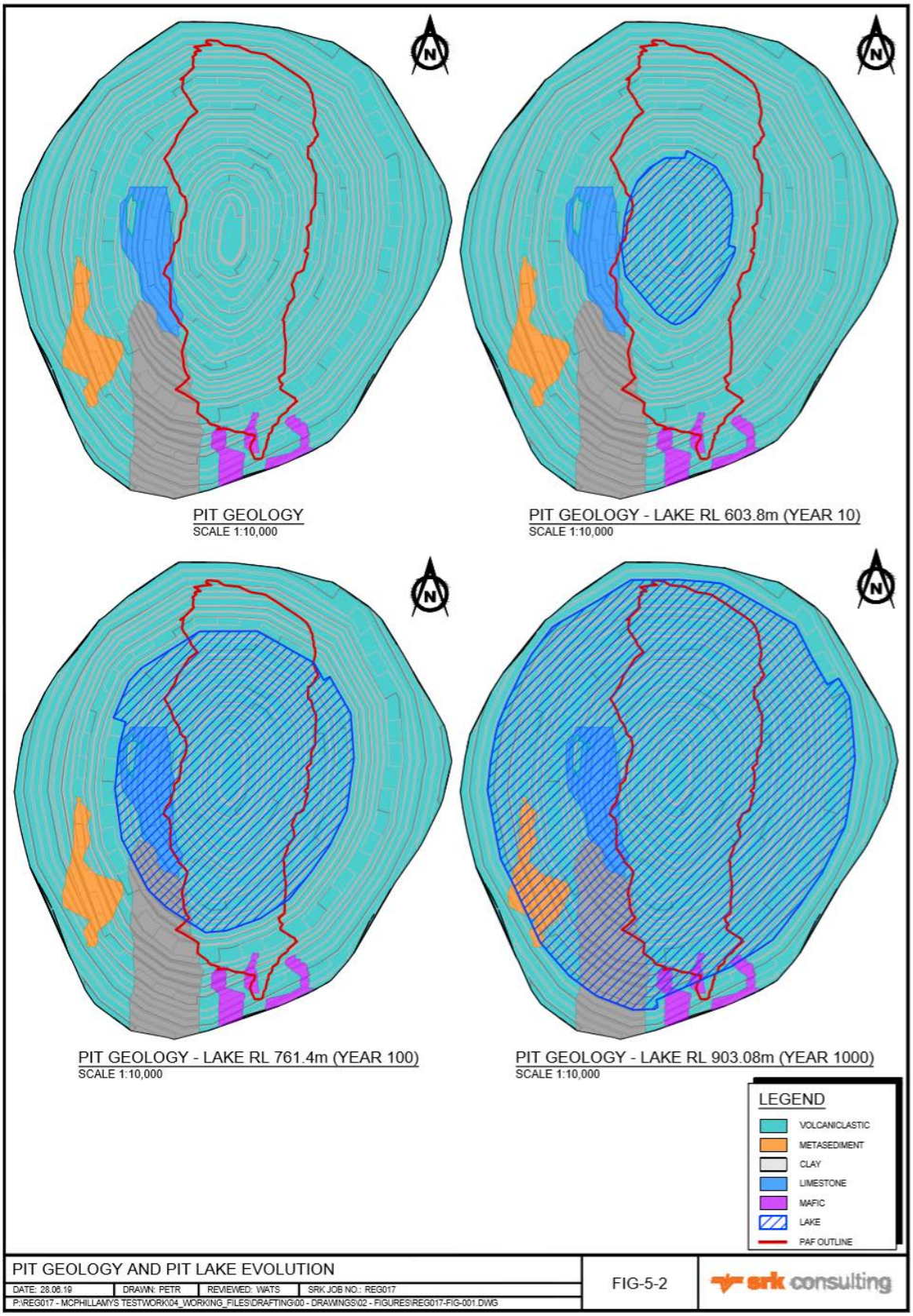


Figure 5-2: McPhillamys pit wall geology and evolution of pit lake level following closure

Wall areas assigned to each lithological unit are shown in Table 5-2. Most of the pit wall is volcaniclastic (86%), consistent with the assumptions for waste rock proportions. Approximately two thirds of the total pit wall surfaces are outside the zone designated as PAF. The majority (approximately 98%) of pit wall within the PAF zone is volcaniclastic.

Table 5-2: Surface area of each lithological grouping exposed on final pit wall

Lithology	Inside PAF zone		Outside PAF zone		Total	Proportion
	m²	%	m²	%	m²	%
Mafic	2,460	0.2	13,195	1.1	15,655	1.2
Volcaniclastic	400,831	32	680,678	54	1,081,509	86
Limestone	3,380	0.3	44,185	3.5	47,565	3.8
Clay	2,738	0.2	78,327	6.2	81,065	6.5
Metasediment	0	0	29,670	2.4	29,670	2.4
Total	**409,409**	**33**	**846,055**	**67**	**1,255,464**	

As the pit lake level rises, sulfidic material becomes inundated and this inhibits sulfide oxidation which reduces the solute load being added to the lake. Although the majority of the PAF units are inundated by the time the lake reaches its maximum level (~500 years), they are exposed for several hundred years while the lake is filling and, in this time, will contribute a significant solute load. Even with almost 4% of the pit wall as limestone/ marble, which provides a significant level of ANC, overall the lake is anticipated to be acidic, with 33% of the walls as PAF, shown by kinetic testing to result in acidic contact water. Additionally, over time the limestone surfaces may become occluded by precipitates, which diminish the effective ANC contribution.

It is likely that the pit lake would have elevated concentrations (in relation to livestock drinking water guidelines) of SO_4 and testing has also indicated the potential for elevated concentrations of As, Co, Ni, Pb and Zn. While the pit is expected to become a flow-through system, the water quality is expected to become progressively worse as the pit fills up. Depending on the specifics of pit water management and timing of exposure of different wall units, there is also the potential for acidic water with elevated analyte concentrations to collect in pit sumps during operations.

5.2 TSF

The TSF is in the northern half of the project area and has a number of associated water management ponds (Figure 2-2). Additionally, Regis indicates that the TSF has been designed with an underdrain system to capture seepage. During operations, TSF seepage water quality would be anticipated to be similar to the tailings liquid fraction test results obtained for the MCPTST samples (Table 4-14), i.e. samples which have undergone cyanide detoxification (assuming that cyanide detoxification is carried out on site as planned). Results indicate that this seepage would be anticipated to be elevated in SO_4 and Se in comparison to ANZECC (2000) livestock drinking water guidelines and therefore capture and active management (as is planned) is recommended. Seepage flux rates have been modelled by the TSF design team (ATC Williams); therefore, a combination of modelled flux rates and the tailings liquid fraction water quality data may be used to plan water management requirements.

The McPhillamys tailings are sulfidic and classify as PAF (Table 4-2) and kinetic tests were initiated in Q2 2019 on the five MCPTST samples (data not available from these tests at time of reporting). As a precursor to kinetic testing, the sulfide oxidation rates of three of the MCPTST samples were measured using an oxygen consumption rate cell. During this test, each sample is placed in an airtight vessel and depletion of the oxygen content of air in the cell headspace over time is used to calculate the sulfide oxidation rate, under the assumption that oxidation of sulfides in the sample has consumed oxygen from the headspace.

Results from this testing indicated oxygen consumption rates in the range 2.3×10^{-10} to 2.9×10^{-10} kg oxygen per kg sample per second ($kgO_2/kg/s$). In SRK's experience, these rates are not particularly high for sulfidic tailings samples, suggesting that the sulfides are not particularly reactive. The measured oxygen consumption rates measured equate to a release rate of 34–43 mg

SO_4/kg(tailings)/day. Although this SO_4 release would likely be accompanied by acidity and associated elevated analyte concentrations, oxidation would not be occurring throughout the mass of tailings deposited, due to the predominantly saturated state (which inhibits sulfide oxidation). Localised oxidation, e.g. on areas of dry tailings beach could result in seepage with elevated SO_4 and acidity in comparison to the tailings liquid fraction; however, this would either be captured in the decant pond or seep into the facility. As the tailings contain ANC, there would be a degree of neutralisation of seepage as it slowly moved through the tailings, and it may be that the contained ANC would be enough to neutralise acidity released from oxidation on beach areas during the operational life of the TSF.

Following closure of the TSF, plans include construction of a store and release cover to inhibit infiltration. Seepage is therefore predicted to diminish in the years following closure, when tailings are no longer being deposited into the TSF. During this time, a large portion of seepage would consist of draindown of process water, deposited in the TSF along with tailings.

5.3 Waste rock and ore

Waste rock emplacement is planned in a location adjacent to the open pit (Figure 2-2). A combination of geochemical characterisation and 3D modelling has facilitated definition of a PAF zone within the planned pit, as illustrated in Figure 4-19. Regis indicates that the PAF zone contains the main ore body as well as a predicted 42% of the total waste rock to be mined. Regis plans to encapsulate all waste rock from the PAF zone within cells of NAF classified waste rock, to ensure that no PAF material remains on the outer surfaces of the waste rock emplacement facility. Additionally, PAF waste rock will not be used for construction purposes anywhere on site. During operations, plans are to capture waste rock facility runoff in a number of water storage ponds, from where it can be tested and managed if necessary. The water quality associated with waste rock during operations would be anticipated to be variable, depending on the timing of emplacement of different lithological types. Additionally, seasonal variation may occur, for example, concentrations may be highest at the onset of the wet season following a prolonged relatively dry spell during which weathering products have built up on waste rock surfaces.

Although specific modelling of waste rock scenarios has not been carried out, geochemical characterisation indicates that PAF waste rock would almost certainly be associated with contact water which would be considered as AMD. In addition to the waste rock, it would also be advisable to manage contact water associated with the ROM pad, as ore in general is likely to be PAF with the potential to generate AMD. Any AMD associated with PAF waste rock or ore may be expected to be acidic and contain concentrations of analytes such as As, Co, Ni, Pb and Zn in excess of livestock drinking water guideline concentrations.

Due to their proximity, a proportion of seepage from the waste rock facility and ROM pad would likely migrate towards the open pit, both during operations and post closure. Dewatering the pit will create a cone of depression, which the waste rock and ROM are likely to be located within and this will promote migration of seepage towards the pit.

6 Summary and Conclusions

ABA and NAG testwork has highlighted the large variability in acid generating and acid neutralising properties of the materials to be mined at McPhillamys.

A large range of total sulfur concentrations (<0.01 to 11 wt% S) was measured, with several lithologies (intermediate extrusive, limestone, sandstone, siltstone, vein and volcaniclastic) having samples with >1 wt% S. Tailings total sulfur concentrations were in the range 1.8 – 7.2 wt% S, with minimum and maximum concentrations in oxide and fresh samples respectively.

Total sulfur concentrations less than 0.3% were more common between the periphery of the central mineralised zone, which runs north-south through the proposed pit, and the outer edges of the pit. Higher sulfur concentrations in the mineralised zone is likely to be largely indicative of the co-incident relationship between Au mineralisation and sulfide occurrence. Sulfur speciation testing indicated that most of the sulfur is present in sulfide form.

The ANC results also demonstrated a large range of values, from <0.5 kg H_2SO_4/t to 979 kg H_2SO_4/t in waste rock and 0.6–76.3 kg H_2SO_4/t in ore. The ANC range in tailings samples was 4.2–80 kg H_2SO_4/t.

Geochemical testwork results were used to clarify the spatial distribution of NAF/ PAF materials, and resulted in delineation of the central PAF zone, which contains 42% of the waste rock to be mined. Definition of the PAF zone has facilitated waste scheduling and waste emplacement planning to ensure that PAF classified waste rock is appropriately managed, i.e. encapsulated within NAF material in the waste emplacement facility.

In terms of global abundance, the trace elements that were identified as being present at concentrations considered to be ‘enriched’ in one or more waste rock samples were Ag, As, Bi, Cd, Co, Cu, Hg, Mn, Mo, Pb, S, Sb, Se and Zn. Ore samples were enriched in As, Cu, S and Se and tailings samples were enriched in Ag, As, Cd, Pb, S and Se.

Static leach testing using deionised water indicated few samples with elevated concentrations in contact water; however, there were samples which leached elevated concentrations of Al, Cd, Co, Ni, Se and Zn. When leaching under mildly acidic conditions, there was enhanced leaching of metals such as Cd, Co, Cu, Ni and Zn. Kinetic testing was completed on seven waste rock samples covering a range of sulfur contents and acid rock drainage classifications. The range of leachate pH represented was acidic to neutral (pH 4–8) and in general leachate conditions were consistent with sample classifications from static testing.

The scope of work did not include detailed facility water quality modelling; however, the geochemical characterisation results are adequate to inform material and water handling decisions for the project. On cessation of mining activities in the McPhillamys pit, a lake is predicted to form, reaching a maximum depth of around 415m within approximately 500 years. It is likely that the pit lake will have elevated concentrations (in relation to livestock drinking water guidelines) of SO_4, and testing has also indicated the potential for elevated concentrations of As, Co, Ni, Pb and Zn. In the long term, the pit is expected to be a flow-through system with net seepage to the surrounding groundwater (the modelled water level will be above the pre-mining water table for around 60% of the time). Depending on the specifics of pit water management and timing of exposure of different wall units, there is also the potential for acidic water with elevated analyte concentrations to collect in pit sumps during operations.

The liquid fraction of tailings, which may be indicative of initial and ongoing operational seepage from the TSF, contained elevated concentrations of SO_4, F and Se. Localised generation of AMD is anticipated in the TSF, where unsaturated conditions occur in beach areas and this will generate

seepage which will either collect in the decant or seep into the TSF. Acidic seepage into the TSF during operations may be neutralised by ANC within the tailings. Results for samples which were analysed after being through cyanide detoxification highlighted the value of this process which is planned for use at McPhillamys. Non-detoxed samples had higher concentrations of cyanide and several other analytes, such as Cu, which complexes with cyanide.

Waste rock classified as PAF is expected to be associated with contact water which would be considered as AMD and this water should be managed, as is planned. It would also be advisable to manage contact water associated with the ROM pad, as ore in general is likely to be PAF with the potential to generate AMD. Any AMD associated with PAF waste rock or ore may be expected to be acidic and contain concentrations of analytes such as As, Co, Ni, Pb and Zn in excess of livestock drinking water guideline concentrations.

As with all characterisation programs, the samples analysed are assumed to be representative of the mass of material to be mined. Nevertheless, ongoing verification of material properties on implementation of the project is recommended as a best practice measure.

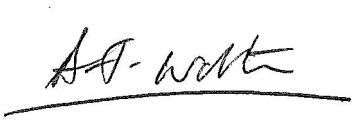
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Principal Consultant

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7 References

AMIRA International Limited, 2002. ARD Test Handbook: Project P387A Prediction and Kinetic Control of Acid Mine Drainage.

ANZECC, 2000. Australia and New Zealand Guidelines for Fresh and Marine Water Quality (October 2000).

Australian Government, Leading Practice Sustainable Development Program (LPSDP) for the Mining Industry, 2016. Preventing Acid and Metalliferous Drainage, September 2016.

Bowen, H J M, 1979. Environmental Chemistry of the Elements. Academic Press, New York.

HEC, 2019. McPhillamys pit water balance details, Dayjil Fincham, personal communication.

MEND Report 1.20.1, 2009. Prediction Manual for Drainage Chemistry from Sulfidic Geologic Materials. December 2009.

Smith, K S & Huyck, H L O, 1998. An overview of the abundance, relative mobility, bioavailability, and human toxicity of metals, in Society of Economic Geologists, Reviews in Economic Geology, Volume 6A: The environmental geochemistry of mineral deposits, Part A: Processes, techniques, and health issues (eds: G S Plumlee & M J Logsdon).

SRK Consulting, 2014. McPhillamys Gold Project: Geochemical Characterisation.

SRK Consulting, 2015. McPhillamys Gold Project: Geochemical Characterisation, Long-Term Kinetic Testing Program Memo.

SRK Consulting, 2018. McPhillamys Gold Project: Geochemical Characterisation.

Appendices

Appendix A: Drill hole sample intervals

Sample ID	Hole_ID	mFROM	mTO	Regolith Group	Lithology	Ore
MP27006	RRLMPDD079	12	14	L	cy	
MP27028	RRLMPRC076	4	5	L	CY	
MP26990	RRLMPDD053	13.17	16	p	cy	
MP27002	RRLMPDD068	4	6	P	CY	
MP27011	RRLMPRC042	240	241	P	CY	
MP-WR008	RRLMPMB003A (logged as RRLMPMB003)	16	17	C	cy	
MP-WR023	RRLMPDRC085	10	11	L	cy	
MPWR036	RRLMPDD222	166	167	C	CY	
MPWR040	RRLMPDD219	9	10	L	cy	
MPWR045	RRLMPDD218	50.6	51	L	cy	
MPWR033	RRLMPDD221	11.3	12	P	CY	Ore
MPWR044	RRLMPDD218	16	16.5	P	cy	
MP02713	RRLMPRCD004	3	4	L	SY	
MP26999	RRLMPDD065	2	4	P	ys	
MP27000	RRLMPDD065	14	16	P	ys	
MP26981	RRLMPDD049	42	43	K	od	
MP26974	RRLMPDD032	20	21	c	og	
MP-WRO25 92-93m	RRLMPDD182	92	93	R	og	
MP-WR003	PH3_009	80	81	R	iu	
MP26977	RRLMPDD037	346	347	r	sl	
MP26988	RRLMPDD051	371	372	R	sl	
MP26989	RRLMPDD051	380	381	R	sl	
MP-WR005	MB05	58	59	K	sl	
MP-WR004	MB05	6	7	P	sl	
MP-WR016	RRLMPDD111	345	346	R	sl	
MP-WR018	RRLMPDD116	324	325	R	sl	
MP-WR020	RRLMPDD102	340	341	R	sl	
MPWR048	RRLMPDD218	304.34	304.8	R	sl	
MPWR049	RRLMPDD218	190	190.5	R	sl	
MPWR059	RRLMPDD220	287.1	287.5	R	sl	
MPWR061	RRLMPDD220	394.2	394.6	R	SL	
MP-WR009	RRLMPDD133	166	167	R	sp	
MP-WR021	RRLMPDD133	166	167	R	sp	
MP-WR022	RRLMPDD133	283	284	R	sp	
MP02724	RRLMPRCD015	30	31	C	sh	
MP02723	RRLMPRCD015	10	11	L	SH	
MP27012	RRLMPRC045	114	115	r	st	
MP-WR013	RRLMPDD158	75	76	C	st	
MP-WRO26 37-38m	RRLMPDD169	37	38	L	st	
MP-WR024	RRLMPDRC085	80	81	R	st	
MPWR037	RRLMPDD219	180	180.7	C	st	
MPWR039	RRLMPDD219	75	76	C	st	
MPWR043	RRLMPDD220	104	105	C	st	
MPWR046	RRLMPDD218	80	81	L	st	
MPWR058	RRLMPDD222	110.3	110.7	R	ST	
MP27031	RRLMPRC081	3	4	L	VN	
MP27037	RRLMPRCD010	249.4	250	R	vn	
MP27038	RRLMPRCD010	250	250.54	R	vn	
MP27045	RRLMPRCD016	149.33	149.82	R	vn	
MP02701	RRLMPRC001	4	5	c	v	
MP02704	RRLMPRC002	5	6	c	v	
MP02717	RRLMPRCD009	5	6	C	V	
MP02732	RRLMPRCD006	10	11	C	V	
MP02714	RRLMPRCD004	20	21	K	V	
MP02718	RRLMPRCD009	23	24	K	V	
MP02730	RRLMPRC005	30	31	K	V	
MP26995	RRLMPDD055	7	8	L	v	
MP27008	RRLMPRC035	215	216	I	v	
MP02705	RRLMPRC002	20	21	r	v	
MP02706	RRLMPRC002	34	35	r	v	
MP02707	RRLMPRC002	60	61	r	v	
MP02708	RRLMPRC002	81	82	r	v	
MP02709	RRLMPRC002	100	101	r	v	
MP02715	RRLMPRCD004	100	101	R	V	
MP02716	RRLMPRCD004	150	151	R	V	

Sample ID	Hole_ID	mFROM	mTO	Regolith Group	Lithology	Ore
MP02719	RRLMPRCD009	50	51	R	V	
MP26971	RRLMPDD029	276	277	R	v	
MP-WR014	RRLMPRC084	25	26	C	v	
MP_WR032 28m-29m	RRLMPDD173	28	29	C	v	
MP-WR019	RRLMPDD102	34	35	K	v	Ore
MP_WR031 12m-13m	RRLMPDD173	12	13	L	v	
MP-WR012	RRLMPDD117	149	150	R	v	
MP-WRO27 85-86m	RRLMPDD169	85	86	R	v	
MP-WRO28 114-115m	RRLMPDD169	114	115	R	v	
MP-WRO29 162-163m	RRLMPDD169	162	163	R	v	
MPWR053	RRLMPDD218	100.1	100.5	K	V	
MPWR034	RRLMPDD222	30	31	L	V	
MPWR035	RRLMPDD222	60	61	L	V	
MPWR041	RRLMPDD220	5	6	L	v	
MPWR042	RRLMPDD220	59	60	L	v	
MPWR038	RRLMPDD219	122	123	R	v	
MPWR054	RRLMPDD220	170.7	171	R	v	
MPWR057	RRLMPDD220	214.2	214.8	R	v	
MP26982	RRLMPDD049	48	49	K	vc	
MP26970	RRLMPDD029	8	9	P	vc	
MP26965	RRLMPDD022	84.65	85.4	R	VC	
MP26966	RRLMPDD022	284	285	R	VC	Ore
MP26975	RRLMPDD034	170	171	R	vc	
MP26985	RRLMPDD051	277	278	R	vc	
MP26987	RRLMPDD051	356	357	R	vc	
MP26992	RRLMPDD053	64	65	r	vc	
MP27001	RRLMPDD065	50	51	R	vc	
MP27004	RRLMPDD077	98	99	R	vc	
MP27039	RRLMPRCD010	285	286	R	vc	
MP27042	RRLMPRCD012	240	241	R	vc	
MP27046	RRLMPRCD019	122	123	R	vc	
MP27048	RRLMPRCD024W	84	85	R	vc	
MP27049	RRLMPRCD024W	174	175	R	vc	
MP-WR002	PH3_009	29	30	C	vc	
MP-WR007	PH1_020	58	59	R	vc	
MP26972	RRLMPDD029	292	293	R	vg	
MP26984	RRLMPDD049	103	104	R	vg	
MP26997	RRLMPDD056	172	173	r	vg	
MP27040	RRLMPRCD012	182	183	R	vg	
MP27041	RRLMPRCD012	200	201	R	vg	
MP02736	RRLMPRC011	4	5	C	vm	
MP27017	RRLMPRC057	12	13	c	vm	
MP27021	RRLMPRC061	20	21	C	VM	
MP27025	RRLMPRC072	118	119	C	VM	
MP26991	RRLMPDD053	50	51	k	vm	
MP26996	RRLMPDD056	36	37	k	vm	
MP27013	RRLMPRC045	137	138	k	vm	
MP27019	RRLMPRC059	34	35	K	VM	
MP27029	RRLMPRC076	24	25	K	VM	
MP27033	RRLMPRC081	36	37	K	VM	
MP26967	RRLMPDD025	20	21	L	vm	
MP26976	RRLMPDD036	10	12	P	VM	
MP02710	RRLMPRC003	80	81	R	vm	
MP02711	RRLMPRC003	120	121	R	vm	
MP02712	RRLMPRC003	150	151	R	vm	
MP02731	RRLMPRC005	60	61	r	vm	
MP02735	RRLMPRCD010	20	21	R	VM	
MP02749	RRLMPRCD006	106	107	R	vm	
MP02750	RRLMPRCD006	242	243	r	vm	
MP26969	RRLMPDD025	151	152	r	vm	
MP26973	RRLMPDD029	322.5	323.5	R	vm	
MP26979	RRLMPDD046	144	145	R	VM	
MP26983	RRLMPDD049	56	57	R	vm	
MP26986	RRLMPDD051	291	292	R	vm	
MP26993	RRLMPDD053	130	131	r	vm	
MP26994	RRLMPDD053	340	341	r	vm	

Sample ID	Hole_ID	mFROM	mTO	Regolith Group	Lithology	Ore
MP26998	RRLMPDD056	194	195	r	vm	
MP27003	RRLMPDD068	50	51	R	vm	
MP27005	RRLMPDD077	352	353	R	vm	Ore
MP27018	RRLMPRC058	130	131	R	VM	
MP27020	RRLMPRC059	90	91	R	VM	
MP27022	RRLMPRC061	75	76	R	VM	
MP27023	RRLMPRC063	94	95	R	VM	
MP27026	RRLMPRC074	130	131	R	VM	
MP27030	RRLMPRC076	48	49	R	VM	
MP27034	RRLMPRCD006	96	97	R	vm	
MP27035	RRLMPRCD006	315	316	r	vm	
MP27036	RRLMPRCD008	268	269	r	vm	
MP02751	RRLMPRCD008	170	171	R	vm	
MP27047	RRLMPRCD023	458	459	R	vm	Ore
MP27044	RRLMPRCD016	90	91	R	vm	
MP-WR010	RRLMPDD152	19	20	C	vm	
MP-WR017	RRLMPDD116	21	22	C	vm	
MP-WR006	PH1_020	37	38	K	vm	
MP-WR011	RRLMPDD117	50	51	K	vm	
MP-WR001	SRK_GT5	260	261	R	vm	
MP-WR015	RRLMPDD137	54	55	R	vm	
MP-WRO30 97-98m	RRLMPDD157	97	98	R	vm	
MPWR047	RRLMPDD218	280.3	280.8	R	vm	
MPWR051	RRLMPDD218	160	160.25	R	vm	
MPWR052	RRLMPDD218	114.4	114.5	R	vm	
MPWR055	RRLMPDD221	50	50.5	R	VM	
MPWR056	RRLMPDD221	81.2	82	R	VM	
MPWR060	RRLMPDD221	170.3	170.8	R	VM	
MP02720	RRLMPRCD013	10	11	C	vt	
MP02745	RRLMPRCD024	30	31	c	vt	
MP27014	RRLMPRC047	20	21	c	vt	
MP27016	RRLMPRC054	191	192	c	vt	
MP27024	RRLMPRC071	75	76	C	VT	
MP27032	RRLMPRC081	32	33	C	VT	
MP27050	RRLMPRCD050	12	13	c	vt	
MP02727	RRLMPRCD023	45	46	k	vt	
MP02739	RRLMPRCD016	30	31	K	vt	
MP27027	RRLMPRC075	31	32	K	VT	
MP02726	RRLMPRCD023	15	16	l	vt	
MP27010	RRLMPRC038	240	241	L	VT	
MP27015	RRLMPRC048	156	157	l	vt	
MP02702	RRLMPRC001	37	38	r	vt	
MP02703	RRLMPRC001	81	82	r	vt	
MP02721	RRLMPRCD013	40	41	R	vt	
MP02722	RRLMPRCD013	70	71	R	vt	
MP02728	RRLMPRCD023	80	81	r	vt	
MP02729	RRLMPRCD023	120	121	r	vt	
MP02733	RRLMPRCD006	50	51	R	VT	
MP02734	RRLMPRC007	144	145	R	VT	
MP02737	RRLMPRCD012	38	39	R	vt	
MP02738	RRLMPRCD014	35	36	R	vt	
MP02740	RRLMPRC017	80	81	R	vt	
MP02741	RRLMPRC017	126	127	R	vt	
MP02742	RRLMPRCD018	45	46	R	vt	
MP02743	RRLMPRC020	52	53	R	vt	Ore
MP02744	RRLMPRC021	232	233	R	vt	Ore
MP02746	RRLMPRCD024	220	221	r	vt	
MP02748	RRLMPRC027	56	57	r	vt	
MP26968	RRLMPDD025	70	71	R	vt	
MP27007	RRLMPRC035	190	191	r	vt	
MP27009	RRLMPRC038	150	151	R	VT	
MP02725	RRLMPRCD019	45	46	R	vt	
MP02747	RRLMPRC026	20	21	R	vt	
MP26978	RRLMPDD043	352	353	R	vt	Ore
MPWR050	RRLMPDD218	220.3	220.7	R	vt	
MP26980	RRLMPDD049	38	39	K	vx	

Appendix B: Laboratory test methods

Table A-1: Laboratory test methods

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

Table A-1: Parameters measured and description of method

Parameter	ALS method code	Description
Paste pH (1:2)	EA002	pH measurements are performed on a 1:2 solid/water extract.
Paste EC (1:2)	EA010	Electrical conductivity measurements are performed on a 1:2 solid/water extract.
Acid neutralising capacity (ANC)	EA013	Determined by adding HCl to the sample, heating it, and then back-titrating the mixture with 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 sulfur	ED042T	The sample is combusted in oxygen at 1350°C. Sulfur present in the sample is evolved as sulfur dioxide and swept to a measurement cell for quantification by infrared detection (LECO). The infra-red cell output is calibrated against the value of a known standard sample to provide the total sulfur of the unknown sample.
Acid extractable sulfur (SO_4-S)	EA023	Determined by adding HCl to the sample. Soluble sulfates are dissolved in the HCl and are quantified by ICP.
Single addition net acid generation (NAG) test	EA011	The NAG test involves addition of hydrogen peroxide 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).
Chromium Reducible Sulfur (CRS)	EA026	Dried pulped sample is mixed with acid and chromium metal in a rapid distillation unit to produce hydrogen sulfide (H_2S) which is collected and titrated with iodine (I_2(aq)) to measure CRS.
Whole rock multi element assay	ME-MS41	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.
Leach test (Shake flask extraction, SFE)	MEND 2009 11.5 (and various analysis methods)	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 agitated for a period of 24 hours. The leach solution is filtered through a 0.45µm filter prior to analysis. Analytical techniques are selected depending on the elements under investigation and include ICP-AES and ICP-MS.
Mineralogical Assessment	Subcontracted to University of Queensland	Quantitative XRD carried out on a powdered sample containing an internal standard.
Total Carbon, Inorganic Carbon and Organic Carbon	EP003	Total Carbon determined by LECO furnace method with infra-red cell. The sample is then pre-treated with hydrochloric acid to remove inorganic carbon/carbonate. The residual non-carbonate carbon is determined by LECO furnace method with infra-red cell.
Acid-Base Characteristic Curve (ABCC)	-	Involves a slow titration of the sample with acid, while monitoring the pH readings. Details of the procedure are outlined in the AMIRA International ARD Test Handbook (AMIRA, 2002).

Parameter	ALS method code	Description
Cation Exchange Capacity (CEC)	ED008	Exchangeable Cations, CEC and ESP: Soil sample is extracted in 1M Ammonium Acetate at pH=7 (or 1M Ammonium Chloride at pH=7) with cations (Na, K, Ca & Mg) then determined by ICP OES/ IMP MS and reported as Exchangeable Cations. For saline soils, these results can be corrected for water soluble cations and reported as Exchangeable cations in meq/100 g or soil can be pre-treated (aqueous ethanol/aqueous glycerol) prior to extraction. CEC is the sum of the exchangeable cations in meq/100 g.
Particle Size Distribution (by sieving)	EA150	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of de-ionised water to sieve all fractions down to 75 µm.

Table A-2: Calculated data

Parameter	Description
Maximum potential acidity (MPA)	Calculated by multiplying the total sulfur content (wt.%) by 30.6. Expresses the total sulfur result in kg H_2SO_4/t. Approach assumes that all sulfur is present as pyrite.
Acid potential (AP)	Calculated by multiplying the sulfide-sulfur content (wt.%) by 30.6. Expresses the sulfide-sulfur result in kg H_2SO_4/t.
Sulfide-sulfur	Difference between Total sulfur and sulfate sulfur.
Net acid producing potential (NAPP)	NAPP is the difference between the AP of the sample and the ANC: NAPP = AP – ANC Use of the MPA in place of the AP gives a more conservative NAPP.
Net potential ratio (NPR)	NPR is the ratio of the AP and the ANC: NPR = ANC/AP Use of the MPA in place of the AP gives a more conservative NRP.

Appendix C: ABA, NAG and CEC/ Sodicity results

CERTIFICATE OF ANALYSIS

Work Order	: **EB1324001**	Page	: 1 of 20
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-SEP-2013
Sampler	: ----	Issue Date	: 21-OCT-2013
Site	: ----		
		No. of samples received	: 87
Quote number	: BN/027/13	No. of samples analysed	: 87

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
SATISH.TRIVEDI	2 IC Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils
Stephen Hislop	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Stephen Hislop	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **ASS: EA013 (ANC) Fizz Rating: 0- None; 1- Slight; 2- Moderate; 3- Strong; 4- Very Strong; 5- Lime.**

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP26965	MP26966	MP26967	MP26968	MP26969
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-001	EB1324001-002	EB1324001-003	EB1324001-004	EB1324001-005
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.1	8.8	7.9	9.1	9.3
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	160	151	-14.6	-103	-93.7
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	424	340	48	145	223
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.3	2.6	7.3	8.7	8.8
NAG (pH 4.5)	----	0.1	kg H2SO4/t	98.7	52.0	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	105	60.9	<0.1	<0.1	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	31.3	43.1	14.6	128	116
ANC as CaCO3	----	0.1	% CaCO3	3.2	4.4	1.5	13.1	11.8
Fizz Rating	----	0	Fizz Unit	2	2	1	3	2
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	6.27	6.20	<0.02	0.04	<0.02
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	6.27	6.34	<0.01	0.82	0.73
Sample Preparation Method								
Amount	----	0.01	kg	1.75	1.05	1.55	1.55	1.30

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP26970	MP26971	MP26972	MP26973	MP26974
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-006	EB1324001-007	EB1324001-008	EB1324001-009	EB1324001-010
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	5.9	8.2	8.6	9.0	8.5
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	12.2	146	108	-826	-25.3
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	107	335	346	96	191
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	5.2	2.3	2.4	11.1	7.6
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	104	69.7	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	1.5	114	77.7	<0.1	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	3.4	18.5	59.0	832	25.3
ANC as CaCO3	----	0.1	% CaCO3	0.3	1.9	6.0	84.9	2.6
Fizz Rating	----	0	Fizz Unit	0	1	2	5	1
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.34	5.39	5.47	0.18	<0.02
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.51	5.39	5.47	0.18	<0.01
Sample Preparation Method								
Amount	----	0.01	kg	1.50	1.25	1.10	1.10	2.65

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP26975	MP26976	MP26977	MP26978	MP26979
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-011	EB1324001-012	EB1324001-013	EB1324001-014	EB1324001-015
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	9.1	8.6	9.2	8.7	9.3
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	190	-5.2	-914	96.6	-178
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	313	68	73	277	114
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.3	7.3	11.0	2.7	11.2
NAG (pH 4.5)	----	0.1	kg H2SO4/t	107	<0.1	<0.1	40.3	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	115	<0.1	<0.1	49.4	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	28.7	5.2	914	61.3	179
ANC as CaCO3	----	0.1	% CaCO3	2.9	0.5	93.3	6.2	18.2
Fizz Rating	----	0	Fizz Unit	2	0	5	2	3
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	7.12	<0.02	<0.02	4.98	0.04
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	7.16	<0.01	0.01	5.16	0.04
Sample Preparation Method								
Amount	----	0.01	kg	1.50	1.55	0.75	0.70	1.68

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP26980	MP26981	MP26982	MP26983	MP26984
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-016	EB1324001-017	EB1324001-018	EB1324001-019	EB1324001-020
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	9.0	9.4	8.6	9.1	9.2
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-41.3	-86.7	-188	-90.1	-87.1
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	145	123	254	270	154
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	10.5	11.3	9.1	8.6	10.2
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	42.2	88.2	192	110	100
ANC as CaCO3	----	0.1	% CaCO3	4.3	9.0	19.6	11.2	10.2
Fizz Rating	----	0	Fizz Unit	2	2	3	2	2
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.03	0.05	0.14	0.15	0.21
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.03	0.05	0.14	0.65	0.42
Sample Preparation Method								
Amount	----	0.01	kg	3.46	3.22	2.94	1.62	1.58

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP26985	MP26986	MP26987	MP26988	MP26989
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-021	EB1324001-022	EB1324001-023	EB1324001-024	EB1324001-025
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	9.0	8.9	9.1	8.8	9.0
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	128	195	3.0	-741	-875
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	332	324	293	221	107
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.4	2.4	3.8	11.2	11.2
NAG (pH 4.5)	----	0.1	kg H2SO4/t	94.0	87.8	0.6	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	102	95.8	3.6	<0.1	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	44.5	51.0	96.7	760	876
ANC as CaCO3	----	0.1	% CaCO3	4.5	5.2	9.9	77.6	89.3
Fizz Rating	----	0	Fizz Unit	2	2	2	5	5
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	5.64	7.99	3.26	0.62	0.03
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	5.64	8.05	3.26	0.62	0.03
Sample Preparation Method								
Amount	----	0.01	kg	1.12	1.20	1.04	1.24	1.06

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP26990	MP26991	MP26992	MP26993	MP26994
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-026	EB1324001-027	EB1324001-028	EB1324001-029	EB1324001-030
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	7.8	8.2	9.3	9.3	9.3
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-8.0	-152	-128	-152	-91.3
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	376	768	158	227	285
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	8.8	9.0	11.0	10.9	8.7
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	8.0	174	130	165	128
ANC as CaCO3	----	0.1	% CaCO3	0.8	17.8	13.2	16.8	13.1
Fizz Rating	----	0	Fizz Unit	0	3	2	3	3
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	<0.02	0.63	0.06	0.36	0.30
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	<0.01	0.72	0.06	0.42	1.20
Sample Preparation Method								
Amount	----	0.01	kg	1.26	1.48	1.60	1.10	1.36

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP26995	MP26996	MP26997	MP26998	MP26999
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-031	EB1324001-032	EB1324001-033	EB1324001-034	EB1324001-035
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.3	8.4	9.2	9.1	7.6
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-9.5	-13.8	-85.8	-3.9	-1.0
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	201	169	208	282	187
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	7.5	7.7	8.8	8.5	5.4
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	1.4
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	9.5	13.8	117	104	3.2
ANC as CaCO3	----	0.1	% CaCO3	1.0	1.4	11.9	10.6	0.3
Fizz Rating	----	0	Fizz Unit	0	1	3	3	0
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	<0.02	<0.02	0.02	0.04	0.07
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	<0.01	<0.01	1.02	3.27	0.07
Sample Preparation Method								
Amount	----	0.01	kg	4.16	1.92	1.16	1.28	2.42

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)				Client sample ID	MP27000	MP27001	MP27002	MP27003	MP27004
				Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit		EB1324001-036	EB1324001-037	EB1324001-038	EB1324001-039	EB1324001-040
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.3	9.0	6.1	7.9	8.8
EA009: Nett Acid Production Potential									
Net Acid Production Potential	----	0.5	kg H2SO4/t		-13.7	-117	<0.5	126	139
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		99	215	75	856	384
EA011: Net Acid Generation									
pH (OX)	----	0.1	pH Unit		7.3	8.9	5.9	2.5	2.3
NAG (pH 4.5)	----	0.1	kg H2SO4/t		<0.1	<0.1	<0.1	83.0	101
NAG (pH 7.0)	----	0.1	kg H2SO4/t		<0.1	<0.1	1.4	103	109
EA013: Acid Neutralising Capacity									
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t		13.7	125	1.6	90.7	43.3
ANC as CaCO3	----	0.1	% CaCO3		1.4	12.8	0.2	9.2	4.4
Fizz Rating	----	0	Fizz Unit		1	3	0	2	2
EA023 : TOS-ASS									
Total Oxidisable Sulphur (ASS)	----	0.02	%		<0.02	0.23	0.04	5.54	5.95
ED042T: Total Sulfur by LECO									
Sulfur - Total as S (LECO)	----	0.01	%		<0.01	0.25	0.04	7.08	5.95
Sample Preparation Method									
Amount	----	0.01	kg		3.46	1.80	3.28	2.16	2.66

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP27005	MP27006	MP27007	MP27008	MP27009
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-041	EB1324001-042	EB1324001-043	EB1324001-044	EB1324001-045
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	6.9	6.0	2.8	4.2	3.6
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	288	-16.1	256	6.1	172
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	560	84	3940	471	1810
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.4	7.3	2.3	3.5	2.3
NAG (pH 4.5)	----	0.1	kg H2SO4/t	77.8	<0.1	137	2.9	96.8
NAG (pH 7.0)	----	0.1	kg H2SO4/t	90.7	<0.1	148	5.9	104
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	21.4	16.1	<0.5	<0.5	3.2
ANC as CaCO3	----	0.1	% CaCO3	2.2	1.6	<0.1	<0.1	0.3
Fizz Rating	----	0	Fizz Unit	1	1	0	0	0
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	9.29	<0.02	8.03	0.07	5.58
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	10.1	<0.01	8.37	0.20	5.74
Sample Preparation Method								
Amount	----	0.01	kg	1.18	5.08	3.04	2.52	2.96

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP27010	MP27011	MP27012	MP27013	MP27014
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-046	EB1324001-047	EB1324001-048	EB1324001-049	EB1324001-050
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	6.3	6.0	6.4	4.8	6.3
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-4.2	<0.5	-12.5	<0.5	-1.4
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	95	87	197	189	65
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	8.5	5.8	7.3	7.0	6.3
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	1.1	<0.1	<0.1	0.6
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	5.1	0.9	13.4	1.7	1.4
ANC as CaCO3	----	0.1	% CaCO3	0.5	<0.1	1.4	0.2	0.1
Fizz Rating	----	0	Fizz Unit	0	0	1	0	0
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.03	0.04	0.03	<0.02	<0.02
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.03	0.04	0.03	0.05	<0.01
Sample Preparation Method								
Amount	----	0.01	kg	2.52	2.66	3.02	2.56	2.82

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP27015	MP27016	MP27017	MP27018	MP27019
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-051	EB1324001-052	EB1324001-053	EB1324001-054	EB1324001-055
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	4.4	5.1	6.0	8.0	7.2
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	3.4	<0.5	1.4	-80.2	<0.5
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	237	167	125	559	962
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	3.6	5.2	7.4	8.7	6.1
NAG (pH 4.5)	----	0.1	kg H2SO4/t	1.8	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	4.0	0.4	<0.1	<0.1	0.4
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	0.9	1.0	3.2	116	7.5
ANC as CaCO3	----	0.1	% CaCO3	<0.1	0.1	0.3	11.8	0.8
Fizz Rating	----	0	Fizz Unit	0	0	0	3	0
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.08	<0.02	<0.02	0.44	0.18
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.14	0.04	0.15	1.17	0.23
Sample Preparation Method								
Amount	----	0.01	kg	2.22	2.78	3.22	3.24	3.26

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP27020	MP27021	MP27022	MP27023	MP27024
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-056	EB1324001-057	EB1324001-058	EB1324001-059	EB1324001-060
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	7.4	6.5	4.1	4.2	5.5
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	176	18.4	245	217	-1.8
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	745	230	1240	998	204
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.3	4.2	2.2	2.3	5.9
NAG (pH 4.5)	----	0.1	kg H2SO4/t	115	2.5	154	114	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	120	8.0	158	119	1.0
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	49.5	0.6	7.6	3.3	2.4
ANC as CaCO3	----	0.1	% CaCO3	5.0	<0.1	0.8	0.3	0.2
Fizz Rating	----	0	Fizz Unit	2	0	0	0	0
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	7.35	0.38	8.19	7.14	0.02
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	7.38	0.62	8.25	7.19	0.02
Sample Preparation Method								
Amount	----	0.01	kg	3.94	2.38	3.90	2.96	3.06

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP27025	MP27026	MP27027	MP27028	MP27029
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-061	EB1324001-062	EB1324001-063	EB1324001-064	EB1324001-065
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	5.3	7.2	3.0	5.6	6.3
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-0.9	139	40.5	<0.5	-10.2
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	136	1260	4190	295	199
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	6.4	2.3	2.8	7.1	8.1
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	95.9	24.5	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	0.6	102	31.2	<0.1	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	2.1	42.7	2.0	4.0	10.2
ANC as CaCO3	----	0.1	% CaCO3	0.2	4.4	0.2	0.4	1.0
Fizz Rating	----	0	Fizz Unit	0	2	0	0	0
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	<0.02	5.42	0.87	0.03	<0.02
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.04	5.95	1.39	0.13	<0.01
Sample Preparation Method								
Amount	----	0.01	kg	2.36	3.00	3.06	1.84	2.74

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP27030	MP27031	MP27032	MP27033	MP27034
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-066	EB1324001-067	EB1324001-068	EB1324001-069	EB1324001-070
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	7.2	6.7	7.0	7.5	7.4
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-116	-2.0	-18.3	-16.8	89.4
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	199	45	176	187	301
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	10.9	5.4	7.5	8.2	2.7
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	33.7
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	2.2	<0.1	<0.1	37.7
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	117	2.0	18.3	16.8	78.9
ANC as CaCO3	----	0.1	% CaCO3	11.9	0.2	1.9	1.7	8.0
Fizz Rating	----	0	Fizz Unit	3	0	1	1	2
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.03	<0.02	<0.02	<0.02	5.50
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.03	<0.01	<0.01	<0.01	5.50
Sample Preparation Method								
Amount	----	0.01	kg	3.10	2.78	2.96	3.08	1.20

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP27035	MP27036	MP27037	MP27038	MP27039
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-071	EB1324001-072	EB1324001-073	EB1324001-074	EB1324001-075
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	7.7	8.2	8.3	8.4	8.6
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	39.2	12.6	-228	-410	-66.3
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	246	265	144	154	327
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	8.2	8.7	11.3	11.4	8.5
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	61.8	72.2	229	412	148
ANC as CaCO3	----	0.1	% CaCO3	6.3	7.4	23.3	42.1	15.1
Fizz Rating	----	0	Fizz Unit	2	2	3	5	3
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	3.30	2.18	0.03	0.06	0.25
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	3.30	2.77	0.03	0.06	2.67
Sample Preparation Method								
Amount	----	0.01	kg	1.32	1.40	1.00	1.10	1.34

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP27040	MP27041	MP27042	MP27043	MP27044
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-076	EB1324001-077	EB1324001-078	EB1324001-079	EB1324001-080
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.9	8.6	9.0	8.3	8.8
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	105	113	16.8	11.5	-81.2
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	300	271	277	1090	181
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	10.7	2.4	3.4	3.6	11.0
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	83.2	3.6	1.6	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	87.1	6.4	7.5	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	72.2	35.0	67.7	10.5	88.6
ANC as CaCO3	----	0.1	% CaCO3	7.4	3.6	6.9	1.1	9.0
Fizz Rating	----	0	Fizz Unit	2	2	2	1	2
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	5.78	4.84	1.06	0.68	0.15
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	5.78	4.84	2.76	0.72	0.24
Sample Preparation Method								
Amount	----	0.01	kg	1.24	1.28	1.20	0.14	0.92

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP27045	MP27046	MP27047	MP27048	MP27049
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00	19-SEP-2013 15:00
Compound	CAS Number	LOR	Unit	EB1324001-081	EB1324001-082	EB1324001-083	EB1324001-084	EB1324001-085
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.4	6.4	7.1	7.7	8.2
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-280	156	139	-206	-161
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	309	317	419	403	144
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	8.2	2.3	2.9	11.2	10.8
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	93.3	24.8	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	103	31.5	<0.1	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	319	18.3	76.3	220	165
ANC as CaCO3	----	0.1	% CaCO3	32.5	1.9	7.8	22.4	16.8
Fizz Rating	----	0	Fizz Unit	4	1	2	3	3
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	1.23	5.68	6.98	0.14	0.03
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	1.26	5.68	7.04	0.45	0.14
Sample Preparation Method								
Amount	----	0.01	kg	0.96	1.30	1.46	2.70	3.20

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP27050	MP27051	----	----	----
			Client sampling date / time	19-SEP-2013 15:00	19-SEP-2013 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1324001-086	EB1324001-087	----	----	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	7.9	7.8	----	----	----
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-50.5	-32.4	----	----	----
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	409	2770	----	----	----
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	9.1	10.4	----	----	----
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	----	----	----
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	----	----	----
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	53.3	53.5	----	----	----
ANC as CaCO3	----	0.1	% CaCO3	5.4	5.4	----	----	----
Fizz Rating	----	0	Fizz Unit	2	2	----	----	----
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.06	0.59	----	----	----
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.09	0.69	----	----	----
Sample Preparation Method								
Amount	----	0.01	kg	3.12	0.16	----	----	----

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EB1311977**	Page	: 1 of 13
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 16-MAY-2013
Sampler	: ----	Issue Date	: 07-JUN-2013
Site	: ----		
		No. of samples received	: 51
Quote number	: BN/027/13	No. of samples analysed	: 51

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
SATISH.TRIVEDI	2 IC Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils
Stephen Hislop	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **ASS: EA013 (ANC) Fizz Rating: 0- None; 1- Slight; 2- Moderate; 3- Strong; 4- Very Strong; 5- Lime.**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02701	MP02702	MP02703	MP02704	MP02705
			Client sampling date / time	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00
Compound	CAS Number	LOR	Unit	EB1311977-001	EB1311977-002	EB1311977-003	EB1311977-004	EB1311977-005
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	4.7	6.0	8.2	5.0	4.9
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	6.8	94.1	-71.2	2.5	109
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	130	1890	526	43	2320
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	6.2	2.5	8.8	5.5	2.4
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	58.4	<0.1	<0.1	75.3
NAG (pH 7.0)	----	0.1	kg H2SO4/t	0.4	69.9	<0.1	0.7	85.2
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	0.9	21.9	144	0.6	23.0
ANC as CaCO3	----	0.1	% CaCO3	<0.1	2.2	14.7	<0.1	2.3
Fizz Rating	----	0	Fizz Unit	0	1	3	0	1
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.05	3.68	1.23	0.04	4.01
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.25	3.79	2.38	0.10	4.31

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02706	MP02707	MP02708	MP02709	MP02710
			Client sampling date / time	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00
Compound	CAS Number	LOR	Unit	EB1311977-006	EB1311977-007	EB1311977-008	EB1311977-009	EB1311977-010
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.2	7.7	8.5	8.1	7.6
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	113	41.2	-71.6	-23.8	8.0
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	364	1120	179	592	1510
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.3	8.6	10.2	10.8	10.0
NAG (pH 4.5)	----	0.1	kg H2SO4/t	96.4	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	108	<0.1	<0.1	<0.1	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	64.7	76.9	104	98.8	107
ANC as CaCO3	----	0.1	% CaCO3	6.6	7.8	10.6	10.1	10.9
Fizz Rating	----	0	Fizz Unit	2	2	3	2	3
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	5.77	3.74	0.87	2.18	3.62
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	5.80	3.86	1.06	2.45	3.76

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02711	MP02712	MP02713	MP02714	MP02715
			Client sampling date / time	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00
Compound	CAS Number	LOR	Unit	EB1311977-011	EB1311977-012	EB1311977-013	EB1311977-014	EB1311977-015
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	7.5	7.9	5.0	7.5	7.4
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	255	5.7	0.9	15.4	199
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	1590	1080	160	612	1800
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.1	9.4	6.1	8.4	3.4
NAG (pH 4.5)	----	0.1	kg H2SO4/t	187	<0.1	<0.1	<0.1	2.8
NAG (pH 7.0)	----	0.1	kg H2SO4/t	198	<0.1	0.7	<0.1	4.3
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	31.5	147	1.2	88.9	50.7
ANC as CaCO3	----	0.1	% CaCO3	3.2	15.0	0.1	9.1	5.2
Fizz Rating	----	0	Fizz Unit	1	3	0	2	2
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	9.26	4.40	0.07	3.37	8.07
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	9.37	4.99	0.07	3.41	8.17

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02716	MP02717	MP02718	MP02719	MP02720
			Client sampling date / time	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00
Compound	CAS Number	LOR	Unit	EB1311977-016	EB1311977-017	EB1311977-018	EB1311977-019	EB1311977-020
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.7	4.9	6.0	8.0	4.6
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-77.7	-3.9	-9.9	-29.6	59.4
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	173	87	77	431	135
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	10.8	6.8	8.4	9.1	4.7
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	0.2	<0.1	<0.1	0.8
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	112	5.1	10.8	167	<0.5
ANC as CaCO3	----	0.1	% CaCO3	11.4	0.5	1.1	17.0	<0.1
Fizz Rating	----	0	Fizz Unit	3	0	0	3	0
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.74	0.04	0.03	4.37	0.91
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	1.12	0.04	0.03	4.49	1.94

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02721	MP02722	MP02723	MP02724	MP02725
			Client sampling date / time	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00
Compound	CAS Number	LOR	Unit	EB1311977-021	EB1311977-022	EB1311977-023	EB1311977-024	EB1311977-025
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	7.0	6.9	5.2	3.7	4.5
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	194	120	-0.8	2.1	279
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	1520	1400	101	157	1140
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.2	2.3	6.7	5.1	2.2
NAG (pH 4.5)	----	0.1	kg H2SO4/t	138	100	<0.1	<0.1	134
NAG (pH 7.0)	----	0.1	kg H2SO4/t	156	114	0.3	1.3	144
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	57.2	54.7	2.0	<0.5	18.0
ANC as CaCO3	----	0.1	% CaCO3	5.8	5.6	0.2	<0.1	1.8
Fizz Rating	----	0	Fizz Unit	2	2	0	0	1
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	8.10	5.49	0.04	0.05	9.63
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	8.21	5.71	0.04	0.07	9.71

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02726	MP02727	MP02728	MP02729	MP02730
			Client sampling date / time	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00
Compound	CAS Number	LOR	Unit	EB1311977-026	EB1311977-027	EB1311977-028	EB1311977-029	EB1311977-030
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	5.5	7.1	8.4	7.6	4.6
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-4.9	-39.1	-154	23.2	147
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	124	1110	280	948	457
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	8.3	10.2	11.3	8.6	2.5
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	57.0
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	63.5
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	6.1	55.6	171	101	1.4
ANC as CaCO3	----	0.1	% CaCO3	0.6	5.7	17.4	10.3	0.1
Fizz Rating	----	0	Fizz Unit	0	2	3	3	0
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.04	0.42	0.28	0.41	4.82
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.04	0.54	0.56	4.06	4.86

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02731	MP02732	MP02733	MP02734	MP02735
			Client sampling date / time	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00
Compound	CAS Number	LOR	Unit	EB1311977-031	EB1311977-032	EB1311977-033	EB1311977-034	EB1311977-035
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	4.6	6.4	7.9	7.6	6.8
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	328	-1.1	50.6	274	160
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	2000	172	796	1660	1840
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.1	7.6	9.0	2.1	2.4
NAG (pH 4.5)	----	0.1	kg H2SO4/t	180	<0.1	<0.1	162	87.4
NAG (pH 7.0)	----	0.1	kg H2SO4/t	188	<0.1	<0.1	171	97.4
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	9.0	6.3	90.8	44.6	33.2
ANC as CaCO3	----	0.1	% CaCO3	0.9	0.6	9.3	4.5	3.4
Fizz Rating	----	0	Fizz Unit	0	0	2	2	2
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	10.8	0.07	4.54	10.3	6.22
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	11.0	0.17	4.62	10.4	6.31

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02736	MP02737	MP02738	MP02739	MP02740
			Client sampling date / time	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00
Compound	CAS Number	LOR	Unit	EB1311977-036	EB1311977-037	EB1311977-038	EB1311977-039	EB1311977-040
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	4.8	8.0	4.6	6.0	4.1
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	24.7	29.3	308	-6.1	242
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	189	591	1350	67	593
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	4.4	8.7	2.1	7.3	2.2
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	159	<0.1	148
NAG (pH 7.0)	----	0.1	kg H2SO4/t	2.0	<0.1	170	<0.1	157
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	1.6	87.9	10.4	7.3	10.2
ANC as CaCO3	----	0.1	% CaCO3	0.2	9.0	1.1	0.7	1.0
Fizz Rating	----	0	Fizz Unit	0	2	0	0	0
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.15	3.83	10.3	0.04	8.19
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.86	3.83	10.4	0.04	8.24

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02741	MP02742	MP02743	MP02744	MP02745
			Client sampling date / time	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00
Compound	CAS Number	LOR	Unit	EB1311977-041	EB1311977-042	EB1311977-043	EB1311977-044	EB1311977-045
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	3.2	6.1	4.5	7.4	5.5
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	106	139	265	150	-3.0
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	1810	1630	1760	1270	108
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.3	2.5	2.4	2.5	8.5
NAG (pH 4.5)	----	0.1	kg H2SO4/t	76.0	60.2	81.0	63.7	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	82.5	75.9	91.2	71.5	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	6.9	52.8	18.3	64.1	4.2
ANC as CaCO3	----	0.1	% CaCO3	0.7	5.4	1.9	6.5	0.4
Fizz Rating	----	0	Fizz Unit	0	2	1	2	0
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	3.51	6.19	9.17	6.04	0.04
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	3.69	6.27	9.26	7.01	0.04

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02746	MP02747	MP02748	MP02749	MP02750
			Client sampling date / time	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00	10-MAY-2013 15:00
Compound	CAS Number	LOR	Unit	EB1311977-046	EB1311977-047	EB1311977-048	EB1311977-049	EB1311977-050
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.9	7.2	7.8	8.6	8.6
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-52.5	-29.2	45.7	-31.7	-116
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	188	932	459	134	239
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	10.6	7.5	2.6	9.2	11.0
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	40.3	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	46.7	<0.1	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	151	62.6	62.9	91.4	208
ANC as CaCO3	----	0.1	% CaCO3	15.4	6.4	6.4	9.3	21.2
Fizz Rating	----	0	Fizz Unit	3	2	2	2	4
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.63	0.91	2.43	1.35	1.63
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	3.22	1.09	3.55	1.95	3.01

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02751	----	----	----	----
			Client sampling date / time	10-MAY-2013 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1311977-051	----	----	----	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	9.1	----	----	----	----
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-76.4	----	----	----	----
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	93	----	----	----	----
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	10.8	----	----	----	----
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	----	----	----	----
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	----	----	----	----
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	98.4	----	----	----	----
ANC as CaCO3	----	0.1	% CaCO3	10.0	----	----	----	----
Fizz Rating	----	0	Fizz Unit	3	----	----	----	----
EA023 : TOS-ASS								
Total Oxidisable Sulphur (ASS)	----	0.02	%	0.29	----	----	----	----
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.72	----	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1630270**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 08 9288 2000	Telephone	: +61-7-3243 7222
Project	: NSW Geochem Characterisation	Date Samples Received	: 23-Dec-2016 11:50
Order number	: ----	Date Analysis Commenced	: 29-Dec-2016
C-O-C number	: ----	Issue Date	: 19-Jan-2017 16:42
Sampler	: ----		
Site	: ----		
Quote number	: BN/344/16		
No. of samples received	: 7		
No. of samples analysed	: 7		

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Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Satishkumar Trivedi	Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils, Stafford, QLD

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA030/EA032 (Saturated paste pH/EC): These analyses were performed on pulp.
- EA031 (Saturated Paste pH): NATA accreditation does not cover the performance of this service.
- EA032 (Saturated Paste EC): NATA accreditation does not cover the performance of this service.
- ASS: EA013 (ANC) Fizz Rating: 0- None; 1- Slight; 2- Moderate; 3- Strong; 4- Very Strong; 5- Lime.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP-WR001	MP-WR002	MP-WR003	MP-WR004	MP-WR005
			Client sampling date / time	29-Dec-2016 00:00	29-Dec-2016 00:00	29-Dec-2016 00:00	29-Dec-2016 00:00	29-Dec-2016 00:00
Compound	CAS Number	LOR	Unit	EB1630270-001	EB1630270-002	EB1630270-003	EB1630270-004	EB1630270-005
				Result	Result	Result	Result	Result
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-94.8	-17.4	-109	<0.5	-11.9
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	8.8	7.8	10.4	5.4	8.1
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	1.8	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	123	17.4	138	<0.5	12.5
ANC as CaCO3	----	0.1	% CaCO3	12.6	1.8	14.0	<0.1	1.3
Fizz Rating	----	0	Fizz Unit	3	1	3	0	1
EA031: pH (saturated paste)								
ø pH (Saturated Paste)	----	0.1	pH Unit	7.2	6.0	8.7	5.2	8.2
EA032: Electrical Conductivity (saturated paste)								
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	236	261	176	41	109
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	890	<100	390	180	<100
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.92	<0.01	0.96	<0.01	0.02

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP-WR006	MP-WR007	-----	-----	-----
			Client sampling date / time	29-Dec-2016 00:00	29-Dec-2016 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1630270-006	EB1630270-007	--------	--------	--------
				Result	Result	----	----	----
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	**94.6**	**28.6**	----	----	----
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	**2.4**	**2.7**	----	----	----
NAG (pH 4.5)	----	0.1	kg H2SO4/t	**48.9**	**28.4**	----	----	----
NAG (pH 7.0)	----	0.1	kg H2SO4/t	**57.8**	**36.5**	----	----	----
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	<0.5	**23.7**	----	----	----
ANC as CaCO3	----	0.1	% CaCO3	<0.1	**2.4**	----	----	----
Fizz Rating	----	0	Fizz Unit	**0**	**1**	----	----	----
EA031: pH (saturated paste)								
ø **pH (Saturated Paste)**	----	0.1	pH Unit	**3.4**	**6.4**	----	----	----
EA032: Electrical Conductivity (saturated paste)								
ø **Electrical Conductivity (Saturated Paste)**	----	1	µS/cm	**886**	**318**	----	----	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	**20100**	**3460**	----	----	----
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	**3.09**	**1.71**	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1710527**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 08 9288 2000	Telephone	: +61-7-3243 7222
Project	: NSW Geochem Characterisation	Date Samples Received	: 23-May-2017 10:00
Order number	: ----	Date Analysis Commenced	: 26-May-2017
C-O-C number	: ----	Issue Date	: 07-Jun-2017 11:11
Sampler	: ----		
Site	: ----		
Quote number	: BN/344/16		
No. of samples received	: 8		
No. of samples analysed	: 8		

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This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ben Felgendrejeris		Brisbane Acid Sulphate Soils, Stafford, QLD
Greg Vogel	Laboratory Manager	Brisbane Acid Sulphate Soils, Stafford, QLD
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD

General Comments

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Where moisture determination has been performed, results are reported on a dry weight basis.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA031 (Saturated Paste pH): NATA accreditation does not cover the performance of this service.
- EA032 (Saturated Paste EC): NATA accreditation does not cover the performance of this service.
- ASS: EA013 (ANC) Fizz Rating: 0- None; 1- Slight; 2- Moderate; 3- Strong; 4- Very Strong; 5- Lime.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP-WR008	MP-WR009	MP-WR010	MP-WR011	MP-WR012
			Client sampling date / time	[22-May-2017]	[22-May-2017]	[22-May-2017]	[22-May-2017]	[22-May-2017]
Compound	CAS Number	LOR	Unit	EB1710527-001	EB1710527-002	EB1710527-003	EB1710527-004	EB1710527-005
				Result	Result	Result	Result	Result
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-20.8	-118	-9.3	91.8	-250
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	7.1	11.1	8.1	2.4	11.4
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	78.0	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	84.7	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	20.8	122	9.3	6.7	250
ANC as CaCO3	----	0.1	% CaCO3	2.1	12.5	0.9	0.7	25.4
Fizz Rating	----	0	Fizz Unit	1	3	0	1	4
EA031: pH (saturated paste)								
ø pH (Saturated Paste)	----	0.1	pH Unit	8.1	8.9	7.4	6.3	9.0
EA032: Electrical Conductivity (saturated paste)								
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	199	206	260	1070	179
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	5.3	----	----	----	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	<100	1750	130	1440	<100
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	<0.01	0.14	<0.01	3.22	<0.01

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP-WR013	MP-WR014	MP-WR015	----	----
			Client sampling date / time	[22-May-2017]	[22-May-2017]	[22-May-2017]	----	----
Compound	CAS Number	LOR	Unit	EB1710527-006	EB1710527-007	EB1710527-008	--------	--------
				Result	Result	Result	----	----
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	**68.5**	**3.4**	**-122**	----	----
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	**2.4**	**4.2**	**10.9**	----	----
NAG (pH 4.5)	----	0.1	kg H2SO4/t	**64.0**	**0.6**	<0.1	----	----
NAG (pH 7.0)	----	0.1	kg H2SO4/t	**73.0**	**2.3**	<0.1	----	----
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	<0.5	<0.5	**139**	----	----
ANC as CaCO3	----	0.1	% CaCO3	<0.1	<0.1	**14.2**	----	----
Fizz Rating	----	0	Fizz Unit	**0**	**0**	**3**	----	----
EA031: pH (saturated paste)								
ø pH (Saturated Paste)	----	0.1	pH Unit	**4.7**	**4.6**	**9.0**	----	----
EA032: Electrical Conductivity (saturated paste)								
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	**461**	**521**	**280**	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	**12.8**	**12.2**	----	----	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	**810**	**3000**	**200**	----	----
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	**2.24**	**0.11**	**0.56**	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1714356**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 08 9288 2000	Telephone	: +61-7-3243 7222
Project	: ----	Date Samples Received	: 13-Jul-2017 11:00
Order number	: ----	Date Analysis Commenced	: 15-Jul-2017
C-O-C number	: ----	Issue Date	: 04-Aug-2017 10:02
Sampler	: ----		
Site	: ----		
Quote number	: BN/344/16		
No. of samples received	: 6		
No. of samples analysed	: 6		

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Signatories

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Signatories	*Position*	*Accreditation Category*
Ben Felgendrejeris		Brisbane Acid Sulphate Soils, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD

General Comments

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA031 (Saturated Paste pH): NATA accreditation does not cover the performance of this service.
- EA032 (Saturated Paste EC): NATA accreditation does not cover the performance of this service.
- ASS: EA013 (ANC) Fizz Rating: 0- None; 1- Slight; 2- Moderate; 3- Strong; 4- Very Strong; 5- Lime.

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP-WRO25 92-93m	MP-WRO26 37-38m	MP-WRO27 85-86m	MP-WRO28 114-115m	MP-WRO29 162-163m
			Client sampling date / time	[10-Jul-2017]	[10-Jul-2017]	[10-Jul-2017]	[10-Jul-2017]	[10-Jul-2017]
Compound	CAS Number	LOR	Unit	EB1714356-001	EB1714356-002	EB1714356-003	EB1714356-004	EB1714356-005
				Result	Result	Result	Result	Result
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-119	0.9	12.8	-24.6	3.7
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	11.3	5.7	2.7	7.8	2.7
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	18.1	<0.1	14.4
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	0.7	21.1	<0.1	18.6
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	122	<0.5	12.9	25.5	26.6
ANC as CaCO3	----	0.1	% CaCO3	12.5	<0.1	1.3	2.6	2.7
Fizz Rating	----	0	Fizz Unit	3	0	1	1	1
EA031: pH (saturated paste)								
ø pH (Saturated Paste)	----	0.1	pH Unit	9.0	6.6	6.2	8.7	7.7
EA032: Electrical Conductivity (saturated paste)								
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	210	247	744	233	572
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	<1.0	<1.0	<1.0	<1.0	<1.0
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	230	760	700	<100	420
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.10	0.03	0.84	0.03	0.99

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP-WRO30 97-98m	----	----	----	----
			Client sampling date / time	[10-Jul-2017]	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1714356-006	--------	--------	--------	--------
				Result	----	----	----	----
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	**-114**	----	----	----	----
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	**9.8**	----	----	----	----
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	----	----	----	----
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	----	----	----	----
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	**239**	----	----	----	----
ANC as CaCO3	----	0.1	% CaCO3	**24.4**	----	----	----	----
Fizz Rating	----	0	Fizz Unit	**3**	----	----	----	----
EA031: pH (saturated paste)								
ø pH (Saturated Paste)	----	0.1	pH Unit	**8.3**	----	----	----	----
EA032: Electrical Conductivity (saturated paste)								
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	**296**	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	<1.0	----	----	----	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	**150**	----	----	----	----
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	**4.08**	----	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1714044**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services EB
Address	: Level 6 141 Queen St BRISBANE QLD 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 08 9288 2000	Telephone	: +61-7-3243 7222
Project	: NSW Geochem Characterisation	Date Samples Received	: 10-Jul-2017 15:11
Order number	: ----	Date Analysis Commenced	: 11-Jul-2017
C-O-C number	: ----	Issue Date	: 28-Jul-2017 17:22
Sampler	: ----		
Site	: ----		
Quote number	: BN/344/16		
No. of samples received	: 9		
No. of samples analysed	: 9		

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Signatories

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Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Ben Felgendrejeris		Brisbane Acid Sulphate Soils, Stafford, QLD
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD

General Comments

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^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA031 & EA032 (Saturated Paste pH and EC) have been performed on pulverized samples
- EA031 (Saturated Paste pH): NATA accreditation does not cover the performance of this service.
- EA032 (Saturated Paste EC): NATA accreditation does not cover the performance of this service.
- ASS: EA013 (ANC) Fizz Rating: 0- None; 1- Slight; 2- Moderate; 3- Strong; 4- Very Strong; 5- Lime.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP-WR016	MP-WR017	MP-WR018	MP-WR019	MP-WR020
			Client sampling date / time	[06-Jul-2017]	[06-Jul-2017]	[06-Jul-2017]	[06-Jul-2017]	[06-Jul-2017]
Compound	CAS Number	LOR	Unit	EB1714044-001	EB1714044-002	EB1714044-003	EB1714044-004	EB1714044-005
				Result	Result	Result	Result	Result
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	-942	-3.6	-944	15.8	-963
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	11.1	7.6	10.9	6.0	11.4
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	<0.1	<0.1
NAG (pH 7.0)	----	0.1	kg H2SO4/t	<0.1	<0.1	<0.1	1.6	<0.1
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	944	4.5	945	1.0	964
ANC as CaCO3	----	0.1	% CaCO3	96.3	0.4	96.4	0.1	98.3
Fizz Rating	----	0	Fizz Unit	5	0	5	0	5
EA031: pH (saturated paste)								
ø pH (Saturated Paste)	----	0.1	pH Unit	8.2	7.6	8.5	5.1	8.4
EA032: Electrical Conductivity (saturated paste)								
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	151	356	78	1450	74
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	190	550	<100	8180	720
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.08	0.03	0.02	0.55	0.03

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP-WR021	MP-WR022	MP-WR023	MP-WR024	----
			Client sampling date / time	[06-Jul-2017]	[06-Jul-2017]	[06-Jul-2017]	[06-Jul-2017]	----
Compound	CAS Number	LOR	Unit	EB1714044-006	EB1714044-007	EB1714044-008	EB1714044-009	--------
				Result	Result	Result	Result	----
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	51.0	53.4	-38.5	192	----
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.6	3.2	5.4	2.2	----
NAG (pH 4.5)	----	0.1	kg H2SO4/t	48.0	5.8	<0.1	129	----
NAG (pH 7.0)	----	0.1	kg H2SO4/t	49.6	13.8	1.6	136	----
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	31.0	82.2	39.7	7.9	----
ANC as CaCO3	----	0.1	% CaCO3	3.2	8.4	4.0	0.8	----
Fizz Rating	----	0	Fizz Unit	2	2	2	0	----
EA031: pH (saturated paste)								
ø pH (Saturated Paste)	----	0.1	pH Unit	8.3	8.4	6.1	7.6	----
EA032: Electrical Conductivity (saturated paste)								
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	356	326	169	783	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1	%	----	----	2.7	<1.0	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	140	150	110	530	----
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	2.68	4.43	0.04	6.53	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1714919**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 08 9288 2000	Telephone	: +61-7-3243 7222
Project	: NSW Geochem Characterisation	Date Samples Received	: 21-Jul-2017 12:15
Order number	: ----	Date Analysis Commenced	: 25-Jul-2017
C-O-C number	: ----	Issue Date	: 07-Aug-2017 14:01
Sampler	: ----		
Site	: ----		
Quote number	: BN/344/16		
No. of samples received	: 2		
No. of samples analysed	: 2		

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Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Greg Vogel	Laboratory Manager	Brisbane Acid Sulphate Soils, Stafford, QLD
Satishkumar Trivedi	Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils, Stafford, QLD
Satishkumar Trivedi	Acid Sulfate Soils Supervisor	Brisbane Inorganics, Stafford, QLD

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA031 (Saturated Paste pH): NATA accreditation does not cover the performance of this service.
- EA032 (Saturated Paste EC): NATA accreditation does not cover the performance of this service.
- ASS: EA013 (ANC) Fizz Rating: 0- None; 1- Slight; 2- Moderate; 3- Strong; 4- Very Strong; 5- Lime.

Analytical Results

Sub-Matrix: ROCK (Matrix: SOIL)			Client sample ID	MP_WR031 12m-13m	MP_WR032 28m-29m	-----	-----	-----
			Client sampling date / time	[21-Jul-2017]	[21-Jul-2017]	----	----	----
Compound	CAS Number	LOR	Unit	EB1714919-001	EB1714919-002	--------	--------	--------
				Result	Result	----	----	----
EA009: Nett Acid Production Potential								
Net Acid Production Potential	----	0.5	kg H2SO4/t	<0.5	**-1.1**	----	----	----
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	**5.5**	**7.1**	----	----	----
NAG (pH 4.5)	----	0.1	kg H2SO4/t	<0.1	<0.1	----	----	----
NAG (pH 7.0)	----	0.1	kg H2SO4/t	**2.0**	<0.1	----	----	----
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	<0.5	**1.1**	----	----	----
ANC as CaCO3	----	0.1	% CaCO3	<0.1	**0.1**	----	----	----
Fizz Rating	----	0	Fizz Unit	**0**	**0**	----	----	----
EA031: pH (saturated paste)								
ø pH (Saturated Paste)	----	0.1	pH Unit	**7.1**	**6.5**	----	----	----
EA032: Electrical Conductivity (saturated paste)								
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	**169**	**118**	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	<1.0	**1.7**	----	----	----
ED040: Sulfur as SO4 2-								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	<100	<100	----	----	----
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	<0.01	<0.01	----	----	----

ALS Environmental

Acid Buffering Characteristic Curve (ABCC) REPORT

Batch: EB1324167

CONTACT:	RUSSEL STAINES	**LABORATORY:**	Brisbane
CLIENT:	SRK CONSULTING (AUSTRALASIA)	**DATE SAMPLED:**	10/05/2013
ADDRESS:	PO BOX 943	**DATE RECEIVED:**	4/10/2013
	WEST PERTH	**DATE COMPLETED:**	28/10/2013
	AUSTRALIA 6872	**SAMPLE TYPE:**	Soil
		No. of SAMPLES:	8

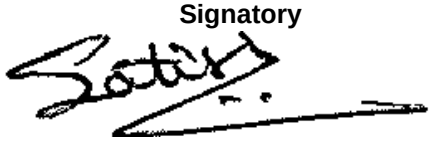
COMMENTS

EA046 : NATA accreditation does not cover performance of this service.
All samples have been repeated and confirm for ANC and ABCC.

ISSUING LABORATORY: ALS BRISBANE

Address:	32 Shand Street	**Telephone:**	07 3243 7222
	STAFFORD QLD 4053	**Facsimile:**	07 3243 7218
	AUSTRALIA	**E-mail:**	Satishkumar.Trivedi@alsglobal.com

Signatory



Work Order :	EB1324167	Client ID:	SRK CONSULTING (AUSTRALASIA)

	Sub Matrix			Soil
	Client Sample Identification 1			MP02702
	Client Sample Identification 2			
	Sample Date			10/05/2013
Method	Analyte	Units	LOR	

	2
	EB1324167

EA046 - A Titration information

HCl Molarity:	**M**	**0.1**
Increments:	**mL**	**0.5**
Weight	**(g)**	**2**
ANC	**kgH2SO4/t**	**21.9**

EA046 -B - Curve information

Addition	mLs added (total)	kg H2SO4/t	pH	Addition	mLs added (total)	kg H2SO4/t	pH
0	0	0	6.67				
1	0.5	1.225	5.59				
2	1	2.45	4.85				
3	1.5	3.675	3.77				
4	2	4.9	3.33				
5	2.5	6.125	3.11				
6	3	7.35	2.96				
7	3.5	8.575	2.85				
8	4	9.8	2.76				
9	4.5	11.025	2.68				
10	5	12.25	2.61				
11	5.5	13.475	2.56				
12	6	14.7	2.50				
13	6.5	15.925	2.46				
14	7	17.15	2.42				
15	7.5	18.375	2.38				

Work Order :	EB1324167	Client ID:	SRK CONSULTING (AUSTRALASIA)

	Sub Matrix			Soil
	Client Sample Identification 1			MP02702
	Client Sample Identification 2			0
	Sample Date			10/05/2013
Method	Analyte	Units	LOR	

2	Check
EB1324167	

EA046 - A Titration information

HCl Molarity:	**M**	**0.1**
Increments:	**mL**	**0.5**
Weight	**(g)**	**2**
ANC	**kgH2SO4/t**	**21.9**

EA046 -B - Curve information

Addition	mLs added (total)	kg H2SO4/t	pH	Addition	mLs added (total)	kg H2SO4/t	pH
0	0	0	6.76				
1	0.5	1.225	5.52				
2	1	2.45	4.09				
3	1.5	3.675	3.49				
4	2	4.9	3.22				
5	2.5	6.125	3.05				
6	3	7.35	2.93				
7	3.5	8.575	2.83				
8	4	9.8	2.75				
9	4.5	11.025	2.68				
10	5	12.25	2.62				
11	5.5	13.475	2.57				
12	6	14.7	2.53				
13	6.5	15.925	2.48				
14	7	17.15	2.45				
15	7.5	18.375	2.41				
16	8	19.6	2.38				

Work Order :	EB1324167	Client ID:	SRK CONSULTING (AUSTRALASIA)

	Sub Matrix			Soil
	Client Sample Identification 1			MP02706
	Client Sample Identification 2			
	Sample Date			10/05/2013
Method	Analyte	Units	LOR	

	4
	EB1324167

EA046 - A Titration information

HCl Molarity:	**M**	**0.5**
Increments:	**mL**	**0.2**
Weight	**(g)**	**2**
ANC	**kgH2SO4/t**	**64.7**

EA046 -B - Curve information

Addition	mLs added (total)	kg H2SO4/t	pH	Addition	mLs added (total)	kg H2SO4/t	pH
0	0	0	9.44				
1	0.2	2.45	6.47				
2	0.4	4.9	5.33				
3	0.6	7.35	3.47				
4	0.8	9.8	3.08				
5	1	12.25	2.89				
6	1.2	14.7	2.76				
7	1.4	17.15	2.65				
8	1.6	19.6	2.58				
9	1.8	22.05	2.51				
10	2	24.5	2.46				
11	2.2	26.95	2.37				

Work Order :	EB1324167	Client ID:	SRK CONSULTING (AUSTRALASIA)

	Sub Matrix			Soil
	Client Sample Identification 1			MP02710
	Client Sample Identification 2			
	Sample Date			10/05/2013
Method	Analyte	Units	LOR	

	5
	EB1324167

EA046 - A Titration information

HCl Molarity:	**M**	**0.5**
Increments:	**mL**	**0.4**
Weight	**(g)**	**2**
ANC	**kgH2SO4/t**	**107**

EA046 -B - Curve information

Addition	mLs added (total)	kg H2SO4/t	pH	Addition	mLs added (total)	kg H2SO4/t	pH
0	0	0	9.16				
1	0.4	4.9	6.65				
2	0.8	9.8	6.05				
3	1.2	14.7	5.59				
4	1.6	19.6	4.97				
5	2	24.5	4.18				
6	2.4	29.4	3.44				
7	2.8	34.3	3.12				
8	3.2	39.2	2.89				
9	3.6	44.1	2.75				
10	4	49	2.63				
11	4.4	53.9	2.52				
12	4.8	58.8	2.43				
13	5.2	63.7	2.35				

Work Order :	EB1324167	Client ID:	SRK CONSULTING (AUSTRALASIA)

	Sub Matrix			Soil
	Client Sample Identification 1			MP02712
	Client Sample Identification 2			
	Sample Date			10/05/2013
Method	Analyte	Units	LOR	

	7
	EB1324167

EA046 - A Titration information

HCl Molarity:	**M**	**0.5**
Increments:	**mL**	**0.4**
Weight	**(g)**	**2**
ANC	**kgH2SO4/t**	**147**

EA046 -B - Curve information

Addition	mLs added (total)	kg H2SO4/t	pH	Addition	mLs added (total)	kg H2SO4/t	pH
0	0	0	9.52				
1	0.4	4.9	6.72				
2	0.8	9.8	5.72				
3	1.2	14.7	3.25				
4	1.6	19.6	2.80				
5	2	24.5	2.59				
6	2.4	29.4	2.46				
7	2.8	34.3	2.36				

Work Order :	EB1324167	Client ID:	SRK CONSULTING (AUSTRALASIA)

	Sub Matrix			Soil
	Client Sample Identification 1			MP02716
	Client Sample Identification 2			
	Sample Date			10/05/2013
Method	Analyte	Units	LOR	

	10
	EB1324167

EA046 - A Titration information

HCl Molarity:	**M**	**0.5**
Increments:	**mL**	**0.4**
Weight	**(g)**	**2**
ANC	**kgH2SO4/t**	**112**

EA046 -B - Curve information

Addition	mLs added (total)	kg H2SO4/t	pH	Addition	mLs added (total)	kg H2SO4/t	pH
0	0	0	9.73				
1	0.4	4.9	7.14				
2	0.8	9.8	6.57				
3	1.2	14.7	6.37				
4	1.6	19.6	6.25				
5	2	24.5	6.16				
6	2.4	29.4	6.07				
7	2.8	34.3	5.98				
8	3.2	39.2	5.88				
9	3.6	44.1	5.75				
10	4	49	5.57				
11	4.4	53.9	5.25				
12	4.8	58.8	4.60				
13	5.2	63.7	3.48				
14	5.6	68.6	3.04				
15	6	73.5	2.81				
16	6.4	78.4	2.66				
17	6.8	83.3	2.55				
18	7.2	88.2	2.46				
19	7.6	93.1	2.38				

Work Order :	EB1324167	Client ID:	SRK CONSULTING (AUSTRALASIA)

	Sub Matrix			Soil
	Client Sample Identification 1			MP02727
	Client Sample Identification 2			
	Sample Date			10/05/2013
Method	Analyte	Units	LOR	
				14
				EB1324167

EA046 - A Titration information

HCl Molarity:	**M**	**0.5**
Increments:	**mL**	**0.2**
Weight	**(g)**	**2**
ANC	**kgH2SO4/t**	**55.6**

EA046 -B - Curve information

Addition	mLs added (total)	kg H2SO4/t	pH	Addition	mLs added (total)	kg H2SO4/t	pH
0	0	0	9.17				
1	0.2	2.45	6.29				
2	0.4	4.9	4.51				
3	0.6	7.35	3.42				
4	0.8	9.8	3.09				
5	1	12.25	2.91				
6	1.2	14.7	2.77				
7	1.4	17.15	2.66				
8	1.6	19.6	2.57				
9	1.8	22.05	2.50				
10	2	24.5	2.43				
11	2.2	26.95	2.37				

Work Order :	EB1324167	Client ID:	SRK CONSULTING (AUSTRALASIA)

	Sub Matrix			Soil
	Client Sample Identification 1			MP02743
	Client Sample Identification 2			
	Sample Date			10/05/2013
Method	Analyte	Units	LOR	

	21
	EB1324167

EA046 - A Titration information

HCl Molarity:	**M**	**0.1**
Increments:	**mL**	**0.2**
Weight	**(g)**	**2**
ANC	**kgH2SO4/t**	**18.3**

EA046 -B - Curve information

Addition	mLs added (total)	kg H2SO4/t	pH	Addition	mLs added (total)	kg H2SO4/t	pH
0	0	0	5.03				
1	0.2	0.49	3.93				
2	0.4	0.98	3.61				
3	0.6	1.47	3.43				
4	0.8	1.96	3.31				
5	1	2.45	3.22				
6	1.2	2.94	3.13				
7	1.4	3.43	3.06				
8	1.6	3.92	3.01				
9	1.8	4.41	2.96				
10	2	4.9	2.93				
11	2.2	5.39	2.90				
12	2.4	5.88	2.87				
13	2.6	6.37	2.84				
14	2.8	6.86	2.81				
15	3	7.35	2.78				
16	3.2	7.84	2.75				
17	3.4	8.33	2.73				
18	3.6	8.82	2.71				
19	3.8	9.31	2.68				
20	4	9.8	2.66				
21	4.2	10.29	2.65				
22	4.4	10.78	2.63				
23	4.6	11.27	2.61				
24	4.8	11.76	2.59				
25	5	12.25	2.58				
26	5.2	12.74	2.57				
27	5.4	13.23	2.56				
28	5.6	13.72	2.55				
29	5.8	14.21	2.53				
30	6	14.7	2.52				
31	6.2	15.19	2.51				
32	6.4	15.68	2.50				
33	6.6	16.17	2.49				
34	6.8	16.66	2.48				
35	7	17.15	2.47				

Work Order :	EB1324167	Client ID:	SRK CONSULTING (AUSTRALASIA)

	Sub Matrix			Soil
	Client Sample Identification 1			MP02749
	Client Sample Identification 2			
	Sample Date			10/05/2013
Method	Analyte	Units	LOR	

	23
	EB1324167

EA046 - A Titration information

HCl Molarity:	**M**	**0.5**
Increments:	**mL**	**0.2**
Weight	**(g)**	**2**
ANC	**kgH2SO4/t**	**91.4**

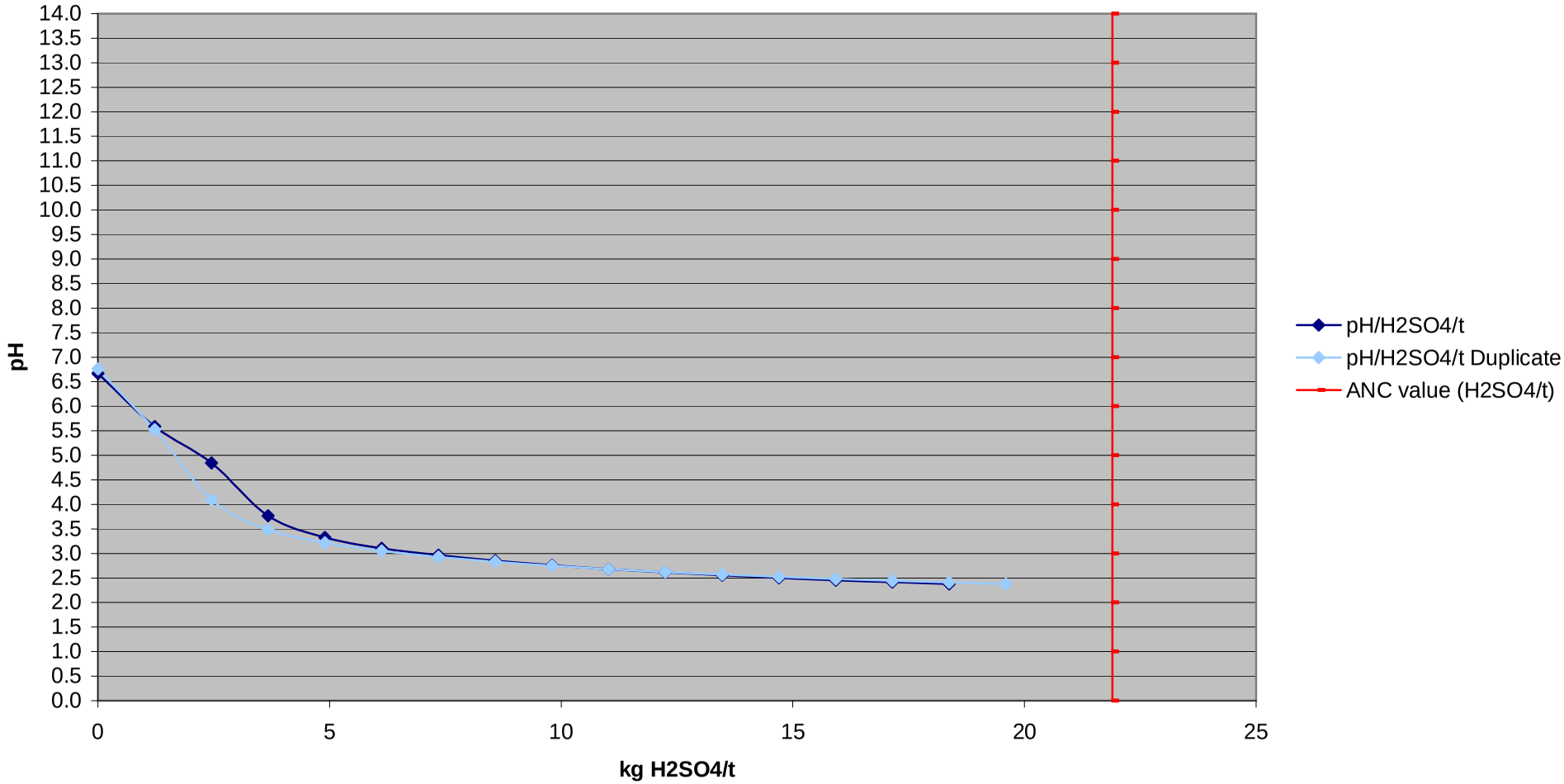
EA046 -B - Curve information

Addition	mLs added (total)	kg H2SO4/t	pH	Addition	mLs added (total)	kg H2SO4/t	pH
0	0	0	9.68				
1	0.2	2.45	7.70				
2	0.4	4.9	6.99				
3	0.6	7.35	6.64				
4	0.8	9.8	6.35				
5	1	12.25	6.00				
6	1.2	14.7	4.79				
7	1.4	17.15	3.56				
8	1.6	19.6	3.38				
9	1.8	22.05	3.15				
10	2	24.5	2.97				
11	2.2	26.95	2.84				
12	2.4	29.4	2.72				
13	2.6	31.85	2.62				
14	2.8	34.3	2.54				
15	3	36.75	2.47				
16	3.2	39.2	2.41				
17	3.4	41.65	2.35				

EB1324167 - 02 & 02 Check (MP02702)

Acid Buffering Characteristic Curve

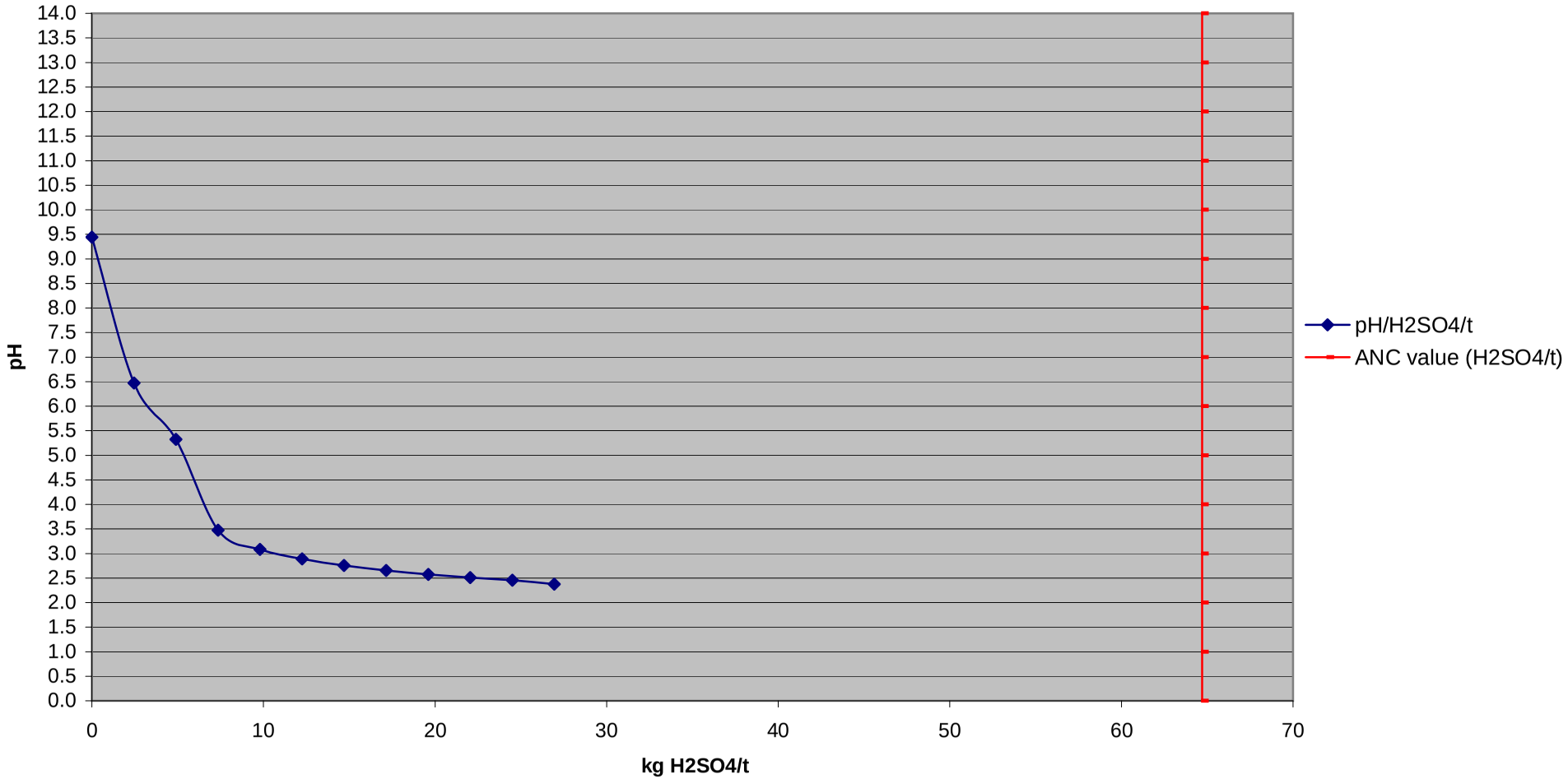
Titrating with 0.1M HCl, in increments of 0.5 mLs every 1000 seconds



EB1324167 - 04 (MP02706)

Acid Buffering Characteristic Curve

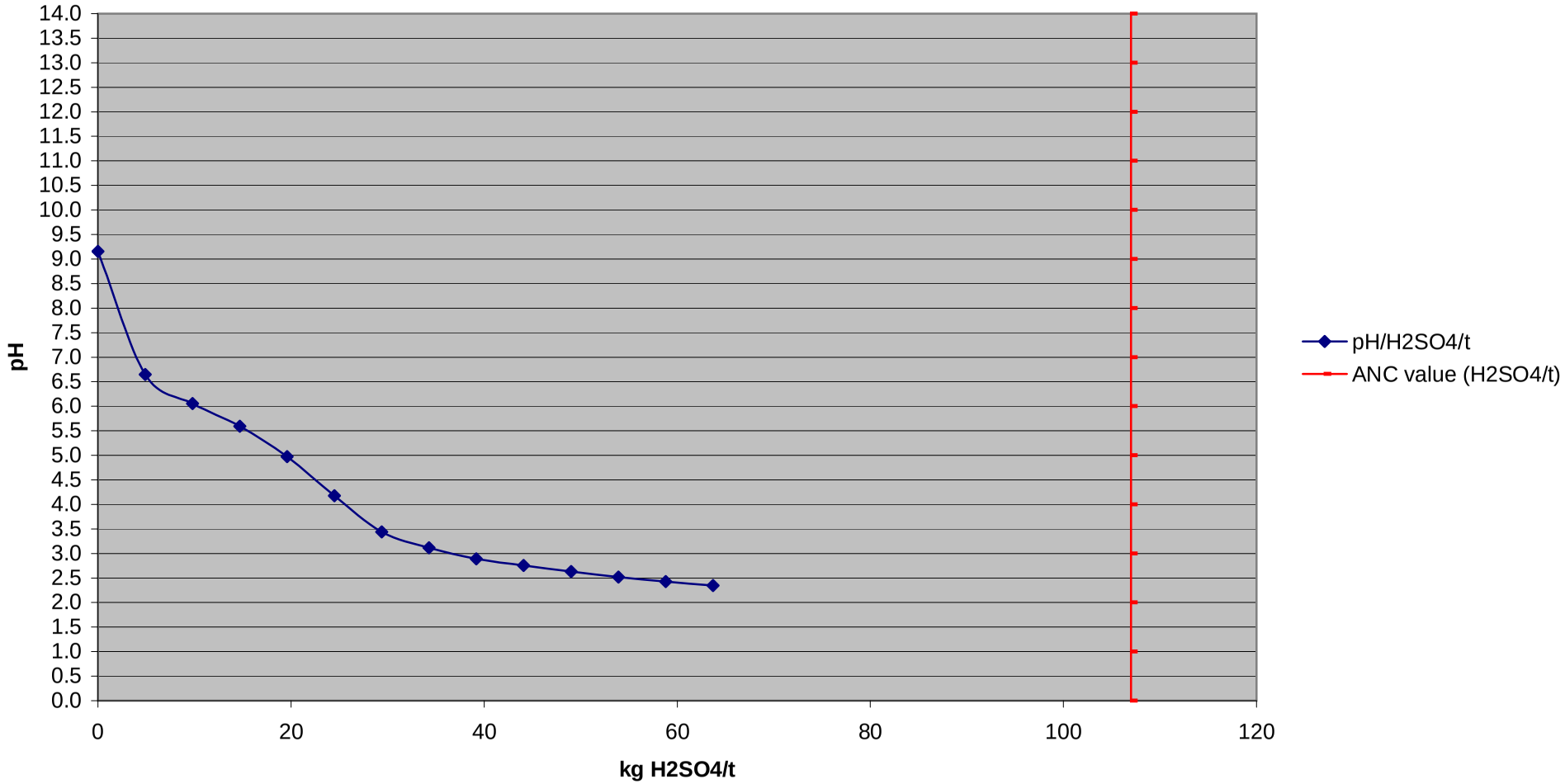
Titrating with 0.5M HCl, in increments of 0.2 mLs every 1000 seconds



EB1324167 - 05 (MP02710)

Acid Buffering Characteristic Curve

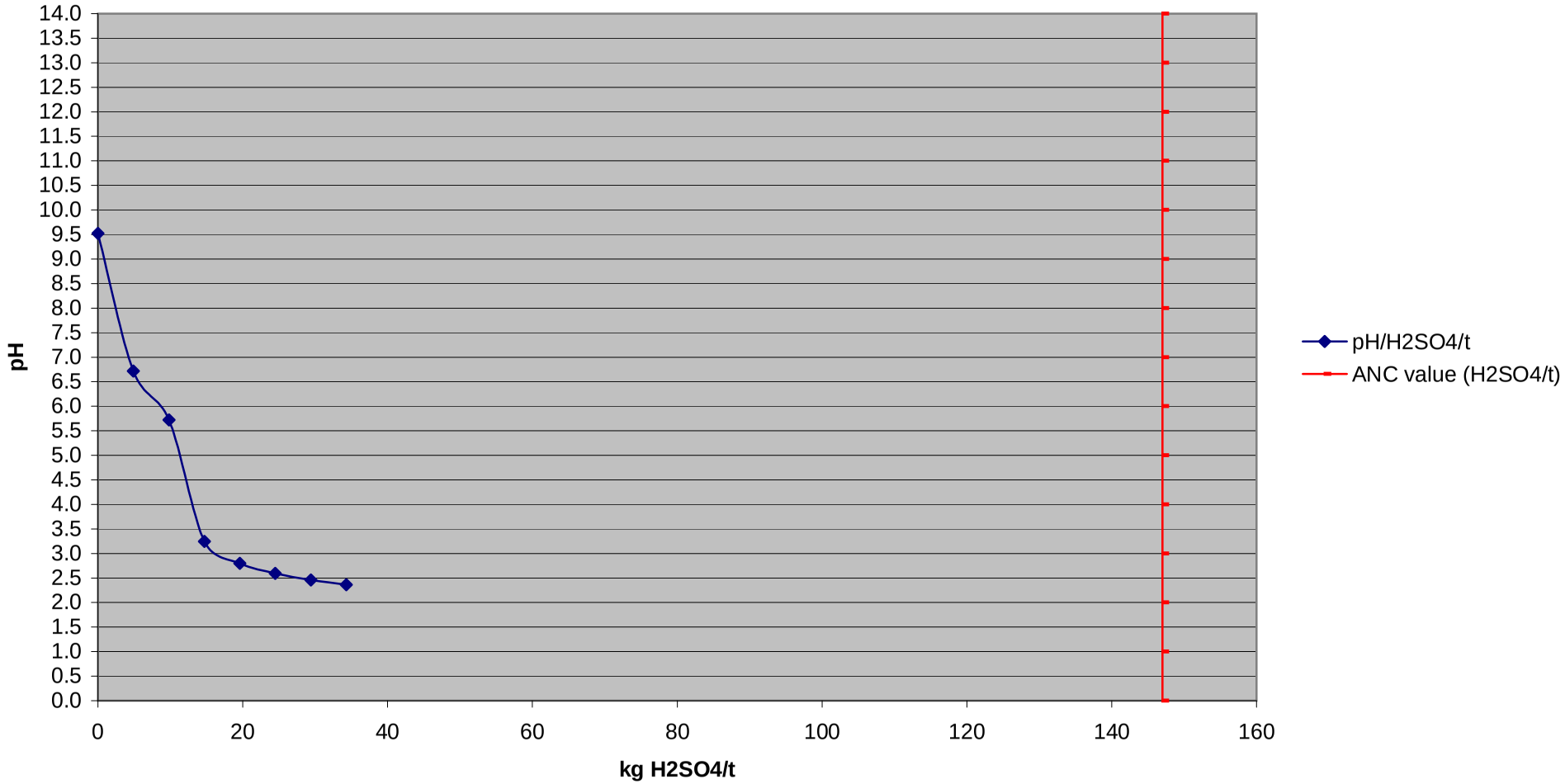
Titrating with 0.5M HCl, in increments of 0.4 mLs every 1000 seconds



EB1324167 - 07 (MP02712)

Acid Buffering Characteristic Curve

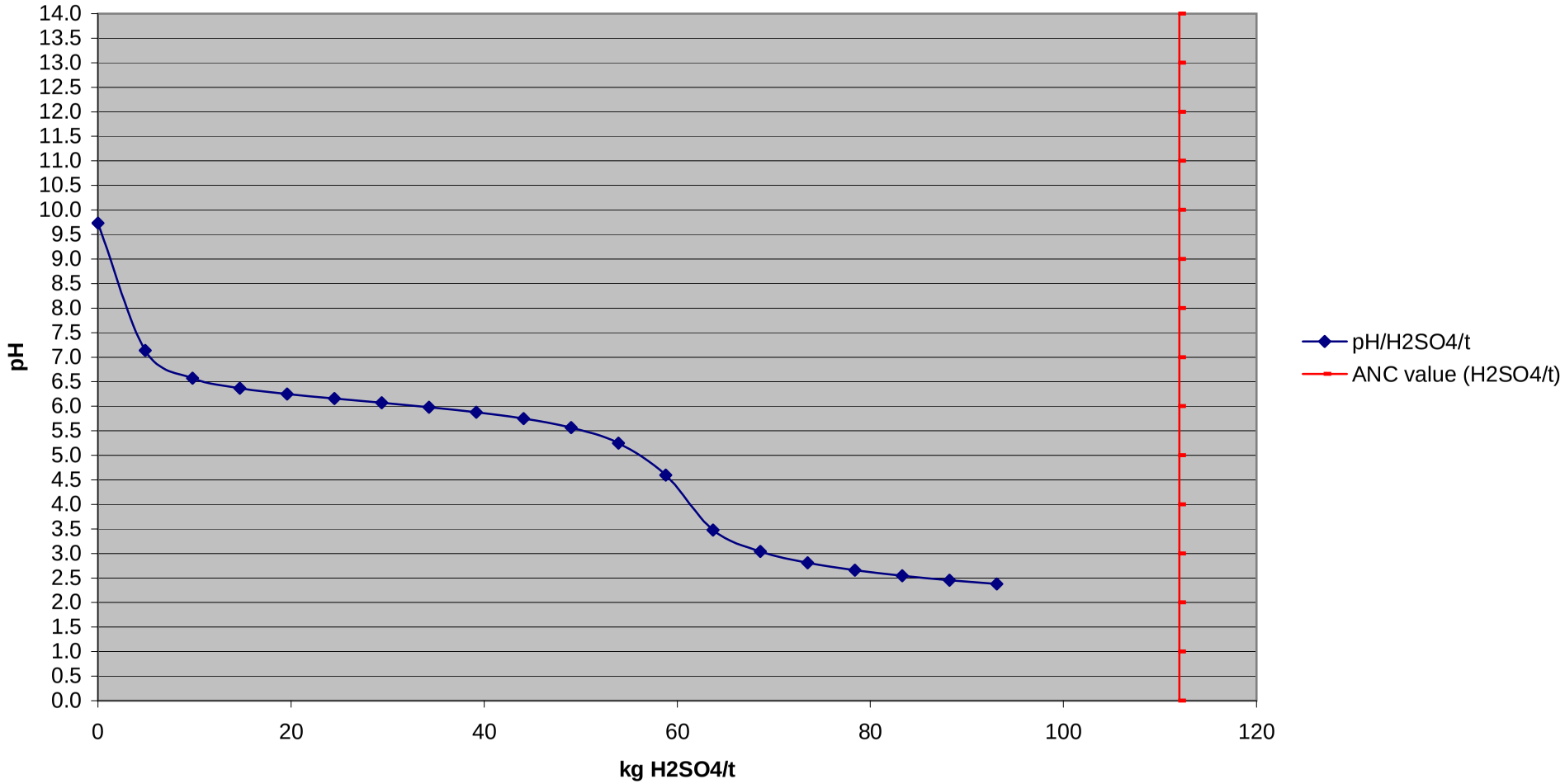
Titrating with 0.5M HCl, in increments of 0.4 mLs every 1000 seconds



EB1324167 - 10 (MP02716)

Acid Buffering Characteristic Curve

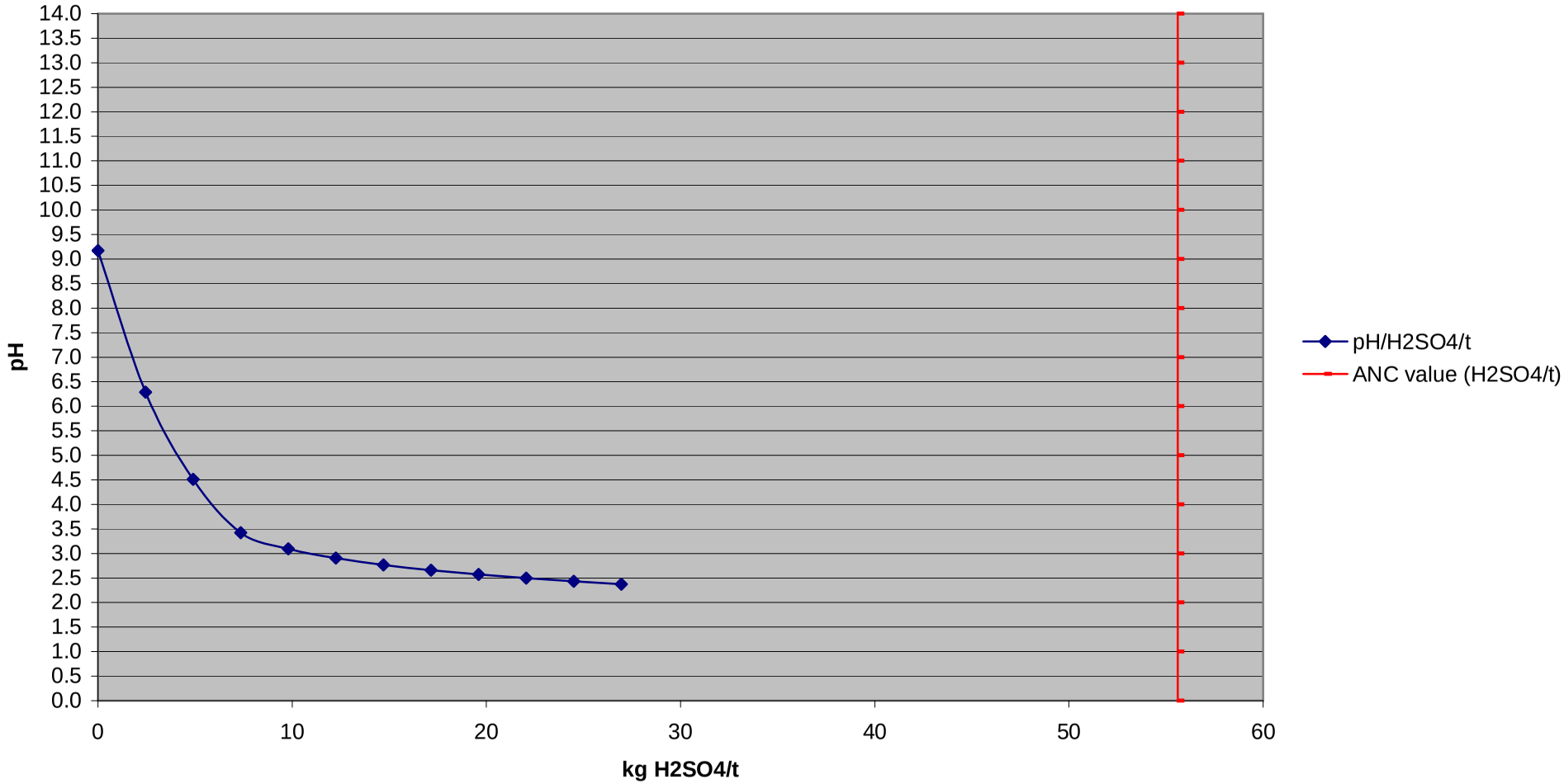
Titrating with 0.5M HCl, in increments of 0.4 mLs every 1000 seconds



EB1324167 - 14 (MP02727)

Acid Buffering Characteristic Curve

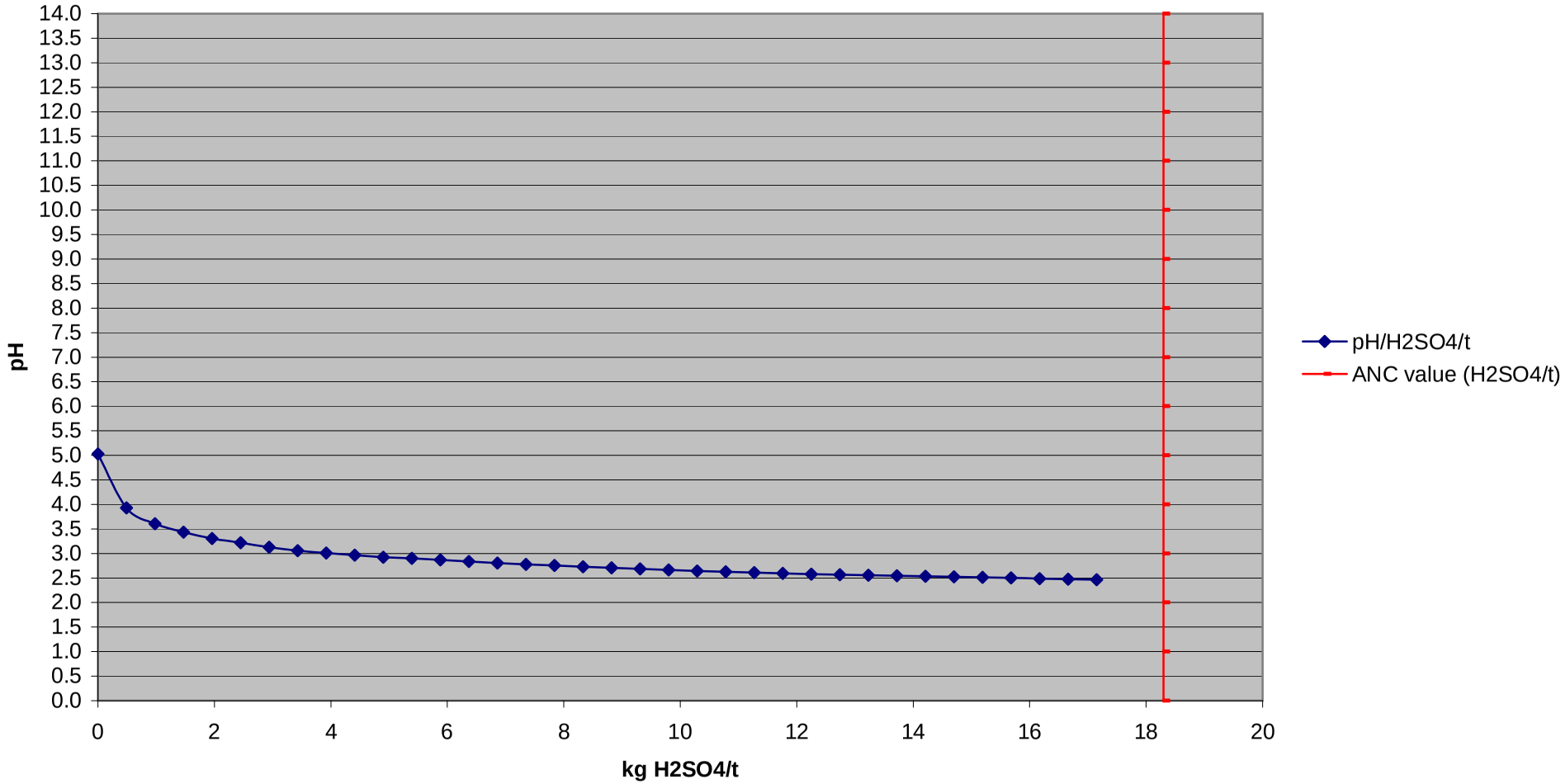
Titrating with 0.5M HCl, in increments of 0.2 mLs every 1000 seconds



EB1324167 - 21 (MP02743)

Acid Buffering Characteristic Curve

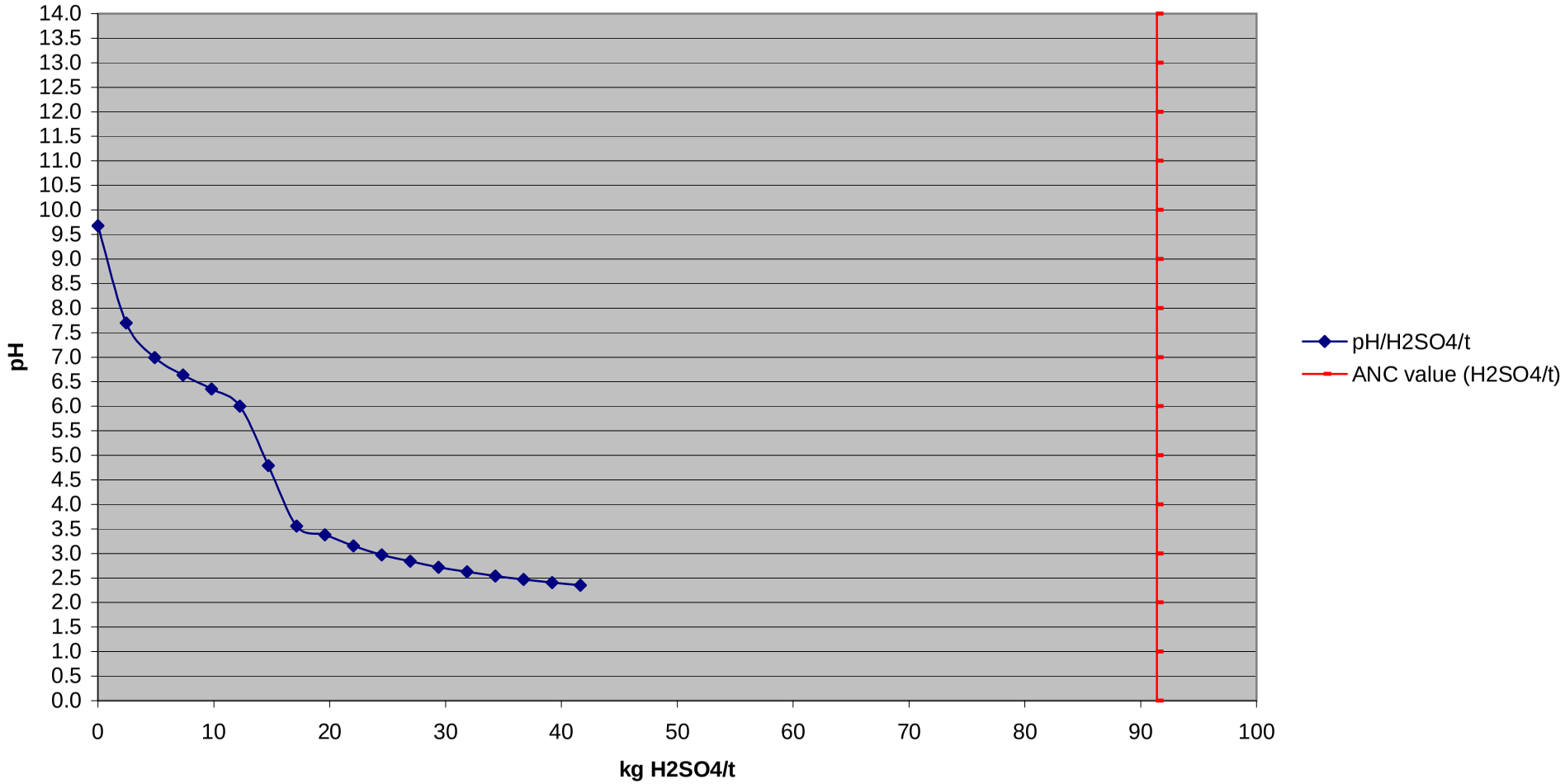
Titrating with 0.1M HCl, in increments of 0.2 mLs every 1000 seconds



EB1324167 - 23 (MP02749)

Acid Buffering Characteristic Curve

Titrating with 0.5M HCl, in increments of 0.2 mLs every 1000 seconds



Appendix D: Multi-element results

Australian Laboratory Services Pty. Ltd.
32 Shand Street
Stafford
Brisbane QLD 4053
Phone: +61 (7) 3243 7222 Fax: +61 (7) 3243 7218
www.alsglobal.com

Finalized Date: 18- OCT- 2013
Account: ALSENV

CERTIFICATE BR13182094

Project: EB1324001

P.O. No.:

This report is for 87 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 11- OCT- 2013.

The following have access to data associated with this certificate:

SUB RESULTS		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG- 22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME- MS41	51 anal. aqua regia ICPMS

To: ALS ENVIRONMENTAL
ATTN: SUB RESULTS
32 SHAND STREET
STAFFORD QLD 4053

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

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

Signature:

Shaun Kenny, Brisbane Laboratory Manager

Australian Laboratory Services Pty. Ltd.
32 Shand Street
Stafford
Brisbane QLD 4053
Phone: +61 (7) 3243 7222 Fax: +61 (7) 3243 7218
www.alsglobal.com

Project: EB1324001

CERTIFICATE OF ANALYSIS BR13182094

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	0.01	0.1	0.2	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2
MP26965		0.53	0.37	102.5	<0.2	<10	40	0.06	0.50	0.60	0.07	4.89	22.5	42	0.40	108.0
MP26966		0.22	1.40	33.4	0.2	<10	70	0.05	0.72	1.13	0.07	5.53	31.7	49	0.16	939
MP26967		0.28	1.61	52.9	<0.2	<10	40	0.18	0.07	0.48	1.80	34.9	24.7	12	0.16	201
MP26968		0.31	2.18	39.1	<0.2	<10	20	0.06	0.03	5.18	0.21	16.15	22.5	8	0.54	206
MP26969		0.31	2.19	19.7	<0.2	<10	30	0.09	0.03	3.62	0.06	24.4	21.8	19	1.52	201
MP26970		0.61	1.56	61.6	<0.2	<10	180	0.08	0.09	0.04	0.21	16.20	1.3	15	0.61	173.5
MP26971		0.06	1.47	25.3	<0.2	<10	70	0.06	0.48	0.54	0.01	22.9	26.0	45	0.28	100.0
MP26972		0.07	2.56	19.9	<0.2	<10	30	0.08	0.25	1.99	0.02	19.10	50.7	27	0.15	134.5
MP26973		0.04	0.44	4	<0.2	<10	10	<0.05	0.03	>25.0	0.20	7.82	4.2	31	0.58	6.9
MP26974		0.07	2.20	6.0	<0.2	<10	120	0.25	0.01	0.94	0.08	5.51	28.6	360	1.37	106.5
MP26975		0.47	0.22	109.5	<0.2	<10	20	0.05	6.12	1.18	10.50	8.03	21.9	10	0.11	237
MP26976		0.49	1.77	20.7	<0.2	<10	440	0.28	0.03	0.14	1.29	45.0	95.5	11	0.33	286
MP26977		0.01	0.15	<2	<0.2	<10	<10	<0.05	0.03	>25.0	0.24	5.29	1.3	9	<0.05	4.6
MP26978		0.49	1.87	22.1	1.0	<10	90	<0.05	0.73	1.65	0.09	8.45	20.2	27	1.90	1080
MP26979		0.08	2.48	15.6	<0.2	<10	20	0.12	0.03	6.24	0.04	24.1	22.3	22	0.28	136.5
MP26980		0.04	1.87	7.7	<0.2	<10	20	0.11	0.02	1.07	0.09	4.32	26.3	189	0.43	98.4
MP26981		0.04	1.80	7.2	<0.2	<10	10	0.06	0.02	3.33	0.06	3.46	20.0	116	0.09	76.5
MP26982		0.22	0.23	89.2	<0.2	<10	40	0.09	0.02	6.32	1.15	6.04	25.3	70	0.19	55.7
MP26983		0.29	1.63	49.4	<0.2	<10	60	0.07	0.03	3.26	0.07	15.25	25.4	1	0.27	152.0
MP26984		0.21	2.86	22.4	<0.2	<10	20	0.15	0.09	3.42	0.13	16.25	22.4	4	0.19	184.5
MP26985		0.11	1.28	33.2	<0.2	<10	40	0.06	0.65	1.49	0.02	18.30	25.9	1	0.18	237
MP26986		0.33	1.51	27.7	<0.2	<10	60	0.06	0.46	1.69	0.12	15.70	22.6	<1	0.20	883
MP26987		0.10	1.53	17.8	<0.2	<10	40	0.09	0.11	2.47	0.01	10.55	19.2	1	0.17	74.1
MP26988		0.09	0.24	34	<0.2	<10	20	0.06	0.07	>25.0	0.14	9.87	6.2	7	0.14	26.8
MP26989		0.01	0.19	6	<0.2	<10	10	0.05	0.02	>25.0	0.17	5.76	4.4	16	0.42	3.9
MP26990		0.41	1.48	114.5	<0.2	<10	400	0.32	0.03	0.21	0.40	33.0	58.6	5	0.43	369
MP26991		0.20	1.83	52.6	<0.2	<10	50	0.11	0.05	6.87	6.09	23.5	56.9	2	1.20	273
MP26992		0.09	2.70	9.6	<0.2	<10	30	0.11	0.04	4.84	0.07	20.6	24.6	2	0.49	187.5
MP26993		0.16	2.86	96.8	<0.2	<10	70	0.10	0.03	5.59	0.11	20.9	25.0	<1	0.65	206
MP26994		0.69	1.99	31.4	<0.2	<10	70	0.09	0.03	3.48	0.11	10.90	26.0	1	0.59	195.5
MP26995		0.27	1.75	14.8	<0.2	<10	170	0.15	0.02	0.23	0.47	26.1	38.4	15	0.76	224
MP26996		0.13	2.45	13.6	<0.2	<10	60	0.15	0.02	0.70	0.40	23.8	24.8	2	0.48	150.5
MP26997		0.14	3.42	22.1	<0.2	<10	40	0.11	0.03	3.50	0.20	20.7	29.6	2	0.62	195.5
MP26998		0.16	2.10	8.5	<0.2	<10	50	0.10	0.40	3.40	0.01	20.3	24.1	3	0.14	272
MP26999		0.06	1.85	29.4	<0.2	<10	70	0.52	0.18	0.11	0.02	24.6	5.5	34	1.01	47.1
MP27000		0.20	1.86	9.1	<0.2	<10	70	0.24	0.03	0.40	0.45	24.2	13.8	3	0.27	206
MP27001		0.26	2.32	50.6	<0.2	<10	30	0.10	0.05	4.35	0.42	21.8	29.4	1	0.20	193.0
MP27002		0.07	2.63	65.7	<0.2	<10	90	0.84	0.31	0.05	0.06	38.6	5.2	59	1.25	44.4
MP27003		0.31	1.08	163.0	<0.2	<10	30	0.06	0.05	3.58	0.42	14.35	74.0	<1	0.16	388
MP27004		0.17	1.24	178.5	<0.2	<10	40	0.07	0.52	0.88	0.97	7.70	18.8	1	0.59	30.0

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CERTIFICATE OF ANALYSIS BR13182094

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni
	Units	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOR	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
MP26965		5.92	0.86	0.08	0.38	0.02	0.019	0.29	2.5	1.8	0.72	1070	2.84	0.01	0.06	4.8
MP26966		7.00	2.62	0.12	0.16	0.01	0.049	0.26	2.6	5.0	1.41	894	0.97	0.01	<0.05	9.0
MP26967		5.10	4.73	0.10	0.12	0.29	0.044	0.31	18.4	7.6	0.66	1550	0.39	0.02	0.06	6.3
MP26968		5.57	5.51	0.08	0.14	0.01	0.013	0.16	8.2	7.1	1.32	1880	0.59	0.01	0.10	6.4
MP26969		5.03	6.60	0.08	0.19	0.02	0.018	0.41	13.4	7.8	1.86	2900	0.97	0.01	0.12	4.7
MP26970		4.32	7.19	0.07	0.20	0.05	0.087	0.37	8.6	3.2	0.73	479	1.94	0.02	0.05	0.7
MP26971		5.59	3.15	0.12	0.36	0.02	0.008	0.25	12.3	8.2	1.02	284	3.25	0.02	<0.05	5.7
MP26972		7.74	6.05	0.12	0.23	0.01	0.006	0.14	10.3	14.9	2.37	736	0.99	0.02	<0.05	8.8
MP26973		0.65	0.89	<0.05	0.09	0.03	0.008	0.07	5.3	3.3	0.79	201	0.81	0.01	0.09	11.2
MP26974		4.64	5.99	0.15	0.14	0.01	0.009	0.16	3.3	19.0	1.78	511	0.08	0.02	<0.05	72.7
MP26975		5.32	0.48	0.30	0.49	1.37	0.047	0.18	4.4	0.5	0.08	424	2.15	<0.01	0.05	5.2
MP26976		4.84	7.25	0.17	0.19	0.03	0.036	0.58	20.6	9.4	0.74	2000	0.08	0.02	<0.05	10.7
MP26977		0.42	0.36	<0.05	0.03	0.02	<0.005	0.01	5.5	0.8	0.24	226	0.05	0.01	0.11	4.4
MP26978		7.67	3.93	0.09	0.30	0.04	0.038	0.44	4.7	5.1	1.43	1580	1.10	0.01	0.09	6.1
MP26979		5.64	11.60	0.12	0.16	0.01	0.039	0.07	13.3	13.1	1.35	1250	0.16	0.02	0.20	6.1
MP26980		3.35	4.12	0.06	0.16	0.02	0.005	0.07	2.1	15.1	1.46	773	0.14	0.02	0.14	54.5
MP26981		3.21	3.31	0.07	0.09	<0.01	<0.005	0.04	1.7	11.7	1.34	786	0.36	0.02	0.12	24.7
MP26982		5.16	0.49	0.05	0.13	0.03	0.017	0.16	3.0	0.9	0.88	2900	0.62	0.01	<0.05	35.8
MP26983		5.04	5.30	0.07	0.17	<0.01	0.012	0.23	7.9	8.7	1.39	1030	0.36	0.03	0.07	6.0
MP26984		5.92	11.90	0.15	0.20	0.02	0.022	0.08	8.3	16.4	2.22	1950	1.04	0.03	0.27	5.1
MP26985		5.41	2.88	0.09	0.33	0.03	0.014	0.22	9.9	6.6	1.19	492	1.36	0.02	<0.05	6.0
MP26986		7.84	3.07	0.12	0.31	0.06	0.048	0.19	8.4	7.9	1.38	706	0.75	0.01	0.07	4.9
MP26987		4.69	3.74	0.07	0.16	<0.01	0.008	0.14	5.2	14.4	2.11	397	0.71	0.02	<0.05	6.8
MP26988		1.31	0.53	<0.05	0.11	0.02	0.008	0.09	6.4	1.1	0.34	502	0.31	0.01	0.09	17.9
MP26989		0.57	0.37	<0.05	0.05	0.02	<0.005	0.09	4.5	1.3	0.31	424	0.08	0.01	0.11	7.7
MP26990		6.52	5.35	0.08	0.13	0.01	0.051	0.36	10.6	3.3	0.37	1770	0.43	0.01	<0.05	9.9
MP26991		5.38	6.54	0.09	0.20	1.25	0.022	0.25	12.3	8.9	1.46	2750	1.50	0.02	0.06	18.1
MP26992		5.46	10.25	0.10	0.20	0.01	0.024	0.13	11.2	16.5	1.99	1070	0.26	0.03	0.24	5.4
MP26993		5.80	8.07	0.07	0.16	0.01	0.027	0.33	11.3	16.5	1.75	1060	0.34	0.02	0.08	6.1
MP26994		5.23	4.30	0.06	0.21	0.05	0.013	0.45	5.9	6.3	1.94	2400	1.18	0.02	0.07	6.5
MP26995		8.43	6.20	0.11	0.18	0.05	0.023	0.18	12.4	7.8	0.69	1080	0.36	0.03	0.06	17.4
MP26996		6.27	8.32	0.09	0.13	0.03	0.026	0.26	11.9	12.2	1.18	2110	0.47	0.02	0.18	9.7
MP26997		7.18	10.05	0.10	0.22	0.02	0.049	0.20	11.5	12.5	3.07	2390	2.00	0.03	0.08	8.1
MP26998		6.37	5.68	0.08	0.33	0.01	0.017	0.22	11.1	6.8	1.84	1380	1.26	0.03	0.20	6.0
MP26999		5.92	7.56	0.07	0.25	0.01	0.056	0.17	14.3	3.5	0.17	273	1.54	0.01	0.06	5.5
MP27000		4.59	6.45	0.13	0.20	0.29	0.028	0.43	14.2	6.7	0.73	720	0.19	0.03	0.06	4.9
MP27001		5.78	8.11	0.08	0.19	0.03	0.042	0.18	11.6	8.3	0.94	4060	1.55	0.03	0.21	7.4
MP27002		5.89	8.06	0.08	0.23	0.06	0.058	0.26	21.5	4.3	0.15	265	1.04	0.02	0.06	7.5
MP27003		9.83	2.69	0.09	0.31	0.15	0.021	0.16	8.5	5.0	0.65	1920	1.97	0.04	0.33	19.5
MP27004		6.07	3.57	0.07	0.25	0.12	0.030	0.30	4.2	5.9	1.40	2220	1.43	0.01	<0.05	4.1

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CERTIFICATE OF ANALYSIS BR13182094

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
	LOR	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02
MP26965		2110	12.4	7.5	0.013	6.01	1.83	1.7	6.5	<0.2	55.6	<0.01	1.65	0.7	0.006	0.08
MP26966		1860	4.4	4.2	0.005	6.16	0.79	2.0	15.4	<0.2	94.4	<0.01	1.31	0.4	<0.005	0.05
MP26967		2140	59.7	4.7	<0.001	0.01	1.26	11.0	0.6	0.4	86.6	<0.01	<0.01	2.1	0.121	0.06
MP26968		2000	2.7	5.3	<0.001	0.57	0.69	3.3	0.6	<0.2	402	<0.01	0.01	0.8	0.027	0.10
MP26969		2090	6.4	16.5	<0.001	0.58	0.45	4.0	0.5	<0.2	262	<0.01	0.07	0.9	0.064	0.20
MP26970		1130	26.1	8.0	<0.001	0.46	1.55	4.4	2.7	<0.2	32.2	<0.01	0.53	0.9	0.041	0.16
MP26971		2420	4.0	4.2	0.038	4.86	0.54	2.3	13.0	<0.2	17.3	<0.01	2.04	1.4	<0.005	0.03
MP26972		1990	3.8	2.8	0.005	5.11	1.25	3.1	9.4	<0.2	82.7	<0.01	0.63	1.1	<0.005	0.03
MP26973		140	5.4	4.6	0.002	0.15	1.20	2.5	0.6	<0.2	801	<0.01	0.01	0.8	<0.005	0.07
MP26974		2380	1.0	29.8	<0.001	0.01	0.88	13.4	0.2	<0.2	31.2	<0.01	<0.01	0.8	0.117	0.28
MP26975		2440	21.7	3.4	0.001	6.68	2.22	0.9	81.9	<0.2	67.2	<0.01	1.27	0.8	<0.005	0.07
MP26976		730	9.4	4.9	<0.001	0.02	1.00	10.3	0.8	0.4	41.1	0.01	<0.01	1.7	0.082	0.10
MP26977		1490	2.9	0.5	<0.001	0.02	0.20	1.3	0.6	<0.2	351	<0.01	0.02	0.5	<0.005	<0.02
MP26978		2030	13.0	12.7	0.001	4.25	1.52	2.5	4.8	<0.2	166.5	<0.01	2.90	0.7	0.037	0.20
MP26979		1910	2.5	2.2	<0.001	0.03	0.78	9.4	0.4	0.2	284	0.01	0.01	1.1	0.091	0.03
MP26980		1430	2.3	4.1	<0.001	0.02	0.93	3.1	0.2	<0.2	31.7	<0.01	0.01	0.4	0.160	0.02
MP26981		1120	1.2	1.5	<0.001	0.04	1.22	2.7	0.2	<0.2	76.2	<0.01	<0.01	0.3	0.123	<0.02
MP26982		1390	9.5	4.8	<0.001	0.14	1.26	7.1	0.4	<0.2	291	<0.01	0.01	0.4	<0.005	0.04
MP26983		2090	3.9	7.4	<0.001	0.54	0.87	3.4	0.8	<0.2	234	<0.01	0.10	1.1	0.018	0.09
MP26984		1990	36.9	2.2	0.001	0.35	1.54	8.8	0.7	0.3	180.0	0.01	0.05	1.0	0.184	0.05
MP26985		2210	5.3	3.9	0.011	5.13	1.66	1.8	5.8	<0.2	66.7	<0.01	1.34	1.1	<0.005	0.05
MP26986		2070	6.7	3.2	0.001	8.16	1.17	1.8	12.8	<0.2	72.4	<0.01	2.78	0.9	0.005	0.03
MP26987		2810	2.3	3.5	0.002	2.79	0.45	3.5	2.8	<0.2	113.0	<0.01	0.40	1.1	<0.005	0.03
MP26988		380	7.8	4.1	0.004	0.58	0.99	2.8	0.7	<0.2	324	<0.01	0.02	1.5	<0.005	0.04
MP26989		180	4.1	4.6	<0.001	0.03	0.19	2.5	0.5	<0.2	453	<0.01	0.01	0.4	0.006	0.03
MP26990		1450	2.6	15.3	<0.001	0.02	1.18	13.5	0.5	0.5	31.7	0.01	0.01	2.6	0.057	0.07
MP26991		3010	21.8	10.3	0.006	0.67	1.58	6.7	2.5	<0.2	557	<0.01	0.01	1.1	0.040	0.10
MP26992		2010	4.6	5.1	<0.001	0.06	0.64	7.1	0.4	0.2	407	0.01	0.01	1.2	0.160	0.04
MP26993		2250	1.6	10.1	<0.001	0.36	0.60	5.4	0.4	<0.2	387	<0.01	0.01	1.1	0.026	0.08
MP26994		2020	30.8	11.0	0.001	1.09	1.44	3.0	0.4	<0.2	229	<0.01	0.02	0.7	0.028	0.16
MP26995		1640	8.8	19.1	<0.001	0.02	0.97	8.8	0.7	0.4	45.0	0.01	<0.01	1.2	0.067	0.10
MP26996		2400	5.3	13.0	<0.001	0.01	0.78	7.0	0.4	0.2	35.0	<0.01	<0.01	1.8	0.136	0.09
MP26997		1780	15.1	5.8	0.049	0.77	0.76	9.7	3.1	0.2	318	<0.01	0.14	0.7	0.118	0.07
MP26998		2040	8.5	4.4	<0.001	2.20	0.93	3.9	1.2	<0.2	235	<0.01	1.71	0.9	0.084	0.05
MP26999		890	58.2	16.1	0.001	0.09	1.30	5.7	0.5	0.7	21.8	<0.01	0.14	5.5	0.035	0.13
MP27000		1730	8.0	3.0	<0.001	0.01	1.43	11.2	0.5	0.4	84.1	0.01	0.01	2.3	0.137	0.03
MP27001		2000	17.6	5.8	0.005	0.24	0.89	7.6	0.4	<0.2	246	0.01	0.01	1.3	0.080	0.06
MP27002		1070	196.0	24.1	<0.001	0.03	5.50	6.7	1.7	0.9	41.2	<0.01	0.55	7.5	0.030	0.18
MP27003		1750	34.4	3.2	0.002	6.80	5.73	2.0	0.4	<0.2	174.5	<0.01	0.01	0.7	0.041	0.12
MP27004		1970	30.0	8.0	<0.001	5.79	1.18	2.4	1.9	<0.2	137.0	<0.01	0.88	0.7	0.008	0.09

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CERTIFICATE OF ANALYSIS BR13182094

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	U	V	W	Y	Zn	Zr
	Units	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.05	1	0.05	0.05	2	0.5
MP26965		0.23	11	0.32	4.54	55	12.8
MP26966		0.09	28	0.15	4.26	67	4.8
MP26967		0.84	105	<0.05	15.90	505	3.9
MP26968		0.11	62	0.15	6.29	118	4.7
MP26969		0.18	78	0.18	8.16	163	6.8
MP26970		0.25	96	0.12	4.84	253	7.4
MP26971		0.26	32	0.18	7.15	29	11.7
MP26972		0.16	62	0.11	5.68	29	7.5
MP26973		0.95	10	0.10	6.52	50	2.7
MP26974		0.15	100	0.22	3.74	90	5.3
MP26975		0.32	6	0.14	5.98	3740	15.7
MP26976		0.65	135	<0.05	23.6	443	4.3
MP26977		0.46	11	0.17	10.75	18	1.2
MP26978		0.19	33	0.27	6.10	82	8.8
MP26979		0.17	138	0.31	8.67	94	4.0
MP26980		0.08	54	0.28	3.59	153	5.3
MP26981		0.07	57	0.28	2.62	42	2.4
MP26982		0.13	15	0.29	5.68	1180	5.3
MP26983		0.26	61	0.34	7.39	78	5.7
MP26984		0.20	178	0.44	8.55	141	5.0
MP26985		0.22	27	0.12	5.69	26	10.7
MP26986		0.19	30	0.51	4.38	59	9.6
MP26987		0.11	38	0.24	6.68	19	4.5
MP26988		1.27	5	0.29	9.66	25	3.1
MP26989		1.06	8	0.44	6.66	18	1.4
MP26990		0.89	113	<0.05	18.10	158	2.7
MP26991		0.24	93	0.43	15.60	1610	6.4
MP26992		0.24	126	0.31	9.40	88	4.3
MP26993		0.20	86	0.37	6.48	95	5.7
MP26994		0.20	43	0.21	7.26	172	7.4
MP26995		0.63	120	<0.05	29.1	189	4.9
MP26996		0.35	91	0.20	11.55	280	5.2
MP26997		0.13	148	0.25	9.20	226	6.0
MP26998		0.21	60	0.19	8.72	84	9.5
MP26999		0.54	117	0.07	3.55	135	7.7
MP27000		0.73	150	<0.05	16.35	434	6.1
MP27001		0.34	123	0.30	8.17	333	6.7
MP27002		1.18	126	<0.05	5.09	87	7.7
MP27003		0.20	37	0.23	7.19	140	10.2
MP27004		0.18	40	0.21	5.23	386	7.7

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CERTIFICATE OF ANALYSIS BR13182094

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	0.01	0.1	0.2	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2
MP27005		0.54	1.06	41.7	0.5	<10	60	<0.05	1.29	0.76	0.10	16.65	17.5	<1	0.37	3140
MP27006		0.93	2.65	31.4	<0.2	<10	290	0.39	0.02	0.14	2.64	10.35	27.1	108	0.80	102.5
MP27007		0.07	2.03	27.4	<0.2	<10	20	0.07	0.37	0.03	0.10	15.45	66.0	31	0.18	138.5
MP27008		0.05	0.84	16.0	<0.2	<10	20	0.24	0.21	0.01	0.05	2.12	1.5	31	0.16	201
MP27009		0.04	2.63	10.8	<0.2	<10	10	0.11	0.27	0.37	0.03	23.5	31.0	15	0.21	43.9
MP27010		1.00	0.62	91.9	<0.2	<10	200	2.15	0.14	0.23	5.68	50.0	383	32	1.51	587
MP27011		0.01	0.48	2.0	<0.2	<10	20	0.27	0.14	0.01	0.08	66.4	5.5	17	0.39	21.5
MP27012		0.18	3.42	28.3	<0.2	<10	680	0.05	0.05	0.48	2.26	18.55	38.6	288	7.08	43.6
MP27013		0.89	1.63	18.9	<0.2	<10	510	1.30	0.05	0.03	4.56	17.75	308	199	1.40	214
MP27014		0.07	0.65	66.9	<0.2	<10	140	0.24	0.05	0.01	0.48	31.0	1.9	12	0.33	298
MP27015		0.16	1.50	6.3	1.4	<10	1140	0.09	0.06	0.02	1.22	11.55	8.8	241	12.40	127.5
MP27016		0.05	0.36	50.1	<0.2	<10	370	0.06	0.03	0.01	0.33	10.50	9.2	76	0.63	118.5
MP27017		0.48	0.67	133.5	<0.2	<10	180	0.09	0.02	0.05	2.88	21.8	42.2	20	0.31	230
MP27018		0.25	0.87	49.1	<0.2	<10	40	0.08	0.07	3.32	0.65	12.10	19.5	19	0.44	187.0
MP27019		0.10	2.54	15.6	<0.2	<10	40	0.09	0.04	0.49	3.17	29.7	46.0	20	0.09	352
MP27020		0.06	1.65	18.9	<0.2	<10	30	0.06	0.26	2.05	0.02	21.0	38.8	21	0.18	63.2
MP27021		0.68	0.54	51.0	<0.2	<10	30	0.08	0.03	0.02	0.11	31.0	1.4	4	0.20	215
MP27022		1.80	0.35	87.9	<0.2	<10	30	0.05	1.56	1.01	0.22	12.40	48.1	2	0.16	197.5
MP27023		0.10	1.82	16.3	<0.2	<10	20	0.09	0.17	0.14	0.13	22.0	25.0	15	0.14	113.0
MP27024		0.07	1.00	3.9	<0.2	<10	260	0.18	0.01	0.03	0.44	17.80	12.9	77	15.05	48.1
MP27025		0.24	0.70	6.4	<0.2	<10	260	0.17	0.04	0.01	0.72	9.91	16.3	118	1.45	65.6
MP27026		0.25	1.83	18.6	<0.2	<10	20	0.09	0.31	2.10	0.02	13.40	25.2	17	0.20	54.7
MP27027		0.21	2.15	6.0	<0.2	<10	40	0.10	0.16	0.42	0.68	19.30	33.7	17	0.10	291
MP27028		68.3	2.41	69.1	<0.2	<10	1110	0.93	0.05	0.07	11.55	37.7	104.5	388	0.41	325
MP27029		0.19	2.27	10.0	<0.2	<10	10	0.17	0.01	0.50	3.01	7.51	47.5	341	1.71	175.0
MP27030		0.89	1.97	49.5	<0.2	<10	40	0.08	0.01	4.58	0.21	7.50	36.1	276	1.69	95.6
MP27031		0.16	1.99	60.3	<0.2	<10	120	0.64	0.10	0.03	0.37	22.2	8.0	233	6.36	65.0
MP27032		0.18	2.01	5.9	<0.2	<10	220	0.38	0.01	0.71	2.48	4.70	57.2	424	7.93	364
MP27033		0.70	1.37	10.8	<0.2	<10	430	0.40	0.03	0.77	6.35	3.88	46.0	291	4.66	288
MP27034		0.45	0.89	40.9	<0.2	<10	40	0.05	0.23	2.24	2.14	7.19	20.4	27	0.37	423
MP27035		0.07	1.66	10.0	<0.2	<10	40	0.11	0.14	2.24	0.15	23.8	26.6	39	0.30	106.0
MP27036		0.20	1.67	48.7	<0.2	<10	60	0.06	0.19	2.37	0.51	9.89	19.2	11	0.36	252
MP27037		0.01	0.10	0.2	<0.2	<10	10	<0.05	0.01	9.91	0.04	4.89	0.9	95	0.06	4.3
MP27038		0.02	0.17	<2	<0.2	<10	10	<0.05	0.01	17.80	0.05	7.08	1.0	85	<0.05	7.6
MP27039		0.39	1.00	14.2	<0.2	<10	20	0.08	0.17	4.50	0.11	9.00	21.5	40	0.15	655
MP27040		0.17	1.07	21.1	<0.2	<10	30	0.08	0.53	3.03	0.06	9.94	18.2	47	0.10	130.5
MP27041		0.16	1.41	26.6	<0.2	<10	30	0.06	0.30	1.35	0.04	11.25	24.9	29	0.13	270
MP27042		0.14	1.70	13.3	<0.2	<10	30	0.10	0.15	1.77	0.02	8.34	21.4	50	0.19	242
MP27043		3.58	0.87	10.0	0.9	<10	60	0.22	1.99	0.42	0.23	24.4	17.9	13	2.17	6370
MP27044		0.08	2.13	17.9	<0.2	<10	20	0.13	0.02	3.72	0.05	18.50	17.8	51	0.42	167.0

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	Analyte	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni
	Units	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOR	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
MP27005		8.90	2.08	0.12	0.27	0.14	0.105	0.32	9.1	2.5	0.71	975	1.48	0.01	0.06	4.7
MP27006		7.73	9.26	0.18	0.12	0.08	0.035	0.08	4.3	8.9	1.62	1860	0.33	0.02	0.05	37.1
MP27007		8.26	4.12	0.11	0.26	0.01	0.008	0.07	8.7	11.9	1.80	247	1.62	0.01	<0.05	17.3
MP27008		9.83	2.12	0.09	0.03	0.05	0.006	0.07	0.9	0.3	0.02	41	4.20	0.01	0.09	1.8
MP27009		6.36	5.88	0.10	0.22	0.01	0.008	0.05	12.4	15.8	2.19	487	7.26	0.01	<0.05	13.5
MP27010		11.40	2.01	0.14	0.23	0.73	0.015	0.16	24.8	18.6	0.02	16050	0.94	0.01	0.11	174.0
MP27011		2.41	2.98	0.08	0.32	<0.01	0.007	0.16	33.3	0.6	0.02	151	1.52	0.01	<0.05	7.8
MP27012		8.55	7.61	0.15	0.12	0.01	0.015	0.28	10.1	12.5	1.97	794	1.46	0.01	<0.05	248
MP27013		10.05	8.71	0.09	0.06	0.25	0.019	0.11	2.8	7.9	0.03	26500	0.67	0.01	<0.05	120.0
MP27014		2.98	3.12	0.06	0.27	0.03	0.020	0.18	16.4	1.0	0.02	42	0.32	0.01	<0.05	7.1
MP27015		7.29	5.72	0.09	0.13	0.01	0.016	0.31	10.2	2.5	0.26	412	89.3	0.01	<0.05	67.5
MP27016		6.26	0.90	0.07	0.11	0.01	0.009	0.10	7.3	0.4	0.02	203	0.93	<0.01	<0.05	37.6
MP27017		7.02	1.49	0.07	0.06	0.22	0.023	0.25	11.2	1.8	0.04	8820	1.79	0.02	<0.05	5.3
MP27018		4.82	2.04	0.09	0.18	0.05	0.016	0.21	6.5	4.7	1.50	3570	4.21	0.01	<0.05	6.0
MP27019		5.83	7.08	0.11	0.07	0.20	0.028	0.08	16.0	11.2	1.52	3070	10.45	0.02	<0.05	10.8
MP27020		7.28	3.99	0.12	0.30	0.03	0.010	0.12	11.9	12.1	1.59	299	2.54	0.02	<0.05	9.4
MP27021		6.86	1.55	0.07	0.09	0.57	0.030	0.12	18.0	0.4	0.02	48	1.76	0.15	0.14	0.8
MP27022		7.04	0.45	0.12	0.41	0.54	0.021	0.22	7.3	0.4	0.03	108	1.97	0.01	0.06	12.0
MP27023		6.30	3.50	0.10	0.20	0.02	<0.005	0.05	11.9	10.6	1.45	260	3.48	0.01	<0.05	8.2
MP27024		4.10	2.48	0.06	0.16	0.02	0.013	0.53	10.4	3.9	0.37	529	0.27	0.01	0.05	44.4
MP27025		7.64	2.63	0.07	0.20	0.04	0.023	0.19	5.5	1.9	0.02	1800	0.37	0.01	<0.05	12.4
MP27026		6.91	4.58	0.10	0.18	0.02	0.008	0.07	7.4	15.6	1.88	620	1.69	0.02	<0.05	8.3
MP27027		5.42	5.10	0.08	0.19	0.03	0.006	0.13	10.6	12.4	1.87	634	2.27	0.01	<0.05	12.5
MP27028		10.90	15.95	0.12	0.35	1.13	0.078	0.04	7.2	10.9	0.12	9880	1.16	0.01	0.08	44.3
MP27029		3.80	6.58	0.16	0.14	0.34	0.009	0.18	4.4	17.6	2.03	1710	0.37	0.01	<0.05	79.0
MP27030		3.34	6.89	0.12	0.09	0.03	0.013	0.24	4.0	13.4	1.99	838	1.27	0.01	0.05	52.9
MP27031		4.34	7.91	0.08	0.29	0.03	0.046	0.26	13.5	3.0	0.30	100	1.56	0.01	<0.05	46.6
MP27032		5.12	6.14	0.23	0.17	0.21	0.014	0.57	2.7	10.6	1.87	764	0.30	0.02	<0.05	194.5
MP27033		5.27	4.26	0.19	0.13	0.43	0.010	0.31	2.8	6.6	1.18	3050	0.93	0.02	<0.05	97.1
MP27034		5.73	2.35	0.07	0.30	0.20	0.059	0.21	3.8	4.1	1.45	2910	1.35	0.01	0.06	6.3
MP27035		4.13	4.21	0.08	0.13	0.01	<0.005	0.12	13.4	17.1	1.79	323	8.36	0.02	<0.05	10.8
MP27036		5.03	3.77	0.06	0.22	0.05	0.028	0.23	6.3	4.8	1.65	2140	1.28	0.01	<0.05	4.4
MP27037		0.31	0.36	<0.05	0.02	<0.01	0.016	0.01	3.2	0.7	0.12	1130	0.12	0.01	<0.05	1.3
MP27038		0.48	0.54	<0.05	0.02	0.01	0.026	0.01	4.7	1.4	0.22	1970	0.11	0.01	0.06	1.0
MP27039		5.76	2.35	0.06	0.14	0.01	0.086	0.10	4.7	8.8	2.28	876	1.89	0.02	<0.05	5.9
MP27040		5.51	2.41	0.07	0.34	0.02	0.015	0.13	5.5	6.8	1.14	670	0.96	0.01	<0.05	5.3
MP27041		5.32	3.21	0.08	0.30	0.01	0.016	0.10	6.1	10.7	1.48	417	4.26	0.01	<0.05	6.9
MP27042		5.04	5.16	0.07	0.12	<0.01	0.006	0.12	4.2	15.5	1.95	343	1.08	0.02	<0.05	6.5
MP27043		2.59	4.33	0.09	0.81	0.04	0.157	0.25	12.9	11.8	0.38	232	20.9	0.12	0.36	18.3
MP27044		4.64	8.73	0.10	0.17	0.02	0.015	0.11	9.7	11.4	1.22	765	0.29	0.03	0.31	4.9

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	Analyte	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
	LOR	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02
MP27005		1840	9.7	5.3	0.002	8.97	1.33	1.5	12.8	<0.2	61.7	<0.01	6.46	0.7	0.006	0.04
MP27006		1010	17.2	9.3	<0.001	0.01	1.36	17.7	0.6	0.5	29.5	<0.01	0.01	1.4	0.150	0.15
MP27007		240	4.0	1.8	0.006	8.09	1.30	2.5	7.1	<0.2	32.3	<0.01	1.75	1.2	<0.005	0.02
MP27008		2440	2.1	1.9	<0.001	0.20	1.10	4.9	4.1	0.3	2.8	<0.01	1.01	1.4	0.014	0.02
MP27009		1790	2.7	1.4	0.004	4.20	0.85	2.8	3.6	<0.2	24.4	<0.01	1.14	1.1	<0.005	0.02
MP27010		2370	20.0	9.8	0.001	0.01	3.70	3.1	1.7	0.2	31.6	0.03	0.15	6.4	0.007	2.05
MP27011		360	6.9	9.2	<0.001	0.02	0.47	1.2	0.3	0.2	1.6	<0.01	0.04	6.8	<0.005	0.06
MP27012		2250	55.6	51.3	<0.001	0.02	0.53	9.4	0.4	<0.2	25.5	<0.01	0.08	1.1	0.010	0.02
MP27013		3160	51.4	6.0	<0.001	0.05	0.40	12.1	0.4	<0.2	29.7	<0.01	0.11	0.8	0.021	0.24
MP27014		550	16.5	4.6	<0.001	0.01	0.47	2.0	0.4	<0.2	22.5	<0.01	0.02	1.6	0.038	0.05
MP27015		1730	62.8	43.4	0.001	0.15	1.10	10.5	0.7	<0.2	53.4	<0.01	0.08	1.2	0.050	0.27
MP27016		730	45.6	3.1	<0.001	0.03	0.65	5.5	0.2	<0.2	7.0	<0.01	0.08	1.0	<0.005	0.02
MP27017		1990	22.6	5.6	<0.001	0.17	0.79	3.0	0.5	<0.2	97.3	<0.01	0.12	1.5	<0.005	0.07
MP27018		2180	77.3	5.7	<0.001	0.90	1.01	2.6	0.5	<0.2	332	<0.01	0.08	1.0	<0.005	0.07
MP27019		2380	3.1	1.7	0.002	0.20	0.31	4.6	0.8	<0.2	79.5	<0.01	0.11	1.0	0.009	<0.02
MP27020		2090	2.9	2.3	0.006	7.39	1.39	2.8	12.7	<0.2	94.1	<0.01	2.38	1.3	<0.005	<0.02
MP27021		2060	9.2	3.0	<0.001	0.49	1.92	2.7	0.7	0.2	105.0	<0.01	0.01	1.6	0.184	0.11
MP27022		4710	55.0	3.8	0.001	8.84	11.45	1.3	18.5	<0.2	54.5	<0.01	13.10	1.2	<0.005	0.10
MP27023		1800	4.2	1.2	0.010	6.21	1.34	1.8	5.7	<0.2	22.2	<0.01	1.29	1.2	<0.005	0.02
MP27024		660	35.7	52.0	<0.001	0.03	1.09	8.0	0.6	<0.2	19.6	0.01	0.06	1.7	0.087	0.71
MP27025		260	49.2	8.7	<0.001	0.04	0.68	17.2	0.2	<0.2	8.4	<0.01	0.02	2.0	0.011	0.23
MP27026		2210	6.9	1.6	0.006	6.03	1.16	2.3	4.0	<0.2	107.0	<0.01	1.36	0.8	<0.005	<0.02
MP27027		2040	4.5	2.7	0.020	1.42	0.53	2.6	4.8	<0.2	40.0	<0.01	0.30	1.0	<0.005	0.02
MP27028		1510	158.5	2.7	0.001	0.11	2.13	67.0	0.9	0.7	21.0	<0.01	0.07	2.7	0.140	3.03
MP27029		1260	3.6	21.1	<0.001	0.01	0.80	7.1	0.3	<0.2	23.7	<0.01	0.01	0.9	0.141	0.23
MP27030		1300	6.8	14.9	<0.001	0.06	1.40	4.2	0.3	0.2	148.5	<0.01	0.01	0.8	0.102	0.29
MP27031		700	114.0	24.4	<0.001	0.01	3.88	23.3	0.8	0.7	20.9	<0.01	0.25	3.3	0.042	0.25
MP27032		1700	4.8	33.9	<0.001	<0.01	1.38	21.6	0.4	0.2	34.4	<0.01	<0.01	0.7	0.161	0.27
MP27033		1750	6.5	20.0	<0.001	0.01	2.64	15.7	0.4	0.2	61.8	<0.01	0.01	0.6	0.133	0.32
MP27034		2140	103.0	5.4	<0.001	5.10	0.95	2.1	2.6	<0.2	203	<0.01	0.48	0.7	0.009	0.04
MP27035		2300	3.6	2.6	0.018	2.94	1.26	3.4	3.2	<0.2	98.6	<0.01	0.89	1.4	0.006	0.03
MP27036		2220	15.2	4.1	<0.001	2.47	1.49	1.9	1.3	<0.2	187.5	<0.01	1.60	0.7	0.007	0.07
MP27037		60	2.1	0.3	0.001	0.01	0.10	1.1	0.3	<0.2	671	<0.01	0.01	<0.2	<0.005	<0.02
MP27038		70	3.0	0.3	0.001	0.05	0.09	1.4	0.5	<0.2	1240	<0.01	0.02	<0.2	<0.005	<0.02
MP27039		1800	4.6	2.0	0.022	2.44	0.41	2.5	2.8	<0.2	143.0	<0.01	0.47	0.7	<0.005	0.02
MP27040		2020	11.2	2.1	0.004	5.77	1.05	1.5	4.9	<0.2	130.0	<0.01	1.23	0.9	<0.005	0.02
MP27041		2230	5.0	1.7	0.012	4.88	0.96	1.6	5.6	<0.2	51.8	<0.01	1.70	0.9	<0.005	0.02
MP27042		2170	3.1	2.4	0.004	2.47	0.59	3.3	5.6	<0.2	63.4	<0.01	0.33	0.7	<0.005	0.02
MP27043		400	36.2	32.1	0.010	0.73	1.30	1.6	5.0	1.9	19.6	<0.01	0.26	13.0	0.291	0.32
MP27044		1920	1.8	3.3	<0.001	0.19	1.63	5.0	0.4	0.2	195.0	0.01	0.01	1.3	0.135	0.04

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CERTIFICATE OF ANALYSIS BR13182094

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	U	V	W	Y	Zn	Zr
	Units	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.05	1	0.05	0.05	2	0.5
MP27005		0.19	22	0.22	3.82	108	9.6
MP27006		0.39	192	<0.05	19.95	2350	2.9
MP27007		0.24	49	0.32	5.87	159	9.1
MP27008		1.03	64	0.36	1.44	77	1.3
MP27009		0.14	66	0.33	10.70	342	7.4
MP27010		6.46	16	1.91	363	505	7.5
MP27011		2.34	10	0.27	8.31	27	11.7
MP27012		0.19	95	0.18	12.95	2110	4.1
MP27013		0.27	109	0.26	21.4	706	1.7
MP27014		0.35	29	0.11	12.50	426	9.2
MP27015		0.24	61	0.37	16.20	423	4.1
MP27016		0.28	32	0.54	8.06	249	4.1
MP27017		0.41	10	0.33	10.80	785	2.5
MP27018		0.23	23	0.38	8.19	282	7.0
MP27019		0.33	78	0.35	12.85	349	3.6
MP27020		0.31	44	0.40	4.13	14	10.3
MP27021		1.63	13	<0.05	2.38	74	3.7
MP27022		0.28	7	0.32	4.65	65	14.4
MP27023		0.22	43	0.33	5.55	253	6.7
MP27024		0.34	37	0.09	45.7	733	4.7
MP27025		0.78	40	0.62	7.28	299	5.8
MP27026		0.12	48	0.74	4.97	41	5.2
MP27027		0.20	50	0.27	5.92	136	6.9
MP27028		1.10	426	0.05	12.80	1620	8.1
MP27029		0.20	94	0.19	7.90	1660	4.8
MP27030		0.22	92	0.25	5.10	82	2.9
MP27031		0.67	161	0.28	8.45	311	8.9
MP27032		0.25	188	0.20	9.18	2400	5.2
MP27033		0.17	187	0.37	5.35	1880	4.1
MP27034		0.25	26	0.18	5.46	751	10.4
MP27035		0.17	46	0.22	6.35	68	4.0
MP27036		0.21	28	0.17	4.32	236	7.7
MP27037		<0.05	3	0.09	5.66	9	<0.5
MP27038		<0.05	2	0.06	8.89	8	<0.5
MP27039		0.18	22	0.12	7.01	37	3.8
MP27040		0.23	21	0.12	6.07	36	11.9
MP27041		0.23	28	0.09	4.24	30	10.3
MP27042		0.13	50	0.10	4.59	17	3.6
MP27043		6.47	43	0.38	12.25	102	30.4
MP27044		0.22	111	0.22	9.09	65	4.7

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CERTIFICATE OF ANALYSIS BR13182094

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	0.01	0.1	0.2	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2
MP27045		0.43	0.49	14	<0.2	<10	20	0.05	0.03	13.15	0.14	12.80	11.4	73	0.07	83.6
MP27046		0.20	2.35	55.1	<0.2	<10	30	0.07	0.27	0.62	0.07	5.83	20.9	49	2.44	89.3
MP27047		0.35	0.47	39.3	3.3	<10	80	<0.05	0.49	2.37	0.05	8.14	14.1	21	0.89	812
MP27048		0.17	1.99	29.1	<0.2	10	30	0.10	0.08	9.68	0.08	15.90	20.6	12	0.30	187.0
MP27049		0.34	1.71	29.6	<0.2	<10	70	0.08	0.06	5.90	0.18	18.35	19.8	8	1.09	178.5
MP27050		0.93	1.53	38.9	<0.2	<10	120	0.10	0.09	2.17	0.74	23.2	15.7	7	1.05	252
MP27051		3.51	1.59	276	4.0	<10	90	0.25	2.94	1.55	0.53	23.9	77.3	179	1.56	1280

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CERTIFICATE OF ANALYSIS BR13182094

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni
	Units	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOR	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
MP27045		2.77	0.95	<0.05	0.18	0.09	0.020	0.08	7.9	3.3	0.40	3590	0.65	0.01	0.10	7.3
MP27046		7.53	7.99	0.17	0.20	0.04	0.030	0.50	2.8	11.0	2.78	3960	0.48	0.01	0.09	5.2
MP27047		7.87	1.06	0.08	0.22	0.03	0.043	0.38	4.5	1.5	0.82	1780	0.95	0.01	0.13	3.7
MP27048		4.62	5.94	0.06	0.20	0.01	0.020	0.15	8.3	10.5	1.08	1360	1.78	0.02	0.24	6.6
MP27049		4.82	5.96	0.08	0.13	0.34	0.035	0.26	9.6	9.3	1.15	1400	4.10	0.01	0.20	6.0
MP27050		5.97	6.27	0.08	0.14	1.91	0.092	0.19	12.2	6.0	0.59	1130	17.95	0.01	0.08	4.7
MP27051		6.31	5.62	0.15	0.55	0.15	0.079	0.23	13.1	6.6	0.99	555	17.45	0.14	0.26	1970

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CERTIFICATE OF ANALYSIS BR13182094

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
	LOR	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02
MP27045		1100	7.6	1.8	0.002	1.33	4.92	1.3	0.7	<0.2	1310	<0.01	0.02	0.4	0.009	0.03
MP27046		1780	24.6	23.4	0.001	5.15	1.21	3.4	26.7	<0.2	73.1	<0.01	2.43	0.5	0.053	0.36
MP27047		1700	12.4	8.8	0.002	7.32	0.96	1.6	4.6	<0.2	291	<0.01	6.65	0.4	0.024	0.12
MP27048		1810	6.1	5.1	0.001	0.28	0.99	4.3	0.5	<0.2	406	<0.01	0.04	0.9	0.069	0.04
MP27049		1810	58.0	9.3	<0.001	0.13	1.04	5.0	0.6	<0.2	485	<0.01	0.13	0.9	0.052	0.15
MP27050		1680	287	9.2	<0.001	0.08	2.36	5.1	0.9	<0.2	213	<0.01	0.68	1.0	0.044	0.22
MP27051		370	247	26.3	0.004	0.73	4.31	5.2	1.5	2.7	45.1	<0.01	0.43	5.7	0.139	0.31

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CERTIFICATE OF ANALYSIS BR13182094

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	U	V	W	Y	Zn	Zr
	Units	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.05	1	0.05	0.05	2	0.5
MP27045		0.43	7	0.33	7.25	46	6.1
MP27046		0.11	91	0.16	4.33	148	6.1
MP27047		0.14	14	0.14	4.69	46	6.7
MP27048		0.18	60	0.35	8.83	67	6.0
MP27049		0.18	81	0.38	7.71	159	4.0
MP27050		0.24	100	0.21	6.87	462	4.6
MP27051		1.78	59	8.10	8.26	214	21.3

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CERTIFICATE OF ANALYSIS BR13182094

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

	Interference: Samples with Ca> 10% on ICP- MS As. ICP- AES As results reported (2 ppm DL)
Applies to Method:	ME- MS41
	Gold determinations by this method are semi- quantitative due to the small sample weight used (0.5g).
Applies to Method:	ME- MS41

LABORATORY ADDRESSES

	Processed at ALS Brisbane located at 32 Shand Street, Stafford, Brisbane, QLD, Australia.
Applies to Method:	LOG- 22 ME- MS41

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Finalized Date: 14- JUN- 2013
Account: ALSENV

CERTIFICATE BR13101125

Project: EB1311977

P.O. No.: SRK Consulting

This report is for 51 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 5- JUN- 2013.

The following have access to data associated with this certificate:

SUB RESULTS		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG- 22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME- MS41	51 anal. aqua regia ICPMS

To: ALS ENVIRONMENTAL
ATTN: SUB RESULTS
32 SHAND STREET
STAFFORD QLD 4053

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

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

Signature:

Shaun Kenny, Brisbane Laboratory Manager

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Project: EB1311977

CERTIFICATE OF ANALYSIS BR13101125

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	0.01	0.1	0.2	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2
MP02701		0.77	0.51	156.5	0.2	<10	190	0.23	0.22	0.01	0.01	25.0	1.2	9	0.16	32.7
MP02702		0.63	2.22	82.1	<0.2	<10	50	0.11	0.13	0.77	0.05	9.10	25.3	6	0.75	404
MP02703		0.39	0.81	245	<0.2	<10	90	0.15	0.12	3.70	0.11	9.53	19.9	5	0.55	329
MP02704		0.14	0.87	178.0	0.3	<10	210	0.39	0.20	0.01	0.02	33.8	1.5	13	0.18	116.5
MP02705		0.17	2.19	48.5	<0.2	<10	40	0.10	0.17	0.76	0.04	22.0	27.2	4	0.13	321
MP02706		0.47	1.74	35.2	<0.2	<10	30	0.11	0.62	1.91	0.08	9.78	23.2	4	0.13	318
MP02707		0.23	2.67	29.9	<0.2	<10	50	0.10	0.20	2.24	0.03	21.5	26.1	4	0.12	282
MP02708		0.23	3.52	70.6	<0.2	<10	50	0.15	0.04	2.54	0.01	26.5	21.3	7	0.13	313
MP02709		0.14	2.65	14.6	<0.2	<10	50	0.12	0.19	3.00	0.01	14.50	23.6	5	0.13	158.0
MP02710		0.11	2.31	16.2	<0.2	<10	60	0.14	0.17	3.05	0.01	17.45	26.4	4	0.19	277
MP02711		0.05	1.04	32.9	<0.2	<10	20	0.09	0.25	1.16	0.09	6.08	39.0	4	0.18	38.6
MP02712		0.04	1.50	10.8	<0.2	<10	30	0.10	0.21	4.70	0.01	9.18	42.5	6	0.19	124.5
MP02713		0.04	2.40	38.0	<0.2	<10	130	0.73	0.12	0.04	0.06	34.9	2.2	10	0.90	137.0
MP02714		0.37	1.29	48.4	<0.2	<10	60	0.11	0.03	2.04	3.28	12.95	33.9	6	1.88	369
MP02715		0.25	0.84	75.2	0.5	<10	20	0.08	0.55	1.79	0.04	9.17	28.4	5	0.12	286
MP02716		0.08	2.74	7.3	<0.2	<10	80	0.12	0.11	3.39	0.02	12.75	23.3	5	0.14	308
MP02717		0.02	1.89	26.2	<0.2	<10	160	0.67	0.04	0.08	0.25	39.8	11.9	9	0.23	226
MP02718		0.78	2.48	18.9	<0.2	<10	40	0.15	0.02	0.43	1.69	24.3	45.7	6	0.18	301
MP02719		1.68	1.23	1365	<0.2	<10	40	0.12	0.04	3.87	4.47	17.35	25.9	4	0.18	152.5
MP02720		0.70	0.73	74.2	<0.2	<10	80	0.10	0.33	0.06	0.25	12.65	0.4	10	0.44	74.8
MP02721		0.92	1.24	103.5	<0.2	<10	30	0.08	0.16	1.26	7.86	11.90	26.2	14	0.65	293
MP02722		0.54	1.37	81.3	<0.2	<10	30	0.06	0.14	0.88	2.93	8.02	24.6	9	0.71	151.5
MP02723		0.23	2.08	16.9	<0.2	<10	270	0.75	0.72	0.07	0.54	41.5	24.0	9	0.53	232
MP02724		0.04	1.91	88.6	<0.2	<10	130	0.16	0.04	0.04	0.26	39.9	3.2	10	0.86	230
MP02725		1.49	0.47	164.0	<0.2	<10	20	0.10	1.64	0.45	1.12	9.34	36.1	11	0.21	367
MP02726		0.27	1.38	66.4	<0.2	<10	190	0.27	0.05	0.06	0.88	26.6	172.5	176	0.43	260
MP02727		0.95	1.39	51.7	<0.2	<10	90	0.09	0.07	1.71	0.98	24.3	41.4	5	0.17	217
MP02728		0.11	1.74	57.1	<0.2	<10	50	0.08	0.05	5.90	0.15	18.60	25.8	4	0.13	168.0
MP02729		2.83	1.48	355	<0.2	<10	30	0.07	0.05	3.20	5.90	13.25	30.1	4	0.10	265
MP02730		0.15	1.40	29.7	<0.2	<10	20	0.05	0.41	0.03	0.02	16.55	30.5	10	0.17	895
MP02731		0.08	0.71	19.3	<0.2	<10	20	0.07	0.31	0.57	0.07	9.30	35.2	22	0.16	69.1
MP02732		0.42	2.27	30.0	<0.2	<10	530	0.62	0.10	0.12	0.87	56.7	71.5	13	0.85	239
MP02733		0.36	1.10	65.7	<0.2	<10	20	0.09	0.18	2.91	3.99	10.85	21.0	14	0.37	182.0
MP02734		0.15	0.77	20.4	<0.2	<10	20	0.05	0.32	1.61	0.04	4.13	32.7	32	0.26	77.1
MP02735		1.94	0.51	62.0	0.3	<10	20	0.08	0.25	0.77	2.67	10.00	27.6	14	0.33	389
MP02736		0.19	1.00	77.8	<0.2	<10	150	0.14	0.11	0.03	0.16	23.0	1.5	24	0.44	82.2
MP02737		0.35	1.12	124.5	<0.2	<10	40	0.05	0.12	2.94	0.09	16.65	15.7	13	0.92	173.5
MP02738		1.87	0.47	452	<0.2	<10	20	0.05	1.65	0.49	0.08	8.47	32.7	14	0.29	293
MP02739		3.72	2.02	42.8	<0.2	<10	50	0.49	0.02	0.14	2.12	24.4	39.4	4	1.32	386
MP02740		0.09	1.23	17.7	<0.2	<10	20	0.08	0.26	0.48	0.20	16.00	25.2	18	0.14	45.6

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CERTIFICATE OF ANALYSIS BR13101125

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni
	Units	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOR	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
MP02701		2.48	1.65	0.05	0.11	0.04	0.016	0.30	13.9	1.9	0.03	60	3.76	0.01	0.06	2.1
MP02702		6.54	5.36	0.05	0.17	0.03	0.028	0.47	4.9	11.7	2.03	2750	2.25	0.01	<0.05	6.6
MP02703		4.74	1.69	<0.05	0.09	0.03	0.027	0.59	4.8	4.2	1.43	3130	1.55	0.01	<0.05	5.9
MP02704		9.67	4.39	0.08	0.02	0.03	0.087	0.18	23.4	1.0	0.04	167	1.78	0.01	0.11	1.6
MP02705		6.39	4.30	0.06	0.17	0.03	0.053	0.32	12.0	11.6	2.05	1570	1.53	0.01	<0.05	5.9
MP02706		6.25	3.33	0.06	0.25	0.03	0.053	0.32	5.2	9.5	1.52	1140	2.46	0.01	<0.05	6.1
MP02707		6.22	5.93	0.06	0.17	0.02	0.025	0.26	11.6	14.6	2.46	1740	1.06	0.02	<0.05	6.3
MP02708		6.23	8.49	0.06	0.09	0.01	0.041	0.27	14.6	20.0	2.80	1640	1.31	0.02	<0.05	7.4
MP02709		5.29	5.33	<0.05	0.11	0.01	0.014	0.26	7.9	16.5	2.24	1270	1.75	0.01	<0.05	7.2
MP02710		6.03	5.28	0.10	0.15	0.01	0.018	0.43	9.4	10.8	1.61	1020	1.41	0.03	<0.05	6.8
MP02711		8.24	2.02	0.11	0.24	0.01	<0.005	0.23	3.1	7.2	0.74	204	1.27	0.01	<0.05	6.2
MP02712		5.38	4.00	0.06	0.18	0.01	0.024	0.12	5.0	13.4	1.27	589	3.73	0.02	<0.05	7.2
MP02713		5.19	8.20	0.06	0.03	0.03	0.037	0.22	19.1	3.0	0.18	126	2.02	0.02	0.16	3.5
MP02714		4.65	2.36	0.05	0.16	0.27	0.054	0.62	6.9	4.9	1.19	2890	1.66	0.01	0.08	10.5
MP02715		7.04	1.68	0.06	0.28	0.03	0.023	0.22	4.4	4.2	0.69	856	2.10	0.01	<0.05	5.3
MP02716		5.60	7.26	<0.05	0.08	0.01	0.049	0.19	6.7	15.0	2.06	1440	1.53	0.02	<0.05	5.6
MP02717		3.66	4.82	0.06	0.40	0.07	0.022	0.25	16.7	5.0	0.53	147	0.90	0.04	0.05	8.1
MP02718		4.58	7.57	<0.05	0.22	1.27	0.024	0.18	12.4	17.5	1.24	3160	0.87	0.04	0.19	11.2
MP02719		4.42	2.76	<0.05	0.10	3.21	0.049	0.32	9.1	9.1	1.23	27300	1.60	0.01	0.21	6.0
MP02720		5.72	4.05	0.13	0.11	0.08	0.059	1.18	5.9	1.7	0.10	487	2.00	0.06	0.22	3.2
MP02721		7.42	4.43	0.09	0.36	0.98	0.230	0.49	6.1	6.3	0.98	3030	2.77	0.01	0.09	9.6
MP02722		6.15	5.43	0.09	0.33	0.38	0.107	0.40	4.2	7.7	1.34	3360	2.82	0.01	0.10	7.3
MP02723		5.85	10.50	0.10	0.20	0.08	0.047	0.63	19.8	6.4	0.65	1280	2.84	0.02	0.05	9.3
MP02724		5.98	4.05	0.09	0.03	0.06	0.017	0.14	19.5	1.2	0.18	113	1.83	0.01	0.05	2.9
MP02725		8.14	0.99	0.08	0.36	0.12	0.053	0.24	4.5	2.2	0.31	1250	3.16	0.01	<0.05	10.0
MP02726		6.85	5.54	0.07	0.05	0.06	0.011	0.08	12.2	10.0	0.33	771	2.15	0.01	0.05	50.3
MP02727		4.17	3.46	0.05	0.08	0.05	0.014	0.16	13.0	7.9	0.71	2710	1.03	0.01	0.21	16.9
MP02728		4.24	4.18	0.05	0.12	0.04	0.010	0.16	10.1	9.1	0.63	1800	0.85	0.01	0.24	5.7
MP02729		5.42	2.76	<0.05	0.12	2.07	0.054	0.20	7.0	9.7	1.68	7240	2.01	0.01	<0.05	6.7
MP02730		4.85	2.49	0.07	0.31	0.02	0.017	0.08	9.1	10.9	1.23	187	4.08	0.01	<0.05	10.6
MP02731		9.49	1.50	0.11	0.28	0.02	0.008	0.10	4.5	6.0	0.56	127	2.20	0.01	<0.05	8.3
MP02732		4.77	7.75	0.08	0.04	0.19	0.053	0.18	21.6	11.4	0.60	4370	2.29	0.02	0.06	10.2
MP02733		4.94	3.33	<0.05	0.16	0.44	0.058	0.20	6.0	6.0	1.13	3100	1.80	0.01	0.05	5.9
MP02734		8.49	1.58	0.09	0.24	0.02	0.007	0.11	2.0	6.3	0.59	347	3.70	0.01	<0.05	11.0
MP02735		6.45	0.91	0.07	0.32	0.26	0.081	0.28	5.2	2.2	0.21	3680	2.44	<0.01	0.05	9.5
MP02736		5.54	5.23	0.07	0.08	0.16	0.052	0.47	11.6	1.6	0.22	170	2.68	0.04	0.05	7.6
MP02737		4.30	2.76	0.06	0.21	0.05	0.024	0.28	8.9	5.8	1.09	4490	2.30	0.01	<0.05	7.0
MP02738		8.58	1.28	0.22	0.30	0.17	0.033	0.25	4.2	2.3	0.27	2220	3.88	0.01	0.06	9.8
MP02739		7.92	5.48	0.07	0.17	0.77	0.015	0.14	13.7	4.5	0.83	2000	1.96	0.02	0.10	6.2
MP02740		7.87	2.37	0.08	0.21	0.03	0.006	0.10	8.6	10.6	1.10	636	2.36	0.01	<0.05	7.3

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Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
	LOR	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02
MP02701		890	27.6	6.8	<0.001	0.26	2.62	2.6	1.4	1.1	24.5	<0.01	8.23	1.8	0.006	0.09
MP02702		2140	9.2	11.2	0.001	3.65	1.42	3.3	3.0	<0.2	56.4	<0.01	3.19	0.7	0.019	0.13
MP02703		2410	20.6	11.2	0.001	2.22	1.24	4.0	3.2	<0.2	489	<0.01	0.82	0.7	0.005	0.11
MP02704		2840	13.6	3.6	<0.001	0.10	2.65	10.8	4.2	0.3	33.1	<0.01	4.18	2.3	0.006	0.04
MP02705		2160	7.1	4.7	0.003	4.13	1.39	2.3	4.2	<0.2	41.0	<0.01	1.49	1.1	<0.005	0.04
MP02706		2040	6.9	4.6	0.010	5.95	1.56	2.1	7.1	<0.2	75.4	<0.01	2.56	0.7	<0.005	0.05
MP02707		2090	7.0	3.8	0.009	3.52	1.94	3.2	3.8	<0.2	122.5	<0.01	0.84	1.0	<0.005	0.04
MP02708		2070	1.7	4.1	0.004	0.98	0.76	5.1	1.0	<0.2	168.0	<0.01	0.47	1.1	<0.005	0.03
MP02709		2130	3.4	3.7	0.006	2.35	1.20	3.0	1.2	<0.2	253	<0.01	0.35	0.9	<0.005	0.04
MP02710		2030	10.6	6.2	0.006	3.28	1.51	4.2	15.0	0.2	183.5	<0.01	0.44	1.0	0.005	0.05
MP02711		1930	4.6	3.5	0.004	10.25	0.85	1.5	19.6	<0.2	51.0	<0.01	1.48	0.7	<0.005	0.02
MP02712		2010	1.9	2.1	0.019	4.47	1.62	3.8	7.8	<0.2	397	0.01	1.21	0.9	<0.005	<0.02
MP02713		1380	30.7	10.0	<0.001	0.04	0.99	12.9	1.3	0.4	38.9	<0.01	1.31	2.8	0.026	0.08
MP02714		2130	69.0	14.3	0.001	3.16	1.43	2.8	2.1	<0.2	249	<0.01	0.24	1.0	0.029	0.24
MP02715		2140	9.7	3.1	0.006	8.47	1.21	1.2	3.4	<0.2	118.0	<0.01	3.12	0.7	<0.005	0.03
MP02716		2170	3.4	2.8	0.001	0.93	0.69	4.2	1.0	<0.2	280	<0.01	0.17	0.7	0.005	0.02
MP02717		450	34.2	7.2	<0.001	<0.01	1.37	8.0	0.4	0.4	35.1	<0.01	0.03	1.5	0.054	0.08
MP02718		1870	1.8	5.4	<0.001	<0.01	0.65	6.0	0.4	0.2	35.3	<0.01	0.01	0.9	0.130	0.10
MP02719		2240	411	5.6	<0.001	4.21	21.4	2.1	1.8	<0.2	135.5	<0.01	0.15	1.0	0.039	0.21
MP02720		2340	116.5	15.2	<0.001	2.00	1.90	2.7	26.0	<0.2	180.0	<0.01	2.38	0.5	0.065	0.40
MP02721		2090	30.8	12.3	0.002	8.53	3.11	4.6	11.5	0.2	129.5	<0.01	11.30	0.7	0.025	0.30
MP02722		1800	57.9	12.1	<0.001	5.40	1.74	4.2	14.6	<0.2	94.1	<0.01	5.14	0.5	0.035	0.15
MP02723		820	12.2	15.6	<0.001	<0.01	3.23	17.1	0.5	0.6	25.7	<0.01	0.05	1.9	0.044	0.06
MP02724		2180	3.7	5.8	<0.001	0.04	3.45	4.5	0.4	<0.2	423	<0.01	0.01	1.2	0.008	0.26
MP02725		2340	42.7	5.1	<0.001	10.60	2.23	2.0	8.3	<0.2	78.4	<0.01	6.42	0.7	<0.005	0.10
MP02726		1810	33.7	3.9	<0.001	<0.01	4.89	8.5	1.0	<0.2	37.4	<0.01	0.03	0.8	0.023	0.05
MP02727		2310	14.3	4.0	0.003	0.47	2.14	2.2	0.3	<0.2	79.4	<0.01	0.02	1.0	0.050	0.07
MP02728		2100	5.0	2.9	<0.001	0.55	2.09	3.1	0.3	<0.2	409	0.01	<0.01	0.7	0.046	0.14
MP02729		2110	631	3.2	0.001	3.19	10.70	1.4	0.8	<0.2	283	<0.01	0.26	0.6	<0.005	0.12
MP02730		1050	6.4	1.4	0.038	4.92	0.75	1.4	8.9	<0.2	21.1	<0.01	0.65	0.9	<0.005	0.04
MP02731		1890	8.0	1.7	0.003	12.60	1.43	1.0	17.5	<0.2	21.7	<0.01	1.75	0.8	<0.005	<0.02
MP02732		1460	183.0	12.0	<0.001	0.17	1.13	8.3	0.7	0.4	111.0	<0.01	0.58	3.0	0.027	0.30
MP02733		2040	109.0	5.3	<0.001	4.16	1.47	2.6	2.8	<0.2	283	<0.01	0.41	0.7	0.010	0.05
MP02734		1950	16.9	2.0	0.004	10.60	1.45	1.2	17.4	0.2	88.5	<0.01	1.48	0.6	<0.005	0.02
MP02735		2090	69.7	6.1	0.001	6.46	3.67	1.3	11.0	<0.2	64.9	<0.01	38.1	0.6	0.005	0.09
MP02736		1790	456	8.4	<0.001	0.90	2.02	4.3	2.2	0.2	93.3	<0.01	0.36	1.1	0.014	0.09
MP02737		1730	22.7	10.0	0.002	3.56	1.99	1.8	6.3	<0.2	274	<0.01	2.67	0.6	0.013	0.15
MP02738		2090	73.9	5.9	<0.001	10.95	4.39	1.2	49.0	<0.2	42.0	<0.01	14.00	0.6	0.006	0.13
MP02739		2280	7.3	15.2	<0.001	<0.01	0.93	6.6	0.4	0.2	74.3	<0.01	0.01	0.8	0.129	0.84
MP02740		2320	10.1	1.7	0.006	8.80	1.43	1.2	12.2	<0.2	45.7	<0.01	1.65	0.8	<0.005	<0.02

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Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	U	V	W	Y	Zn	Zr
	Units	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.05	1	0.05	0.05	2	0.5
MP02701		0.26	21	0.21	2.49	10	4.7
MP02702		0.23	60	0.26	4.15	125	6.9
MP02703		0.23	22	0.42	7.70	87	4.4
MP02704		0.76	53	0.08	2.24	44	1.1
MP02705		0.22	37	0.19	5.79	119	7.5
MP02706		0.25	29	0.25	4.46	83	9.9
MP02707		0.23	57	0.15	5.60	106	7.3
MP02708		0.18	88	0.16	6.89	95	3.9
MP02709		0.19	50	0.23	5.24	46	4.8
MP02710		0.26	60	0.27	5.85	43	6.7
MP02711		0.15	19	0.69	2.87	16	7.8
MP02712		0.23	51	0.79	4.51	13	5.2
MP02713		0.68	99	0.07	4.13	103	1.8
MP02714		0.27	26	0.48	5.96	1260	7.5
MP02715		0.20	16	1.27	6.04	46	9.1
MP02716		0.18	69	0.19	5.38	89	3.2
MP02717		0.43	71	<0.05	15.75	365	11.5
MP02718		0.21	97	0.23	14.80	981	8.5
MP02719		0.21	27	0.22	6.64	1600	6.0
MP02720		0.14	46	0.19	2.39	100	4.3
MP02721		0.24	65	0.62	4.85	3030	13.0
MP02722		0.17	76	0.95	3.83	1130	10.8
MP02723		0.42	155	0.05	16.30	370	6.2
MP02724		1.52	54	0.12	4.99	473	1.1
MP02725		0.22	12	0.79	7.16	321	11.6
MP02726		0.54	101	0.12	22.4	483	1.6
MP02727		0.59	34	0.40	10.10	1230	4.2
MP02728		0.16	39	0.15	7.58	83	4.9
MP02729		0.16	22	0.26	6.61	2580	4.7
MP02730		0.27	21	0.23	3.51	34	10.6
MP02731		0.14	14	0.86	2.77	20	9.0
MP02732		0.61	85	0.08	10.80	384	1.7
MP02733		0.19	35	0.48	3.94	1620	6.3
MP02734		0.15	15	0.62	2.97	24	7.7
MP02735		0.24	10	0.38	5.91	1300	10.5
MP02736		0.26	66	0.15	2.86	138	3.2
MP02737		0.11	22	0.32	4.65	102	5.8
MP02738		0.16	15	0.42	4.14	176	9.2
MP02739		0.45	74	0.06	16.20	1020	5.5
MP02740		0.16	22	0.42	4.21	156	6.9

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Project: EB1311977

CERTIFICATE OF ANALYSIS BR13101125

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	0.01	0.1	0.2	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2
MP02741		0.18	2.17	7.0	<0.2	<10	20	0.18	0.11	0.52	0.05	27.7	51.0	8	0.18	229
MP02742		1.09	0.68	65.6	<0.2	<10	20	<0.05	0.22	0.76	0.15	4.52	24.3	35	0.49	168.0
MP02743		0.56	1.06	50.6	0.6	<10	40	<0.05	0.24	0.49	0.21	6.26	26.3	14	1.38	1390
MP02744		0.67	0.89	105.5	3.8	<10	60	0.06	0.70	1.55	0.08	11.65	23.3	16	0.13	944
MP02745		0.31	1.01	30.0	<0.2	<10	390	0.22	0.04	0.07	0.96	32.6	41.8	45	1.13	203
MP02746		1.49	0.96	39.5	<0.2	<10	40	0.08	0.08	5.82	0.44	20.1	26.4	5	0.24	168.5
MP02747		0.15	1.65	13.3	<0.2	<10	30	0.10	0.03	1.34	0.02	12.95	20.7	13	0.43	158.0
MP02748		0.98	1.33	123.0	0.2	<10	30	0.08	0.06	1.41	1.26	11.25	22.3	10	0.88	219
MP02749		0.20	1.96	31.5	<0.2	<10	30	0.09	0.04	2.93	2.27	22.2	20.7	12	0.53	246
MP02750		0.55	1.80	18.4	<0.2	<10	70	0.09	0.25	7.45	0.07	18.00	20.5	16	0.19	1070
MP02751		0.09	2.14	67.4	<0.2	<10	40	0.12	<0.01	2.98	0.05	31.5	19.5	4	0.49	175.5

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

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Project: EB1311977

CERTIFICATE OF ANALYSIS BR13101125

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni
	Units	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOR	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
MP02741		4.68	5.00	0.12	0.22	0.03	0.009	0.06	13.8	16.7	1.77	321	4.15	0.01	0.05	15.0
MP02742		7.55	3.20	0.09	0.16	0.06	0.033	0.15	2.2	4.2	0.99	8040	3.07	0.01	0.07	8.3
MP02743		9.18	2.89	0.10	0.32	0.05	0.073	0.32	3.0	5.0	0.77	1580	2.46	0.01	0.12	8.7
MP02744		7.06	1.71	0.10	0.32	0.08	0.040	0.19	6.3	4.8	1.06	1040	2.74	0.01	0.07	6.3
MP02745		4.78	3.10	0.09	0.11	0.11	0.012	0.27	15.6	3.2	0.30	1600	1.57	0.01	0.07	15.0
MP02746		5.12	1.85	0.05	0.22	0.02	0.008	0.25	11.8	5.2	0.71	2060	1.57	0.01	0.14	7.2
MP02747		4.39	4.82	0.05	0.18	0.03	0.008	0.20	6.6	7.6	1.40	1880	1.49	0.01	0.08	6.9
MP02748		5.32	3.42	0.06	0.24	0.21	0.039	0.29	5.9	7.2	1.42	2530	1.91	0.01	0.06	5.8
MP02749		4.98	6.88	0.08	0.20	0.26	0.060	0.16	11.6	6.9	1.60	2610	1.29	0.01	0.17	4.5
MP02750		4.77	3.89	0.06	0.14	0.04	0.121	0.17	10.6	7.3	1.44	2080	1.19	0.01	0.08	5.0
MP02751		4.54	6.15	0.05	0.21	0.01	0.011	0.27	16.7	8.3	1.46	1330	0.88	0.02	0.20	4.4

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Project: EB1311977

CERTIFICATE OF ANALYSIS BR13101125

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
	LOR	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02
MP02741		2860	4.4	1.5	0.012	3.26	1.92	2.7	4.4	<0.2	58.3	<0.01	0.39	1.1	<0.005	0.07
MP02742		1840	17.3	4.5	<0.001	5.44	0.92	6.2	8.5	<0.2	181.0	<0.01	7.54	0.4	<0.005	0.08
MP02743		2090	20.5	11.1	0.001	9.83	1.86	2.3	10.4	<0.2	50.6	<0.01	5.43	0.5	0.018	0.17
MP02744		2070	5.0	3.1	0.008	7.10	1.47	1.5	12.5	0.2	104.0	<0.01	2.40	0.8	<0.005	0.08
MP02745		920	9.2	10.7	<0.001	0.04	2.32	4.3	0.3	0.2	48.7	<0.01	<0.01	0.6	0.017	0.08
MP02746		1970	31.0	5.0	0.002	2.02	1.52	2.0	0.2	<0.2	384	<0.01	<0.01	0.9	0.017	0.07
MP02747		2050	14.9	5.7	<0.001	1.03	0.34	3.2	0.3	<0.2	114.5	<0.01	0.03	0.8	0.019	0.05
MP02748		2170	74.5	7.9	<0.001	2.90	1.87	2.3	1.7	<0.2	144.5	<0.01	1.62	0.7	0.008	0.08
MP02749		2160	21.1	4.6	<0.001	1.56	1.14	5.4	0.8	<0.2	244	<0.01	0.17	1.0	0.039	0.06
MP02750		1840	6.3	2.7	0.009	2.60	1.17	2.7	3.4	<0.2	884	<0.01	1.15	0.6	0.008	<0.02
MP02751		2230	8.6	8.4	<0.001	0.59	0.71	4.1	0.3	<0.2	288	<0.01	0.07	0.9	0.062	0.09

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Project: EB1311977

CERTIFICATE OF ANALYSIS BR13101125

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	U	V	W	Y	Zn	Zr
	Units	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.05	1	0.05	0.05	2	0.5
MP02741		0.18	47	0.26	8.73	403	7.1
MP02742		0.11	52	0.99	6.15	309	5.2
MP02743		0.21	31	0.52	5.06	98	10.2
MP02744		0.23	15	0.76	6.16	61	10.6
MP02745		0.27	57	0.42	12.30	211	3.3
MP02746		0.24	17	0.14	7.73	66	7.6
MP02747		0.20	46	0.28	6.57	116	6.4
MP02748		0.22	31	0.28	6.53	511	8.3
MP02749		0.18	75	0.20	6.08	803	6.7
MP02750		0.14	32	0.07	7.14	70	4.1
MP02751		0.18	60	0.14	9.75	107	6.0

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Project: EB1311977

CERTIFICATE OF ANALYSIS BR13101125

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

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

Applies to Method: ME- MS41

LABORATORY ADDRESSES

Processed at ALS Brisbane located at 32 Shand Street, Stafford, Brisbane, QLD, Australia.

Applies to Method: LOG- 22 ME- MS41

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Finalized Date: 2- JUN- 2017
Account: ALSENV

CERTIFICATE BR17105008

Project: ME- MS41

P.O. No.: EB1710527

This report is for 8 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 29- MAY- 2017.

The following have access to data associated with this certificate:

SUB RESULTS - BRIS		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG- 22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME- MS41	Ultra Trace Aqua Regia ICP- MS

To: ALS ENVIRONMENTAL
ATTN: SUB RESULTS - BRIS
32 SHAND STREET
STAFFORD QLD 4053

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

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

Signature:

Shaun Kenny, Brisbane Laboratory Manager

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Project: ME- MS41

CERTIFICATE OF ANALYSIS BR17105008

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2
MP- WR008		0.23	2.22	24.8	<0.02	<10	60	0.20	0.02	0.61	0.12	9.29	39.4	305	0.76	108.5
MP- WR009		0.20	2.63	28.7	<0.02	<10	50	0.11	0.03	4.27	0.13	17.10	21.9	4	0.26	190.0
MP- WR010		0.17	0.81	31.4	0.02	<10	90	0.10	0.05	0.51	2.00	20.5	30.9	5	0.58	348
MP- WR011		0.13	2.45	7.7	0.03	<10	30	0.13	0.16	0.19	1.33	15.05	43.5	4	0.15	74.6
MP- WR012		0.05	1.38	<0.1	<0.02	<10	50	0.10	0.01	9.27	0.15	11.45	12.6	49	0.22	29.6
MP- WR013		0.26	0.45	1.1	<0.02	<10	20	<0.05	0.08	0.01	0.06	13.10	54.6	6	0.14	1020
MP- WR014		0.02	0.62	29.7	0.05	<10	50	<0.05	0.19	0.01	0.01	6.81	1.3	8	0.11	241
MP- WR015		0.41	1.83	20.2	0.10	<10	130	0.11	0.02	5.75	0.10	22.9	21.8	7	0.40	221

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

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Project: ME- MS41

CERTIFICATE OF ANALYSIS BR17105008

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni
	Units	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOR	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
MP- WR008		4.72	8.97	0.22	0.21	0.01	0.019	0.11	5.1	20.9	2.13	691	1.27	0.01	0.09	80.0
MP- WR009		5.46	5.96	0.09	0.14	0.01	0.017	0.24	9.0	11.8	1.78	1210	0.43	0.01	0.10	5.1
MP- WR010		7.83	2.00	0.12	0.09	0.10	0.022	0.24	10.5	2.8	0.14	1400	0.61	0.01	0.07	20.5
MP- WR011		5.05	5.06	0.09	0.25	0.01	0.005	0.15	7.7	15.5	2.18	276	1.47	0.01	0.05	12.2
MP- WR012		3.78	2.80	0.07	0.14	<0.01	0.011	0.28	7.3	8.3	0.97	1820	0.12	0.01	0.07	38.9
MP- WR013		2.06	1.04	0.05	0.09	<0.01	0.008	0.10	6.6	0.7	0.03	13	6.64	<0.01	<0.05	15.8
MP- WR014		5.35	4.16	0.07	0.27	<0.01	0.015	0.11	4.1	0.5	0.03	14	1.33	<0.01	<0.05	0.8
MP- WR015		4.13	5.22	0.08	0.35	0.01	0.020	0.38	12.3	9.7	0.87	918	0.33	0.02	0.37	7.7

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

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Project: ME- MS41

CERTIFICATE OF ANALYSIS BR17105008

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
	LOR	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02
MP- WR008		1370	7.2	16.9	<0.001	<0.01	1.27	9.0	0.2	0.4	23.0	<0.01	0.01	1.1	0.112	0.12
MP- WR009		1850	4.4	6.8	0.001	0.18	1.03	3.6	0.4	<0.2	205	<0.01	0.02	0.8	0.018	0.05
MP- WR010		2490	4.6	5.1	<0.001	<0.01	0.68	5.3	2.1	<0.2	41.0	<0.01	0.51	1.0	<0.005	0.05
MP- WR011		1250	4.0	3.0	0.021	3.46	1.26	2.4	5.7	<0.2	59.6	<0.01	0.79	1.1	<0.005	0.03
MP- WR012		900	10.2	6.2	<0.001	0.01	0.97	4.3	0.2	<0.2	545	<0.01	0.03	0.6	0.033	0.04
MP- WR013		30	5.0	2.8	0.043	2.40	1.18	1.0	2.9	<0.2	2.6	<0.01	0.23	1.2	<0.005	0.82
MP- WR014		140	10.9	1.9	0.001	0.12	2.21	1.1	4.6	<0.2	14.1	<0.01	2.34	0.8	<0.005	0.07
MP- WR015		1990	1.5	10.4	<0.001	0.52	0.70	4.4	0.5	<0.2	240	0.01	0.01	1.0	0.081	0.05

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Project: ME- MS41

CERTIFICATE OF ANALYSIS BR17105008

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	U	V	W	Y	Zn	Zr
	Units	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.05	1	0.05	0.05	2	0.5
MP- WR008		0.22	134	0.43	5.71	52	8.1
MP- WR009		0.14	54	0.15	6.96	81	4.5
MP- WR010		0.21	54	0.08	12.05	390	3.8
MP- WR011		0.20	49	<0.05	3.65	383	8.2
MP- WR012		0.39	42	0.18	6.91	34	4.0
MP- WR013		0.20	9	0.12	0.60	3	2.3
MP- WR014		0.17	35	0.06	0.74	5	10.0
MP- WR015		0.73	55	0.24	9.51	65	11.3

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

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Project: ME- MS41

CERTIFICATE OF ANALYSIS BR17105008

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

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

Applies to Method: ME- MS41

ACCREDITATION COMMENTS

NATA Accredited. Corporate Accreditation No: 825, Corporate Site No: 818. The Technical Signatory is David Jones, ICPMS Supervising Chemist.

Applies to Method: ME- MS41

LABORATORY ADDRESSES

Processed at ALS Brisbane located at 32 Shand Street, Stafford, Brisbane, QLD, Australia. NATA Accreditation does not cover the performance of ALS Brisbane Sample Preparation which is processed at 116 Delta Street, Geebung, QLD 4034, Australia

Applies to Method: LOG- 22 ME- MS41

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Finalized Date: 28- JUL- 2017
Account: ALSENV

CERTIFICATE BR17151583

Project: EB1714356

This report is for 6 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 24- JUL- 2017.

The following have access to data associated with this certificate:

SUB RESULTS - BRIS		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG- 22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME- MS41	Ultra Trace Aqua Regia ICP- MS

To: ALS ENVIRONMENTAL
ATTN: SUB RESULTS - BRIS
32 SHAND STREET
STAFFORD QLD 4053

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

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

Signature:

Shaun Kenny, Brisbane Laboratory Manager

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Project: EB1714356

CERTIFICATE OF ANALYSIS BR17151583

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Hg	K
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	%
	LOR	0.01	0.01	0.1	10	10	0.05	0.01	0.01	0.01	0.1	1	0.2	0.01	0.01	0.01
MP- WR025 92- 93m		0.17	3.05	54.5	<10	20	0.18	0.01	3.82	0.02	43.4	332	98.6	4.79	<0.01	0.67
MP- WR026 37- 38m		0.15	0.66	15.1	<10	20	0.22	0.11	0.02	0.04	12.1	12	256	4.54	0.02	0.15
MP- WR027 85- 86m		0.06	1.90	9.6	<10	30	0.10	0.04	0.33	<0.01	21.5	9	69.3	4.62	<0.01	0.16
MP- WR028 114- 115m		0.12	3.25	30.9	<10	10	0.09	0.29	1.17	0.04	27.1	14	122.0	7.48	<0.01	0.22
MP- WR029 162- 163m		0.07	2.73	36.6	<10	40	0.12	0.12	0.71	<0.01	29.2	8	66.2	6.53	<0.01	0.35
MP- WR030 97- 98m		0.22	2.38	33.9	<10	10	0.06	0.20	8.44	0.03	37.9	134	119.5	7.65	<0.01	0.05

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

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Project: EB1714356

CERTIFICATE OF ANALYSIS BR17151583

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Th	Ti	Tl	U	V
	Units	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOR	0.01	5	0.05	0.01	0.2	0.2	0.05	0.2	0.2	0.2	0.2	0.005	0.02	0.05	1
MP-WR025 92-93m		3.59	850	0.41	0.01	77.6	1.7	1.49	0.3	0.2	124.0	0.9	0.127	0.72	0.21	149
MP-WR026 37-38m		0.03	141	1.30	0.01	6.8	4.2	0.55	0.9	<0.2	2.2	1.2	<0.005	0.05	0.35	25
MP-WR027 85-86m		1.16	506	0.13	0.01	27.5	1.3	0.24	0.3	<0.2	13.0	0.7	<0.005	0.04	0.20	28
MP-WR028 114-115m		1.88	1420	1.00	0.01	13.9	13.0	0.13	0.3	<0.2	23.1	0.9	0.010	0.05	0.73	61
MP-WR029 162-163m		1.88	476	0.19	0.01	24.0	5.5	0.83	0.6	<0.2	34.0	0.9	0.043	0.19	0.19	85
MP-WR030 97-98m		2.93	3340	1.37	0.01	40.9	7.6	0.68	5.4	<0.2	392	0.2	0.005	<0.02	0.14	85

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Project: EB1714356

CERTIFICATE OF ANALYSIS BR17151583

Sample Description	Method Analyte Units LOR	ME- MS41 Zn ppm 2
MP- WR025 92- 93m		57
MP- WR026 37- 38m		26
MP- WR027 85- 86m		41
MP- WR028 114- 115m		33
MP- WR029 162- 163m		53
MP- WR030 97- 98m		76

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

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Project: EB1714356

CERTIFICATE OF ANALYSIS BR17151583

CERTIFICATE COMMENTS

ACCREDITATION COMMENTS

Applies to Method: NATA Accredited. Corporate Accreditation No: 825, Corporate Site No: 818. The Technical Signatory is David Jones, ICPMS Supervising Chemist.
ME- MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Brisbane located at 32 Shand Street, Stafford, Brisbane, QLD, Australia. NATA Accreditation does not cover the performance of ALS Brisbane Sample Preparation which is processed at 116 Delta Street, Geebung, QLD 4034, Australia
LOG- 22 ME- MS41

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Finalized Date: 7- AUG- 2017
Account: ALSENV

CERTIFICATE BR17158882

Project: EB1714919

This report is for 2 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 1- AUG- 2017.

The following have access to data associated with this certificate:

SUB RESULTS - BRIS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG- 22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME- MS41	Ultra Trace Aqua Regia ICP- MS

To: ALS ENVIRONMENTAL
ATTN: SUB RESULTS - BRIS
32 SHAND STREET
STAFFORD QLD 4053

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

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

Signature:

Shaun Kenny, Brisbane Laboratory Manager

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Project: EB1714919

CERTIFICATE OF ANALYSIS BR17158882

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2
MP_WR031 12m- 13m		0.04	0.24	49.8	<0.02	<10	10	0.28	0.05	0.01	0.01	16.85	1.3	13	0.10	35.8
MP_WR032 28m- 29m		0.02	0.72	1.0	0.02	<10	40	0.16	0.08	0.01	0.05	24.9	23.7	17	0.30	29.6

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

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Project: EB1714919

CERTIFICATE OF ANALYSIS BR17158882

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni
	Units	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOR	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
MP_WR031 12m- 13m		1.98	1.50	<0.05	0.10	0.01	0.007	0.06	7.0	0.3	0.01	16	0.07	0.01	<0.05	1.7
MP_WR032 28m- 29m		2.56	2.78	0.07	0.19	0.01	0.005	0.10	13.7	23.6	0.19	312	0.09	0.01	<0.05	24.4

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Project: EB1714919

CERTIFICATE OF ANALYSIS BR17158882

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
	LOR	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02
MP_WR031 12m- 13m		360	1.1	2.4	<0.001	0.01	0.13	2.3	<0.2	<0.2	0.8	<0.01	0.06	1.0	<0.005	0.02
MP_WR032 28m- 29m		420	1.0	4.9	<0.001	<0.01	0.10	1.0	0.5	<0.2	4.5	<0.01	0.05	1.6	<0.005	0.03

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Project: EB1714919

CERTIFICATE OF ANALYSIS BR17158882

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	U	V	W	Y	Zn	Zr
	Units	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.05	1	0.05	0.05	2	0.5
MP_WR031 12m- 13m		0.47	8	<0.05	1.61	8	3.8
MP_WR032 28m- 29m		0.40	14	<0.05	8.92	106	6.5

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Project: EB1714919

CERTIFICATE OF ANALYSIS BR17158882

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: ME- MS41

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

ACCREDITATION COMMENTS

Applies to Method: ME- MS41

NATA Accredited. Corporate Accreditation No: 825, Corporate Site No: 818. The Technical Signatory is David Jones, ICPMS Supervising Chemist.

LABORATORY ADDRESSES

Applies to Method: LOG- 22 ME- MS41

Processed at ALS Brisbane located at 32 Shand Street, Stafford, Brisbane, QLD, Australia. NATA Accreditation does not cover the performance of ALS Brisbane Sample Preparation which is processed at 116 Delta Street, Geebung, QLD 4034, Australia

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

CERTIFICATE BR17152694

Project: EB1714044

This report is for 9 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 25- JUL- 2017.

The following have access to data associated with this certificate:

SUB RESULTS - BRIS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG- 22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME- MS41	Ultra Trace Aqua Regia ICP- MS

To: ALS ENVIRONMENTAL
ATTN: SUB RESULTS - BRIS
32 SHAND STREET
STAFFORD QLD 4053

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

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

Signature:

Shaun Kenny, Brisbane Laboratory Manager

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Project: EB1714044

CERTIFICATE OF ANALYSIS BR17152694

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Hg	K
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	%
	LOR	0.01	0.01	0.1	10	10	0.05	0.01	0.01	0.01	0.1	1	0.2	0.01	0.01	0.01
EB1714044_001		0.02	0.03	27.8	<10	<10	<0.05	0.02	>25.0	0.22	1.8	8	8.3	0.29	0.06	0.01
EB1714044_002		0.10	0.97	59.9	<10	250	0.31	0.03	0.14	0.09	1.8	6	307	4.75	0.01	0.16
EB1714044_003		0.01	0.06	5.0	<10	10	<0.05	0.03	>25.0	0.26	0.6	5	3.5	0.27	0.01	0.01
EB1714044_004		0.12	0.42	94.8	<10	220	0.08	0.11	0.07	0.02	0.3	8	219	13.50	<0.01	0.31
EB1714044_005		0.01	0.02	6.1	<10	10	<0.05	0.01	>25.0	0.20	0.8	3	2.1	0.24	0.01	0.01
EB1714044_006		0.53	0.26	65.0	<10	50	0.06	0.76	1.62	0.01	14.9	7	8.8	2.52	0.02	0.24
EB1714044_007		0.86	1.07	36.5	<10	40	<0.05	0.20	1.82	0.23	23.2	18	1950	7.34	0.04	0.23
EB1714044_008		0.05	1.83	87.3	<10	220	0.25	0.03	0.41	0.32	17.0	16	207	4.58	0.04	0.30
EB1714044_009		0.76	0.39	115.0	<10	30	0.07	0.03	1.89	0.18	25.6	27	192.0	5.94	0.54	0.20

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Project: EB1714044

CERTIFICATE OF ANALYSIS BR17152694

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Th	Ti	Tl	U	V
	Units	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOR	0.01	5	0.05	0.01	0.2	0.2	0.05	0.2	0.2	0.2	0.2	0.005	0.02	0.05	1
EB1714044_001		0.18	435	0.05	0.01	5.7	3.5	1.25	0.8	<0.2	270	0.3	<0.005	0.08	0.69	1
EB1714044_002		0.05	47	1.09	0.01	1.0	77.9	1.93	1.4	<0.2	74.0	1.4	0.008	0.28	0.29	58
EB1714044_003		0.18	239	<0.05	0.01	1.7	2.2	0.23	0.8	<0.2	260	0.4	<0.005	<0.02	0.39	4
EB1714044_004		0.02	12	3.31	0.03	0.2	5.2	3.90	10.0	<0.2	48.9	1.3	<0.005	0.68	0.32	58
EB1714044_005		0.24	277	<0.05	0.01	3.2	3.8	0.47	0.7	<0.2	384	0.3	<0.005	<0.02	0.28	1
EB1714044_006		0.04	77	1.69	0.01	3.2	32.3	1.31	7.5	<0.2	45.9	0.7	<0.005	0.06	0.13	6
EB1714044_007		1.70	4780	0.87	0.01	4.7	14.9	1.68	9.5	<0.2	216	0.4	0.017	0.13	0.14	55
EB1714044_008		0.63	150	0.47	0.04	8.2	8.2	1.16	0.7	0.3	41.7	1.5	0.075	0.15	0.37	74
EB1714044_009		0.04	1140	1.17	0.01	7.7	31.9	14.75	0.7	<0.2	76.3	1.3	0.012	0.19	0.38	13

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

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Project: EB1714044

CERTIFICATE OF ANALYSIS BR17152694

Sample Description	Method Analyte Units LOR	ME- MS41 Zn ppm 2
EB1714044_001		7
EB1714044_002		153
EB1714044_003		7
EB1714044_004		9
EB1714044_005		7
EB1714044_006		2
EB1714044_007		164
EB1714044_008		171
EB1714044_009		90

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

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Project: EB1714044

CERTIFICATE OF ANALYSIS BR17152694

CERTIFICATE COMMENTS

ACCREDITATION COMMENTS

Applies to Method: NATA Accredited. Corporate Accreditation No: 825, Corporate Site No: 818. The Technical Signatory is David Jones, ICPMS Supervising Chemist.
ME- MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Brisbane located at 32 Shand Street, Stafford, Brisbane, QLD, Australia. NATA Accreditation does not cover the performance of ALS Brisbane Sample Preparation which is processed at 116 Delta Street, Geebung, QLD 4034, Australia
LOG- 22 ME- MS41

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Finalized Date: 17- JAN- 2017
Account: ALSENV

CERTIFICATE BR17005931

Project: EB1630270

This report is for 7 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 12- JAN- 2017.

The following have access to data associated with this certificate:

SUB RESULTS		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG- 22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME- MS41	Ultra Trace Aqua Regia ICP- MS

To: ALS ENVIRONMENTAL
ATTN: SUB RESULTS
32 SHAND STREET
STAFFORD QLD 4053

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

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

Signature:

Shaun Kenny, Brisbane Laboratory Manager

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Project: EB1630270

CERTIFICATE OF ANALYSIS BR17005931

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	0.01	0.1	0.2	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2
MP- WR001		0.18	2.82	27.2	<0.2	<10	20	0.12	0.04	4.06	0.04	17.55	26.1	9	0.35	187.0
MP- WR002		0.16	3.67	38.2	<0.2	<10	100	0.12	0.01	0.80	3.34	14.30	31.6	79	0.17	161.0
MP- WR003		0.11	2.40	10.9	<0.2	<10	20	0.20	0.04	4.67	0.07	13.10	24.5	28	0.41	179.0
MP- WR004		0.01	0.33	1.6	<0.2	<10	20	0.27	0.18	<0.01	0.01	16.40	0.9	23	0.16	59.7
MP- WR005		0.04	0.25	0.9	<0.2	<10	20	0.06	0.03	0.21	0.01	13.70	11.4	8	0.40	156.5
MP- WR006		16.00	0.39	653	0.2	<10	60	0.09	0.04	0.04	44.0	41.7	25.2	26	0.19	458
MP- WR007		0.73	3.21	107.0	<0.2	<10	20	0.08	0.02	0.70	8.15	17.15	22.2	9	0.92	243

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

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Project: EB1630270

CERTIFICATE OF ANALYSIS BR17005931

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni
	Units	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOR	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
MP- WR001		5.92	5.17	0.09	0.16	0.02	0.013	0.16	9.8	16.1	2.02	4230	1.06	0.01	0.10	7.0
MP- WR002		6.93	9.75	0.14	0.14	0.21	0.026	0.35	7.5	23.1	1.76	1650	0.21	0.04	0.05	36.3
MP- WR003		5.22	6.95	0.12	0.19	0.03	0.009	0.13	6.9	11.3	1.89	881	0.65	0.03	0.41	7.0
MP- WR004		2.33	2.32	<0.05	0.24	<0.01	<0.005	0.07	3.0	0.6	0.01	36	1.81	0.01	<0.05	14.0
MP- WR005		2.36	0.79	0.06	0.16	<0.01	<0.005	0.09	6.9	1.4	0.46	390	1.17	0.01	<0.05	18.7
MP- WR006		4.34	1.23	0.10	0.37	8.37	0.071	0.44	24.3	0.9	0.02	35	14.10	0.03	0.34	5.2
MP- WR007		5.97	9.95	0.12	0.22	1.34	0.069	0.23	8.6	20.2	3.48	4420	0.68	0.01	0.08	5.6

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

Australian Laboratory Services Pty. Ltd.

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ALS Brisbane is a NATA Accredited Testing Laboratory. Corporate Accreditation No: 825, Corporate Site No: 818.

Project: EB1630270

CERTIFICATE OF ANALYSIS BR17005931

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
	LOR	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02
MP- WR001		1990	4.2	3.0	0.001	0.88	1.28	2.6	0.5	<0.2	190.5	<0.01	0.01	0.8	0.023	0.06
MP- WR002		2120	6.8	4.3	<0.001	0.01	0.68	16.1	0.3	<0.2	53.1	<0.01	0.01	0.6	0.016	0.02
MP- WR003		1860	4.3	6.0	<0.001	1.05	1.92	3.9	0.4	0.2	172.5	0.01	0.01	0.9	0.183	0.07
MP- WR004		290	4.5	2.7	<0.001	0.01	0.17	1.9	<0.2	<0.2	2.0	<0.01	0.04	1.3	0.005	0.02
MP- WR005		840	1.4	2.9	<0.001	0.02	0.13	1.5	0.2	<0.2	21.8	<0.01	0.02	1.0	<0.005	<0.02
MP- WR006		2180	4560	9.0	0.006	3.10	28.0	2.5	1.4	0.2	169.0	<0.01	0.04	1.3	0.134	1.44
MP- WR007		2150	69.6	8.0	0.001	1.84	3.28	6.3	0.7	<0.2	38.5	<0.01	0.03	1.0	0.045	0.44

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

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Project: EB1630270

CERTIFICATE OF ANALYSIS BR17005931

Sample Description	Method	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41	ME- MS41
	Analyte	U	V	W	Y	Zn	Zr
	Units	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.05	1	0.05	0.05	2	0.5
MP- WR001		0.15	50	0.06	7.23	89	5.1
MP- WR002		0.28	132	0.05	8.00	1250	5.9
MP- WR003		0.17	101	0.23	6.47	84	5.4
MP- WR004		0.54	19	0.70	1.95	13	6.5
MP- WR005		0.29	11	0.18	2.50	34	5.5
MP- WR006		0.65	19	0.15	3.55	5410	11.4
MP- WR007		0.19	118	0.20	5.44	2860	7.6

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

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Project: EB1630270

CERTIFICATE OF ANALYSIS BR17005931

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: ME- MS41

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

ACCREDITATION COMMENTS

Applies to Method: ME- MS41

NATA Accredited. Corporate Accreditation No: 825, Corporate Site No: 818. The Technical Signatory is David Jones, ICPMS Supervising Chemist.

LABORATORY ADDRESSES

Applies to Method: LOG- 22 ME- MS41

Processed at ALS Brisbane located at 32 Shand Street, Stafford, Brisbane, QLD, Australia. NATA Accreditation does not cover the performance of ALS Brisbane Sample Preparation which is processed at 116 Delta Street, Geebung, QLD 4034, Australia

Appendix E: Static leach test results

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1324167**	Page	: 1 of 17
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Geochemical Characterisation - Phase 2	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 04-OCT-2013
Sampler	: ----	Issue Date	: 29-OCT-2013
Site	: ----		
		No. of samples received	: 29
Quote number	: BN/027/13	No. of samples analysed	: 29

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **EA046 ABCC: NATA Acreditation does not cover the performance of this service.**

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Andrew Epps	Metals Production Chemist	Brisbane Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics
SATISH.TRIVEDI	2 IC Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID: MP02701 Misc. DI Water Leach	MP02715 Misc. DI Water Leach	MP02719 Misc. DI Water Leach	MP02726 Misc. DI Water Leach	MP02729 Misc. DI Water Leach
				Client sampling date / time: [22-OCT-2013]	[22-OCT-2013]	[10-MAY-2013]	[22-OCT-2013]	[22-OCT-2013]
				EB1324167-001	EB1324167-009	EB1324167-011	EB1324167-013	EB1324167-015
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	4.90	7.69	8.08	6.40	7.85
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	133	1800	410	9	900
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2	49	43	5	43
Total Alkalinity as CaCO3	----	1	mg/L	2	49	43	5	43
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	7	5	2	2	5
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	39	898	122	<1	349
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	3	22	15	2	28
ED093W: Water Leachable Major Cations								
Calcium	7440-70-2	1	mg/L	4	372	43	<1	142
Magnesium	7439-95-4	1	mg/L	4	22	7	<1	14
Sodium	7440-23-5	1	mg/L	5	6	2	1	3
Potassium	7440-09-7	1	mg/L	13	54	36	<1	46
EG020W: Water Leachable Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.01	0.02	0.06	0.03	0.04
Antimony	7440-36-0	0.001	mg/L	<0.001	0.004	0.054	<0.001	0.006
Arsenic	7440-38-2	0.001	mg/L	0.002	<0.001	0.010	<0.001	0.002
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	0.019	0.061	0.006	0.005	0.023
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cerium	7440-45-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	0.016	0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	0.006	0.017	0.002	<0.001	0.002
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID: MP02701 Misc. DI Water Leach	MP02715 Misc. DI Water Leach	MP02719 Misc. DI Water Leach	MP02726 Misc. DI Water Leach	MP02729 Misc. DI Water Leach
Client sampling date / time				[22-OCT-2013]	[22-OCT-2013]	[10-MAY-2013]	[22-OCT-2013]	[22-OCT-2013]
				EB1324167-001	EB1324167-009	EB1324167-011	EB1324167-013	EB1324167-015
EG020W: Water Leachable Metals by ICP-MS - Continued								
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Lanthanum	7439-91-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	**0.004**	<0.001	**0.003**
Lithium	7439-93-2	0.001	mg/L	**0.010**	**0.009**	**0.003**	**0.001**	**0.008**
Lutetium	7439-94-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	**1.03**	**2.59**	**1.13**	**0.004**	**1.85**
Molybdenum	7439-98-7	0.001	mg/L	<0.001	**0.044**	**0.040**	<0.001	**0.032**
Neodymium	7440-00-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	**0.008**	**0.006**	**0.002**	<0.001	**0.001**
Praseodymium	7440-10-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Rubidium	7440-17-7	0.001	mg/L	**0.001**	**0.013**	**0.014**	<0.001	**0.014**
Samarium	7440-19-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L	**0.036**	**1.97**	**0.100**	**0.001**	**0.668**
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Terbium	7440-27-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Thorium	7440-29-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Thulium	7440-30-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Ytterbium	7440-64-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Yttrium	7440-65-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	**0.025**	<0.005	<0.005	<0.005	<0.005

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID: MP02701 Misc. DI Water Leach	MP02715 Misc. DI Water Leach	MP02719 Misc. DI Water Leach	MP02726 Misc. DI Water Leach	MP02729 Misc. DI Water Leach
Client sampling date / time				[22-OCT-2013]	[22-OCT-2013]	[10-MAY-2013]	[22-OCT-2013]	[22-OCT-2013]
				EB1324167-001	**EB1324167-009**	**EB1324167-011**	**EB1324167-013**	**EB1324167-015**
EG020W: Water Leachable Metals by ICP-MS - Continued								
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	7439-89-6	0.05	mg/L	<0.05	**0.32**	<0.05	<0.05	**0.13**
EG035W: Water Leachable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**17.5**	**5.50**	**5.46**	**3.64**	**5.75**

Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)				Client sample ID	MP02731 Misc. DI Water Leach	MP02735 Misc. DI Water Leach	MP02736 Misc. DI Water Leach	MP02738 Misc. DI Water Leach	MP02741 Misc. DI Water Leach
				Client sampling date / time	[22-OCT-2013]	[10-MAY-2013]	[22-OCT-2013]	[22-OCT-2013]	[10-MAY-2013]
Compound	CAS Number	LOR	Unit		EB1324167-016	EB1324167-017	EB1324167-018	EB1324167-019	EB1324167-020
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		5.66	7.19	5.35	5.91	3.49
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		1720	1390	62	1070	1520
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		4	37	3	3	<1
Total Alkalinity as CaCO3	----	1	mg/L		4	37	3	3	<1
ED038A: Acidity									
Acidity as CaCO3	----	1	mg/L		12	5	5	24	760
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		901	640	20	498	772
ED045G: Chloride Discrete analyser									
Chloride	16887-00-6	1	mg/L		2	7	2	5	3
ED093W: Water Leachable Major Cations									
Calcium	7440-70-2	1	mg/L		388	201	<1	82	75
Magnesium	7439-95-4	1	mg/L		24	54	<1	41	42
Sodium	7440-23-5	1	mg/L		1	2	9	2	2
Potassium	7440-09-7	1	mg/L		8	44	2	31	1
EG020W: Water Leachable Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		0.21	<0.01	<0.01	0.03	61.0
Antimony	7440-36-0	0.001	mg/L		0.001	0.001	<0.001	0.001	0.001
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	0.020	0.003
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	0.005
Barium	7440-39-3	0.001	mg/L		0.017	0.063	0.008	0.032	0.001
Bismuth	7440-69-9	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		0.0083	0.0124	<0.0001	0.0064	0.0029
Cerium	7440-45-1	0.001	mg/L		0.386	<0.001	<0.001	0.005	0.008
Caesium	7440-46-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	7440-47-3	0.001	mg/L		0.001	<0.001	<0.001	<0.001	0.128
Cobalt	7440-48-4	0.001	mg/L		0.215	0.072	<0.001	0.393	4.96
Copper	7440-50-8	0.001	mg/L		0.015	0.009	0.001	0.140	0.238
Dysprosium	7429-91-6	0.001	mg/L		0.005	<0.001	<0.001	<0.001	0.013

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID: MP02731 Misc. DI Water Leach	MP02735 Misc. DI Water Leach	MP02736 Misc. DI Water Leach	MP02738 Misc. DI Water Leach	MP02741 Misc. DI Water Leach
Client sampling date / time				[22-OCT-2013]	[10-MAY-2013]	[22-OCT-2013]	[22-OCT-2013]	[10-MAY-2013]
				EB1324167-016	EB1324167-017	EB1324167-018	EB1324167-019	EB1324167-020
EG020W: Water Leachable Metals by ICP-MS - Continued								
Erbium	7440-52-0	0.001	mg/L	**0.002**	<0.001	<0.001	<0.001	**0.012**
Europium	7440-53-1	0.001	mg/L	**0.004**	<0.001	<0.001	<0.001	**0.002**
Gadolinium	7440-54-2	0.001	mg/L	**0.024**	<0.001	<0.001	<0.001	**0.008**
Gallium	7440-55-3	0.001	mg/L	**0.002**	**0.001**	<0.001	**0.006**	<0.001
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	**0.003**
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Lanthanum	7439-91-0	0.001	mg/L	**0.189**	<0.001	<0.001	**0.002**	**0.005**
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	**0.004**	<0.001
Lithium	7439-93-2	0.001	mg/L	**0.007**	**0.008**	**0.002**	**0.020**	**0.035**
Lutetium	7439-94-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	**0.003**
Manganese	7439-96-5	0.001	mg/L	**4.83**	**36.2**	**0.019**	**110**	**2.47**
Molybdenum	7439-98-7	0.001	mg/L	<0.001	**0.002**	<0.001	<0.001	<0.001
Neodymium	7440-00-8	0.001	mg/L	**0.182**	<0.001	<0.001	**0.002**	**0.010**
Nickel	7440-02-0	0.001	mg/L	**0.252**	**0.026**	<0.001	**0.193**	**1.25**
Praseodymium	7440-10-0	0.001	mg/L	**0.045**	<0.001	<0.001	<0.001	**0.002**
Rubidium	7440-17-7	0.001	mg/L	**0.002**	**0.015**	<0.001	**0.008**	**0.002**
Samarium	7440-19-9	0.001	mg/L	**0.028**	<0.001	<0.001	<0.001	**0.004**
Selenium	7782-49-2	0.01	mg/L	**0.01**	**0.02**	<0.01	**0.07**	<0.01
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L	**1.00**	**1.14**	**0.004**	**0.642**	**0.032**
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Terbium	7440-27-9	0.001	mg/L	**0.002**	<0.001	<0.001	<0.001	**0.002**
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Thorium	7440-29-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Thulium	7440-30-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	**0.002**
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	**0.010**
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Ytterbium	7440-64-4	0.001	mg/L	**0.002**	<0.001	<0.001	<0.001	**0.016**
Yttrium	7440-65-5	0.001	mg/L	**0.024**	<0.001	<0.001	**0.006**	**0.095**
Zinc	7440-66-6	0.005	mg/L	**0.095**	**0.243**	**0.008**	**4.33**	**70.6**

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID: MP02731 Misc. DI Water Leach	MP02735 Misc. DI Water Leach	MP02736 Misc. DI Water Leach	MP02738 Misc. DI Water Leach	MP02741 Misc. DI Water Leach
Client sampling date / time				[22-OCT-2013]	[10-MAY-2013]	[22-OCT-2013]	[22-OCT-2013]	[10-MAY-2013]
				EB1324167-016	EB1324167-017	EB1324167-018	EB1324167-019	EB1324167-020
EG020W: Water Leachable Metals by ICP-MS - Continued								
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	7439-89-6	0.05	mg/L	**0.42**	<0.05	<0.05	**0.08**	**127**
EG035W: Water Leachable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**9.05**	**9.21**	**10.6**	**14.4**	**17.5**

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID: MP02750 Misc. DI Water Leach	MP02701 Misc. Acid Leach	MP02719 Misc. Acid Leach	MP02726 Misc. Acid Leach	MP02736 Misc. Acid Leach
				Client sampling date / time: [10-MAY-2013]	[24-OCT-2013]	[24-OCT-2013]	[24-OCT-2013]	[24-OCT-2013]
				EB1324167-024	EB1324167-025	EB1324167-026	EB1324167-027	EB1324167-028
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	8.11	4.17	6.36	4.54	4.25
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	297	303	4260	272	377
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	55	<1	87	<1	<1
Total Alkalinity as CaCO3	----	1	mg/L	55	<1	87	<1	<1
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	2	14	60	10	10
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	55	----	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	41	3	2	11	6
ED093W: Water Leachable Major Cations								
Calcium	7440-70-2	1	mg/L	27	14	499	9	6
Magnesium	7439-95-4	1	mg/L	4	11	111	15	17
Sodium	7440-23-5	1	mg/L	12	5	3	19	34
Potassium	7440-09-7	1	mg/L	18	22	64	7	13
EG020W: Water Leachable Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.20	0.31	0.02	0.02	0.18
Antimony	7440-36-0	0.001	mg/L	0.013	<0.001	0.063	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.006	8.34	0.003	0.002
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	0.010	0.117	0.124	0.192	0.065
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0004	0.0044	0.0020	0.0013
Cerium	7440-45-1	0.001	mg/L	<0.001	0.007	0.021	<0.001	<0.001
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.100	0.198	0.151	0.011
Copper	7440-50-8	0.001	mg/L	0.003	0.043	<0.001	0.030	0.020
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	0.002	<0.001	<0.001

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	MP02750 Misc. DI Water Leach	MP02701 Misc. Acid Leach	MP02719 Misc. Acid Leach	MP02726 Misc. Acid Leach	MP02736 Misc. Acid Leach
				Client sampling date / time	[10-MAY-2013]	[24-OCT-2013]	[24-OCT-2013]	[24-OCT-2013]	[24-OCT-2013]
					EB1324167-024	EB1324167-025	EB1324167-026	EB1324167-027	EB1324167-028
EG020W: Water Leachable Metals by ICP-MS - Continued									
Erbium	7440-52-0	0.001	mg/L		<0.001	<0.001	**0.001**	<0.001	<0.001
Europium	7440-53-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Gadolinium	7440-54-2	0.001	mg/L		<0.001	**0.001**	**0.003**	<0.001	<0.001
Gallium	7440-55-3	0.001	mg/L		<0.001	<0.001	**0.035**	<0.001	**0.001**
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Lanthanum	7439-91-0	0.001	mg/L		<0.001	**0.003**	**0.021**	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	**0.267**	<0.001	<0.001
Lithium	7439-93-2	0.001	mg/L		**0.001**	**0.020**	**0.013**	**0.038**	**0.012**
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L		**0.019**	**4.79**	**1370**	**0.777**	**0.354**
Molybdenum	7439-98-7	0.001	mg/L		**0.002**	<0.001	**0.006**	<0.001	<0.001
Neodymium	7440-00-8	0.001	mg/L		<0.001	**0.004**	**0.008**	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.001**	**0.037**	**0.120**	**0.027**	**0.022**
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	**0.002**	<0.001	<0.001
Rubidium	7440-17-7	0.001	mg/L		**0.004**	**0.003**	**0.022**	<0.001	**0.002**
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	**0.001**	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**0.812**	**0.141**	**4.34**	**0.224**	**0.077**
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Titanium	7440-32-6	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Yttrium	7440-65-5	0.001	mg/L		<0.001	**0.004**	**0.022**	**0.002**	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.152**	**1.42**	**0.346**	**0.199**

Analytical Results

Sub-Matrix: **DI WATER LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID: MP02750 Misc. DI Water Leach	MP02701 Misc. Acid Leach	MP02719 Misc. Acid Leach	MP02726 Misc. Acid Leach	MP02736 Misc. Acid Leach
			Client sampling date / time	[10-MAY-2013]	[24-OCT-2013]	[24-OCT-2013]	[24-OCT-2013]	[24-OCT-2013]
				EB1324167-024	EB1324167-025	EB1324167-026	EB1324167-027	EB1324167-028
EG020W: Water Leachable Metals by ICP-MS - Continued								
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	**0.015**	<0.005	<0.005
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	**0.36**
EG035W: Water Leachable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**5.61**	**26.7**	**29.4**	**46.0**	**51.5**

Analytical Results

Sub-Matrix: **LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	Misc. Acid Control	----	----	----	----
				Client sampling date / time	[25-OCT-2013]	----	----	----	----
					EB1324167-029	----	----	----	----
EG020W: Water Leachable Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.01**	----	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L		<0.001	----	----	----	----
Barium	7440-39-3	0.001	mg/L		**0.001**	----	----	----	----
Bismuth	7440-69-9	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	----	----	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Dysprosium	7429-91-6	0.001	mg/L		<0.001	----	----	----	----
Erbium	7440-52-0	0.001	mg/L		<0.001	----	----	----	----
Europium	7440-53-1	0.001	mg/L		<0.001	----	----	----	----
Gadolinium	7440-54-2	0.001	mg/L		<0.001	----	----	----	----
Gallium	7440-55-3	0.001	mg/L		<0.001	----	----	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	----	----	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	----	----	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	----	----	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Lithium	7439-93-2	0.001	mg/L		<0.001	----	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.007**	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	----	----	----	----
Rubidium	7440-17-7	0.001	mg/L		<0.001	----	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Silver	7440-22-4	0.001	mg/L		<0.001	----	----	----	----
Strontium	7440-24-6	0.001	mg/L		<0.001	----	----	----	----

Analytical Results

Sub-Matrix: **LEACHATE** (Matrix: **WATER**)				Client sample ID	**Misc. Acid Control**	----	----	----	----
				Client sampling date / time	[25-OCT-2013]	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1324167-029**	**----**	**----**	**----**	**----**
EG020W: Water Leachable Metals by ICP-MS - Continued									
Tellurium	22541-49-7	0.005	mg/L	<0.005	----	----	----	----
Terbium	7440-27-9	0.001	mg/L	<0.001	----	----	----	----
Thallium	7440-28-0	0.001	mg/L	<0.001	----	----	----	----
Thorium	7440-29-1	0.001	mg/L	<0.001	----	----	----	----
Thulium	7440-30-4	0.001	mg/L	<0.001	----	----	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	----	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	----	----	----	----
Uranium	7440-61-1	0.001	mg/L	<0.001	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	----	----	----	----
Ytterbium	7440-64-4	0.001	mg/L	<0.001	----	----	----	----
Yttrium	7440-65-5	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.006**	----	----	----	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	----	----	----	----
Boron	7440-42-8	0.05	mg/L	<0.05	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG035W: Water Leachable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	MP02702	MP02703	MP02706	MP02710	MP02711
				Client sampling date / time	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]
Compound	CAS Number	LOR	Unit		EB1324167-002	EB1324167-003	EB1324167-004	EB1324167-005	EB1324167-006
EA150: Particle Sizing									
+75µm	----	1	%		60	----	----	60	----
+150µm	----	1	%		51	----	----	52	----
+300µm	----	1	%		42	----	----	44	----
+425µm	----	1	%		36	----	----	40	----
+600µm	----	1	%		31	----	----	36	----
+1180µm	----	1	%		22	----	----	27	----
+2.36mm	----	1	%		13	----	----	18	----
+4.75mm	----	1	%		3	----	----	7	----
+9.5mm	----	1	%		<1	----	----	<1	----
+19.0mm	----	1	%		<1	----	----	<1	----
+37.5mm	----	1	%		<1	----	----	<1	----
+75.0mm	----	1	%		<1	----	----	<1	----
EA026 : Chromium Reducible Sulfur									
Chromium Reducible Sulphur	----	0.005	%		3.38	1.93	----	2.94	----
EA150: Soil Classification based on Particle Size									
Fines (<75 µm)	----	1	%		40	----	----	40	----
Sand (>75 µm)	----	1	%		47	----	----	42	----
Gravel (>2mm)	----	1	%		13	----	----	18	----
Cobbles (>6cm)	----	1	%		<1	----	----	<1	----
ED008: Exchangeable Cations									
Exchangeable Calcium	----	0.1	meq/100g		----	----	17.4	----	13.9
Exchangeable Magnesium	----	0.1	meq/100g		----	----	0.3	----	0.1
Exchangeable Potassium	----	0.1	meq/100g		----	----	0.1	----	<0.1
Exchangeable Sodium	----	0.1	meq/100g		----	----	<0.1	----	<0.1
Cation Exchange Capacity	----	0.1	meq/100g		----	----	17.8	----	14.1
Exchangeable Sodium Percent	----	0.1	%		----	----	<0.1	----	<0.1
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		0.04	----	0.04	0.03	----
EP003TC: Total Carbon (TC) in Soil									
Total Carbon	----	0.02	%		0.42	----	0.58	0.82	----
EP003TIC: Total inorganic Carbon (TIC) in Soil									
Total Inorganic Carbon	----	0.02	%		0.38	----	0.54	0.79	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	MP02712	MP02713	MP02716	MP02719 Misc. DI Water Leach	MP02722
			Client sampling date / time	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]
Compound	CAS Number	LOR	Unit	EB1324167-007	EB1324167-008	EB1324167-010	EB1324167-011	EB1324167-012
EA026 : Chromium Reducible Sulfur								
Chromium Reducible Sulphur	----	0.005	%	----	----	----	**3.72**	----
ED008: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	----	**1.2**	----	----	**4.8**
Exchangeable Magnesium	----	0.1	meq/100g	----	**3.6**	----	----	**0.6**
Exchangeable Potassium	----	0.1	meq/100g	----	**0.3**	----	----	**0.1**
Exchangeable Sodium	----	0.1	meq/100g	----	**0.3**	----	----	<0.1
Cation Exchange Capacity	----	0.1	meq/100g	----	**5.4**	----	----	**5.5**
Exchangeable Sodium Percent	----	0.1	%	----	**5.4**	----	----	<0.1
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	**0.16**	----	<0.02	----	----
EP003TC: Total Carbon (TC) in Soil								
Total Carbon	----	0.02	%	**1.64**	----	**0.92**	----	----
EP003TIC: Total inorganic Carbon (TIC) in Soil								
Total Inorganic Carbon	----	0.02	%	**1.48**	----	**0.92**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	MP02727	MP02735 Misc. DI Water Leach	MP02736 Misc. DI Water Leach	MP02738 Misc. DI Water Leach	MP02741 Misc. DI Water Leach
				Client sampling date / time	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]
Compound	CAS Number	LOR	Unit		EB1324167-014	EB1324167-017	EB1324167-018	EB1324167-019	EB1324167-020
EA150: Particle Sizing									
+75µm	----	1	%		58	----	----	----	----
+150µm	----	1	%		48	----	----	----	----
+300µm	----	1	%		38	----	----	----	----
+425µm	----	1	%		33	----	----	----	----
+600µm	----	1	%		27	----	----	----	----
+1180µm	----	1	%		18	----	----	----	----
+2.36mm	----	1	%		11	----	----	----	----
+4.75mm	----	1	%		5	----	----	----	----
+9.5mm	----	1	%		2	----	----	----	----
+19.0mm	----	1	%		<1	----	----	----	----
+37.5mm	----	1	%		<1	----	----	----	----
+75.0mm	----	1	%		<1	----	----	----	----
EA026 : Chromium Reducible Sulfur									
Chromium Reducible Sulphur	----	0.005	%		0.392	5.22	----	----	2.84
EA150: Soil Classification based on Particle Size									
Fines (<75 µm)	----	1	%		42	----	----	----	----
Sand (>75 µm)	----	1	%		47	----	----	----	----
Gravel (>2mm)	----	1	%		11	----	----	----	----
Cobbles (>6cm)	----	1	%		<1	----	----	----	----
ED008: Exchangeable Cations									
Exchangeable Calcium	----	0.1	meq/100g		----	----	0.7	0.4	----
Exchangeable Magnesium	----	0.1	meq/100g		----	----	2.5	0.2	----
Exchangeable Potassium	----	0.1	meq/100g		----	----	0.2	<0.1	----
Exchangeable Sodium	----	0.1	meq/100g		----	----	0.1	<0.1	----
Cation Exchange Capacity	----	0.1	meq/100g		----	----	3.5	0.7	----
Exchangeable Sodium Percent	----	0.1	%		----	----	3.0	<0.1	----
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		0.03	----	----	----	----
EP003TC: Total Carbon (TC) in Soil									
Total Carbon	----	0.02	%		0.64	----	----	----	----
EP003TIC: Total inorganic Carbon (TIC) in Soil									
Total Inorganic Carbon	----	0.02	%		0.61	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	MP02743	MP02746	MP02749	MP02750 Misc. DI Water Leach	----
				Client sampling date / time	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]	[10-MAY-2013]	----
Compound	CAS Number	LOR	Unit		EB1324167-021	EB1324167-022	EB1324167-023	EB1324167-024	----
EA150: Particle Sizing									
+75µm	----	1	%		----	----	98	----	----
+150µm	----	1	%		----	----	97	----	----
+300µm	----	1	%		----	----	96	----	----
+425µm	----	1	%		----	----	96	----	----
+600µm	----	1	%		----	----	95	----	----
+1180µm	----	1	%		----	----	92	----	----
+2.36mm	----	1	%		----	----	86	----	----
+4.75mm	----	1	%		----	----	75	----	----
+9.5mm	----	1	%		----	----	25	----	----
+19.0mm	----	1	%		----	----	<1	----	----
+37.5mm	----	1	%		----	----	<1	----	----
+75.0mm	----	1	%		----	----	<1	----	----
EA026 : Chromium Reducible Sulfur									
Chromium Reducible Sulphur	----	0.005	%		----	----	1.70	1.98	----
EA150: Soil Classification based on Particle Size									
Fines (<75 µm)	----	1	%		----	----	2	----	----
Sand (>75 µm)	----	1	%		----	----	11	----	----
Gravel (>2mm)	----	1	%		----	----	86	----	----
Cobbles (>6cm)	----	1	%		----	----	<1	----	----
ED008: Exchangeable Cations									
Exchangeable Calcium	----	0.1	meq/100g		----	20.2	14.5	----	----
Exchangeable Magnesium	----	0.1	meq/100g		----	0.3	0.2	----	----
Exchangeable Potassium	----	0.1	meq/100g		----	0.3	<0.1	----	----
Exchangeable Sodium	----	0.1	meq/100g		----	<0.1	<0.1	----	----
Cation Exchange Capacity	----	0.1	meq/100g		----	20.7	14.7	----	----
Exchangeable Sodium Percent	----	0.1	%		----	<0.1	<0.1	----	----
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		0.04	----	0.06	----	----
EP003TC: Total Carbon (TC) in Soil									
Total Carbon	----	0.02	%		0.20	----	0.80	----	----
EP003TIC: Total inorganic Carbon (TIC) in Soil									
Total Inorganic Carbon	----	0.02	%		0.16	----	0.74	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1801868**	Page	: 1 of 8
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 08 9288 2000	Telephone	: +61-7-3243 7222
Project	: NSW Geochem Characterisation	Date Samples Received	: 15-Jan-2018 11:43
Order number	: ----	Date Analysis Commenced	: 22-Jan-2018
C-O-C number	: ----	Issue Date	: 24-Jan-2018 11:21
Sampler	: ----		
Site	: ----		
Quote number	: BN/344/16		
No. of samples received	: 9		
No. of samples analysed	: 9		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)			Client sample ID	MP-WR017	MP-WR019	MP-WR020	MP-WR021	MP-WR025
			Client sampling date / time	06-Jul-2017 00:00	06-Jul-2017 00:00	06-Jul-2017 00:00	06-Jul-2017 00:00	10-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EB1801868-001	EB1801868-002	EB1801868-003	EB1801868-004	EB1801868-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.88	6.86	8.05	8.04	9.76
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	251	1260	151	378	171
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	50
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	79	84	48	68	<1
Total Alkalinity as CaCO3	----	1	mg/L	79	84	48	68	51
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	1	34	<1	<1	<1
ED040W: Water Leachable Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	1	mg/L	10	660	22	142	31
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	21	4	4	47	20
ED093W: Water Leachable Major Cations								
Calcium	7440-70-2	1	mg/L	25	275	20	30	3
Magnesium	7439-95-4	1	mg/L	8	5	2	3	<1
Sodium	7440-23-5	1	mg/L	10	7	4	10	12
Potassium	7440-09-7	1	mg/L	6	18	2	47	30
EG020W: Water Leachable Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.08	<0.01	<0.01	0.20	0.06
Antimony	7440-36-0	0.001	mg/L	0.002	<0.001	0.015	0.047	0.035
Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	0.008	0.004	0.043
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	0.526	0.476	0.386	0.513	0.434
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	0.0001	0.0002	0.0002	0.0002	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	0.003	0.020	<0.001	0.009	0.001
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	0.004	0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	0.002	<0.001

Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)				Client sample ID	MP-WR017	MP-WR019	MP-WR020	MP-WR021	MP-WR025
				Client sampling date / time	06-Jul-2017 00:00	06-Jul-2017 00:00	06-Jul-2017 00:00	06-Jul-2017 00:00	10-Jul-2017 00:00
Compound	CAS Number	LOR	Unit		EB1801868-001	EB1801868-002	EB1801868-003	EB1801868-004	EB1801868-005
					Result	Result	Result	Result	Result
EG020W: Water Leachable Metals by ICP-MS - Continued									
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	**0.03**	<0.01
Silver	7440-22-4	0.001	mg/L		**0.001**	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**0.075**	**0.131**	**0.221**	**0.111**	**0.035**
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Titanium	7440-32-6	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**0.08**
Zinc	7440-66-6	0.005	mg/L		**0.082**	**0.322**	**0.020**	**0.073**	**0.011**
Boron	7440-42-8	0.05	mg/L		**0.09**	**0.07**	**0.12**	**0.09**	**0.07**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	**0.05**
EG035W: Water Leachable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**1.1**	<0.1	<0.1	**0.6**	**0.3**

Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)			Client sample ID	MP-WR026	MP-WR027	MP-WR030	MP-WR032	----
			Client sampling date / time	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	21-Jul-2017 00:00	----
Compound	CAS Number	LOR	Unit	EB1801868-006	EB1801868-007	EB1801868-008	EB1801868-009	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.67**	**5.66**	**7.97**	**7.54**	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**177**	**539**	**521**	**55**	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**40**	**4**	**115**	**16**	----
Total Alkalinity as CaCO3	----	1	mg/L	**40**	**4**	**115**	**16**	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**2**	**11**	**2**	**1**	----
ED040W: Water Leachable Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	1	mg/L	**37**	**230**	**223**	**4**	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**6**	**3**	**84**	**6**	----
ED093W: Water Leachable Major Cations								
Calcium	7440-70-2	1	mg/L	**10**	**16**	**46**	<1	----
Magnesium	7439-95-4	1	mg/L	**6**	**33**	**23**	<1	----
Sodium	7440-23-5	1	mg/L	**10**	**19**	**19**	**9**	----
Potassium	7440-09-7	1	mg/L	**7**	**24**	**10**	**1**	----
EG020W: Water Leachable Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	**0.29**	**0.01**	**0.98**	----
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	**0.003**	<0.001	----
Arsenic	7440-38-2	0.001	mg/L	**0.001**	**0.001**	<0.001	<0.001	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Barium	7440-39-3	0.001	mg/L	**0.451**	**0.557**	**0.448**	**0.360**	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0001**	**0.0003**	**0.0002**	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	**0.359**	**0.001**	**0.002**	----
Copper	7440-50-8	0.001	mg/L	<0.001	**0.054**	**0.002**	**0.003**	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L	**0.027**	**4.97**	**0.079**	**0.026**	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L	<0.001	**0.475**	**0.002**	**0.002**	----

Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)				Client sample ID	MP-WR026	MP-WR027	MP-WR030	MP-WR032	----
				Client sampling date / time	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	21-Jul-2017 00:00	----
Compound	CAS Number	LOR	Unit		EB1801868-006	EB1801868-007	EB1801868-008	EB1801868-009	--------
					Result	Result	Result	Result	----
EG020W: Water Leachable Metals by ICP-MS - Continued									
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Strontium	7440-24-6	0.001	mg/L		**0.048**	**0.141**	**0.358**	**0.006**	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Titanium	7440-32-6	0.01	mg/L		<0.01	<0.01	<0.01	**0.01**	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Zinc	7440-66-6	0.005	mg/L		**0.109**	**0.382**	**0.133**	**0.062**	----
Boron	7440-42-8	0.05	mg/L		**0.07**	**0.10**	**0.07**	**0.09**	----
Iron	7439-89-6	0.05	mg/L		<0.05	**0.82**	<0.05	**1.82**	----
EG035W: Water Leachable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.6**	**0.2**	**0.2**	**0.5**	----

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)				Client sample ID	MP-WR017	MP-WR019	MP-WR020	MP-WR021	MP-WR025
				Client sampling date / time	06-Jul-2017 00:00	06-Jul-2017 00:00	06-Jul-2017 00:00	06-Jul-2017 00:00	10-Jul-2017 00:00
Compound	*CAS Number*	*LOR*	*Unit*		**EB1801868-001**	**EB1801868-002**	**EB1801868-003**	**EB1801868-004**	**EB1801868-005**
					Result	Result	Result	Result	Result
Sample Preparation Method									
Amount	----	0.1	g		**1.0**	**1.0**	**1.0**	**1.0**	**1.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	MP-WR026	MP-WR027	MP-WR030	MP-WR032	----
				Client sampling date / time	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	21-Jul-2017 00:00	----
Compound	CAS Number	LOR	Unit		EB1801868-006	EB1801868-007	EB1801868-008	EB1801868-009	--------
					Result	Result	Result	Result	----
Sample Preparation Method									
Amount	----	0.1	g		**1.0**	**1.0**	**1.0**	**1.0**	**----**

Appendix F: XRD mineralogy results

POWDER X-RAY DIFFRACTION ANALYSIS OF SUBMITTED SAMPLES

QUT Reference: XAF8366
Your Reference: EB1324167 : 002 MP02702, 005 MP02710, 014 MP2727
Date: 22 October 2013

INTRODUCTION

The samples were sent by ALS-Environmental (Brisbane) for powder x-ray diffraction analysis to determine the identity and abundance of compounds present. The samples were received on 14 October 2013.

PROCEDURE

The samples were powders. A portion of each sample was weighed and 10% by weight internal standard (corundum) added. The specimens were prepared using a McCrone micronising mill using corundum beads and ethanol as a fluid. The ethanol was evaporated at 40 C in a drying oven. X-ray diffraction is a technique that can be used to examine crystalline compounds. Non-crystalline phases such as glass or coal scatter x-rays but do not give rise to diffraction information. Amorphous (non-diffracting) solids cause scattering bands that tend to be intense if the amorphous solid is a significant proportion of the sample.

Step-scanned diffraction patterns were collected using a Panalytical vertical diffractometer, cobalt Kα radiation and the usual conditions. The powder x-ray diffraction data was analysed using Jade (V9.0, Materials Data Inc.) for phase identification and SiroQuant (V3, Sietronics Pty Ltd) for quantitative analysis using a Rietveld technique. The added internal standard at known concentration allows the concentration of the other modelled phases to be calculated on an absolute scale. When the data is modeled, the estimated concentration of the internal standard should be the expected value, or if there is an unidentified phase then it will be somewhat higher than the expected value. The known concentration of the internal standard allows the concentration of the other phases to be determined on an absolute scale. The sum of the absolute concentrations is usually subtracted from 100 wt% to obtain a residual. The residual represents the unexplained portion of the pattern; it may be the non-diffracting content but will also represent unidentified phases or poorly modeled phases. It is not an accurate measure as its error is the sum of errors of the modeled phases.

RESULTS

The powder XRD pattern shows the presence of crystalline phases. Enclosed are graphics of the diffraction patterns of the specimens with the phases identified indicated on the graphics. There may be minor (< 10 wt%, >1wt%) unidentified phases present.

The patterns are similar but differed in detail. The dominant phases are Quartz, feldspar, Muscovite and Chlorite. There are minor phases that include carbonates and Pyrite.

Powder X-ray diffraction is phase analysis, it is not chemical analysis. Phase concentrations may be mis-estimated if an incorrect chemical formula is assigned to a phase.

Below is a table of the estimated phase concentrations.

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Central Analytical Research Facility, IFE
Queensland University of Technology

GARDENS POINT CAMPUS 2 GEORGE STREET GPO BOX 2434 BRISBANE Q 4001 AUSTRALIA PHONE (07) 3138 5122 FAX 31384438

Table of estimated phases concentrations (absolute, wt%)

XAF8366	1	2	3
ALS Enviro EB1324167	002 MP02702	005 MP02710	014 MP2727
Nondiffracting/unidentified	< 5	< 5	< 5
Quartz	20	16	10.5
Plagioclase (Albite)		24	41
K-feldspar (Microcline)	24	0.5	2.5
Muscovite	26	28.5	27
Chlorite	13	16.5	10.5
Ankerite	3		
Siderite	3		
Calcite		7	3.5
Pyrite	7	5	0.5

Tony Raftery

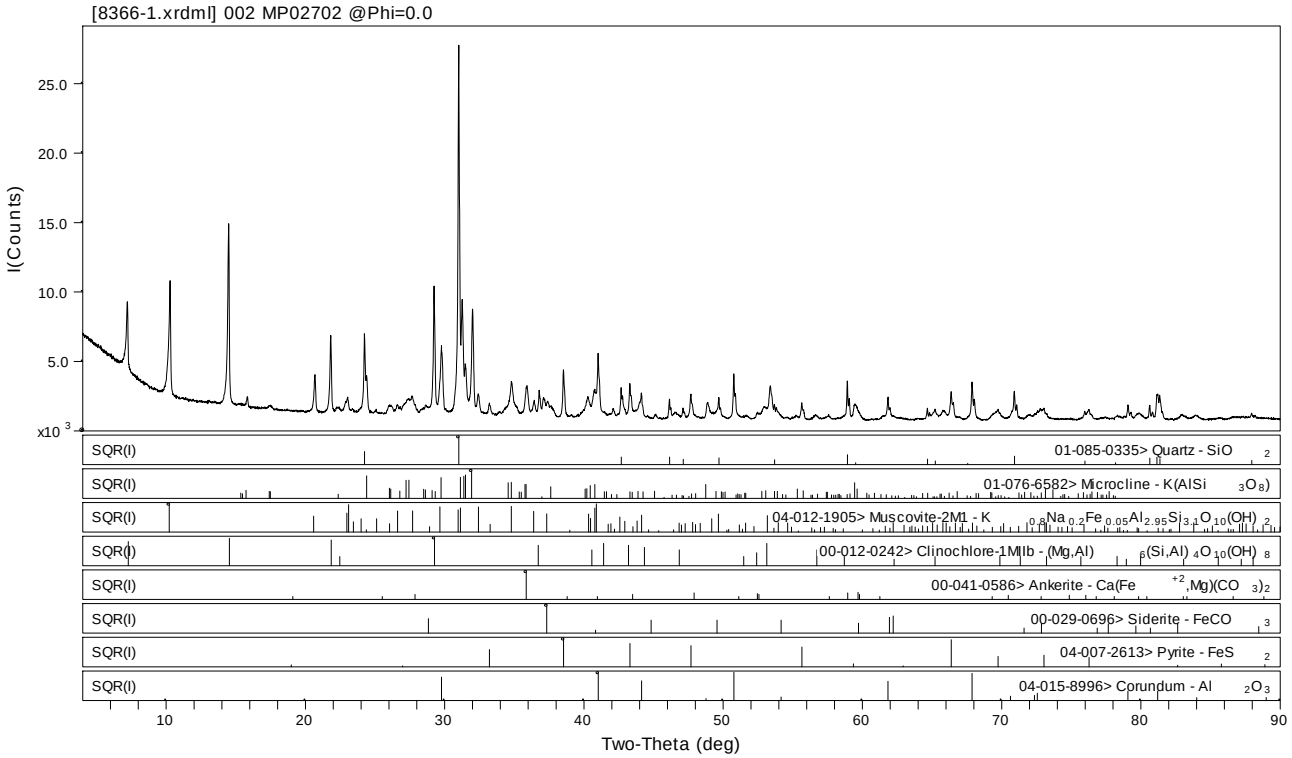
Tony Raftery
Senior Technologist

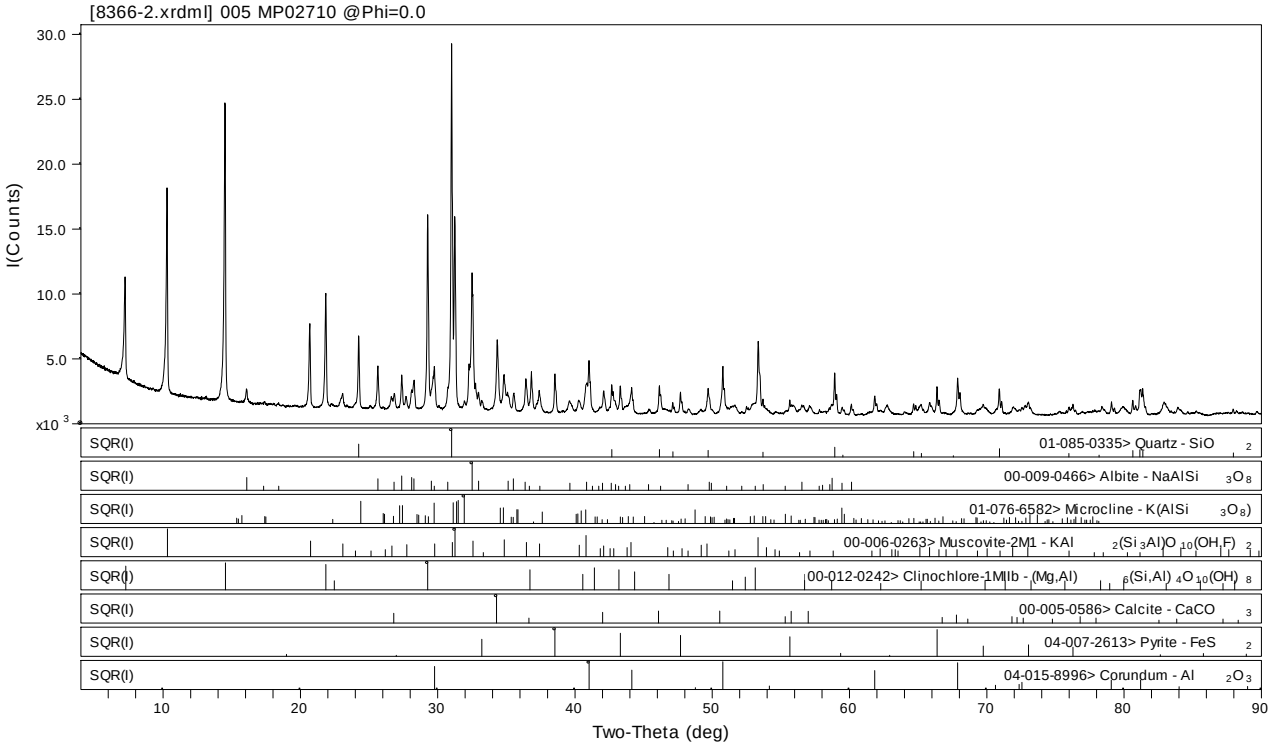
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Powder XRD Patterns

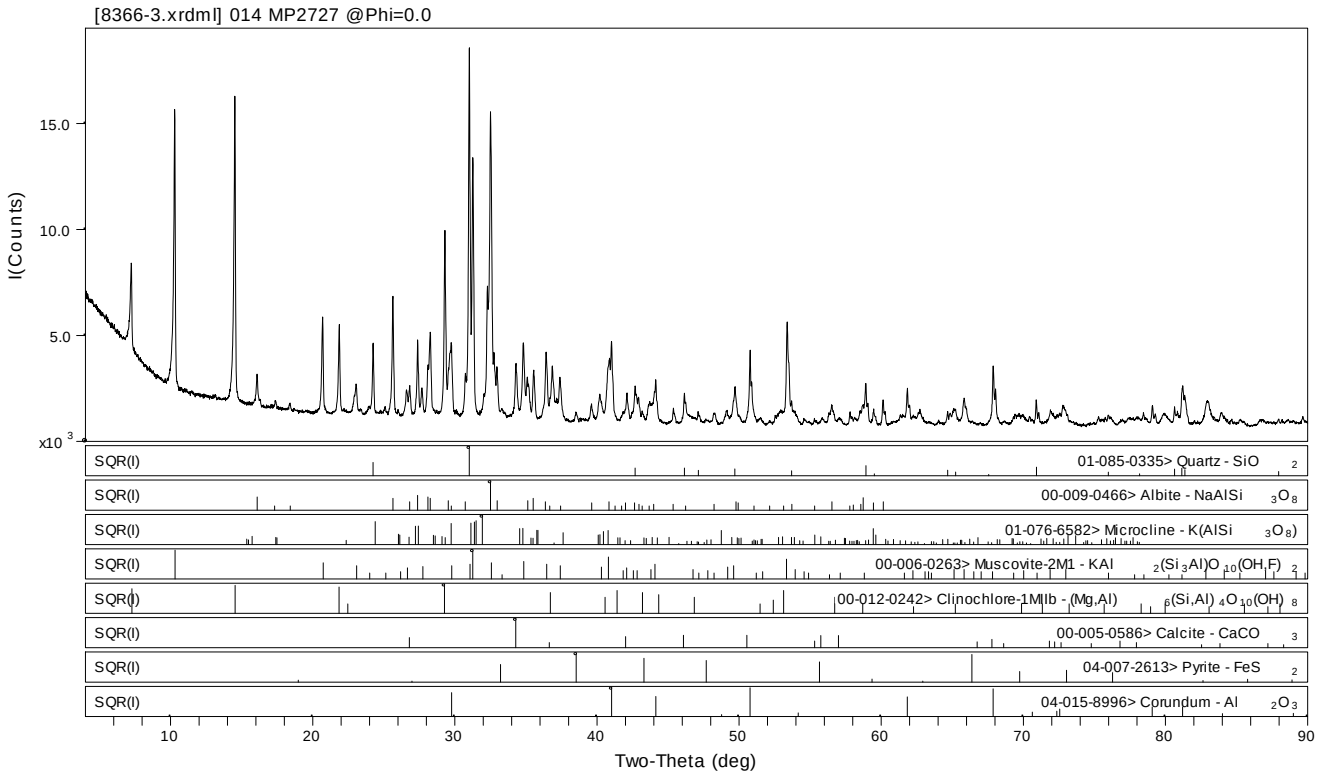
corundum is added internal standard





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POWDER X-RAY DIFFRACTION ANALYSIS OF SUBMITTED SAMPLES

QUT Reference: XAF8447
Your Reference: EB1329673 : MP26986, MP27008, MP27021, MP27042
Date: 16 December 2013

INTRODUCTION

The four (4) samples were sent by ALS-Environmental (Greg Vogel, Brisbane) for powder x-ray diffraction analysis to determine the identity and abundance of compounds present. The samples were received on 3 December 2013.

PROCEDURE

The samples were powders. A portion of each sample was weighed and 10% by weight internal standard (corundum) added. The specimens were prepared using a McCrone micronising mill using zirconia beads and ethanol as a fluid. The ethanol was evaporated at 40 C in a drying oven. X-ray diffraction is a technique that can be used to examine crystalline compounds. Non-crystalline phases such as glass scatter x-rays but do not give rise to diffraction information. Amorphous (non-diffracting) solids may cause scattering bands that tend to be intense if the amorphous solid is a significant proportion of the sample.

Step-scanned diffraction patterns were collected using a Panalytical vertical diffractometer, cobalt Kα radiation and the usual conditions. The powder x-ray diffraction data was analysed using Jade (V9.0, Materials Data Inc.) for phase identification and SiroQuant (V3, Sietronics Pty Ltd) for quantitative analysis using a Rietveld technique. The added internal standard at known concentration allows the concentration of the other modelled phases to be calculated on an absolute scale. When the data is modelled, the estimated concentration of the internal standard should be the expected value, or if there is an unidentified phase then it will be somewhat higher than the expected value. The known concentration of the internal standard allows the concentration of the other phases to be determined on an absolute scale. The sum of the absolute concentrations is usually subtracted from 100 wt% to obtain a residual. The residual represents the unexplained portion of the pattern; it may be the non-diffracting content but will also represent unidentified phases or poorly modelled phases. It is not an accurate measure as its error is the sum of errors of the modelled phases.

Small portions of the original samples were dispersed in water. The fine fraction (<5μm, in suspension) of each was transferred to a low background plates and allowed to settle and dry. This preparation is used to extract the fine (clay dominant) fraction as an aid to identifying the clays present in the sample. The ratios of the clays present in the extract may vary from those present in the bulk sample as the sub-sample is size selected and thus the results should be used qualitatively. The clay film specimens were treated after initial x-ray examination with ethylene glycol (which expands some clays) and were re-examined to determine the effect of the treatment. The fine fraction data was collected with a Panalytical vertical diffractometer, cobalt Kα radiation and the usual conditions.

RESULTS

The powder XRD pattern shows the presence of crystalline phases. The patterns were similar but differed in detail. Enclosed are graphics of the diffraction patterns of the specimens with the phases identified indicated on the graphics There are minor (< 10 wt%, >1wt%) unidentified phases present.

The modelling for phase concentrations is done on the basis of the minerals that were identified.

There exists a considerable unidentified content in the four samples. This is likely to be non-diffracting content rather than unidentified crystalline components. While there are unidentified crystalline phases in all samples, these are at a minor or very minor level.

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Powder X-ray diffraction is phase analysis, it is not chemical analysis. Phase concentrations may be mis-estimated if an incorrect chemical formula is assigned to a phase. Other techniques such as optical petrology or SEM/EDS may well be able to positively identify the members of the various mineral groups or chemical substitutions in them.

Below is a table of the estimated phase concentrations.

Table of estimated phases concentrations (absolute, wt%)

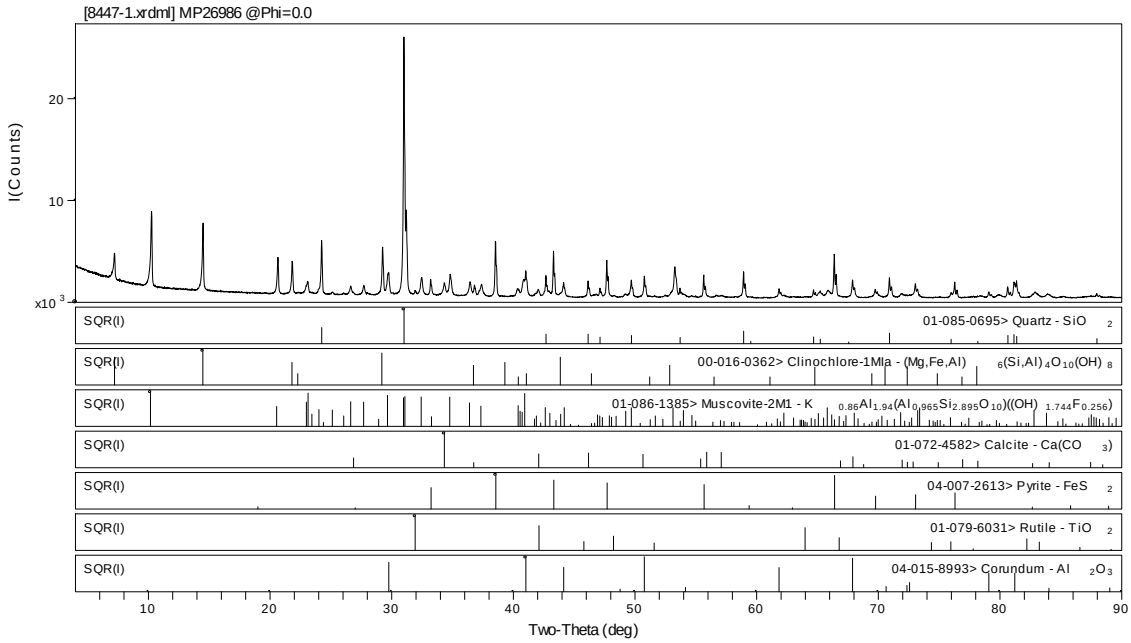
XAF8447	1	2	3	4
ALS EB1329673	MP26986	MP27008	MP27021	MP27042
Non-diffracting/unidentified	13.2	7.7	12.1	13.3
Quartz	23.8	18.5	3.4	15.4
Plagioclase (Albite)			13.3	34.4
Kaolinite		21.4	5.6	
Chlorite	11			5.1
Muscovite	32.8	43.4	62.7	22.9
Calcite	3.5			
Dolomite				6.4
Pyrite	15			2.5
Rutile	0.8			
Goethite		9.1		
Jarosite (Na)			2.8	

Tony Raftery

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Senior Technologist

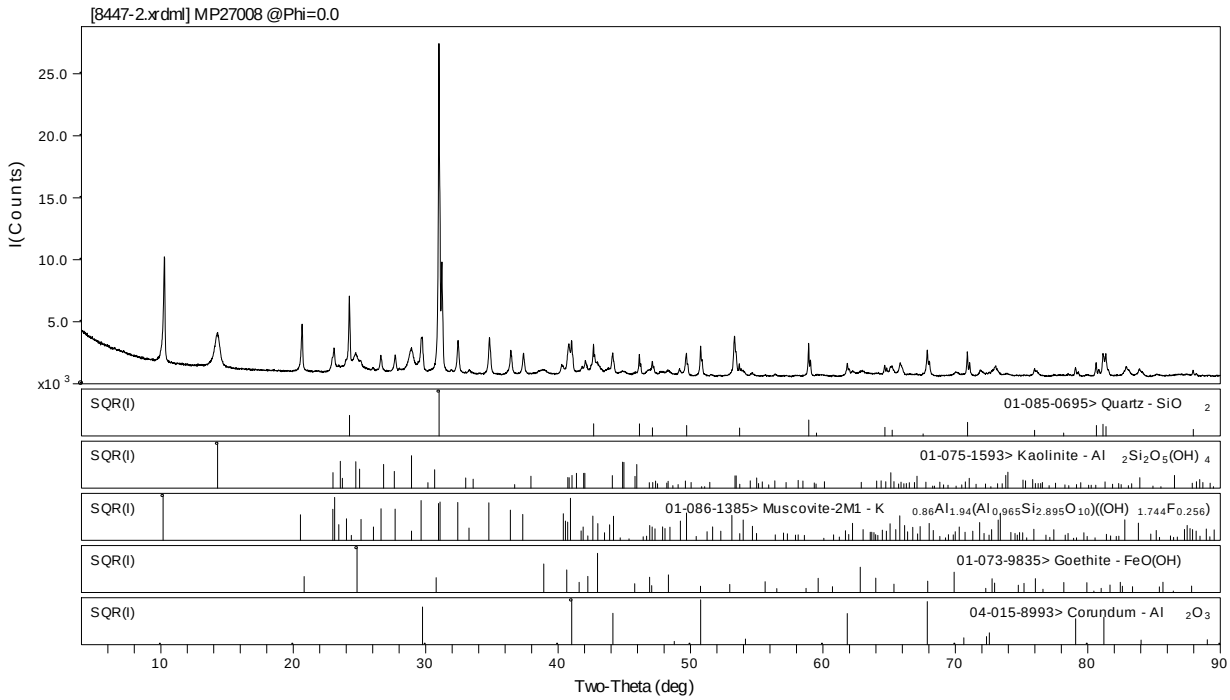
Powder XRD Patterns

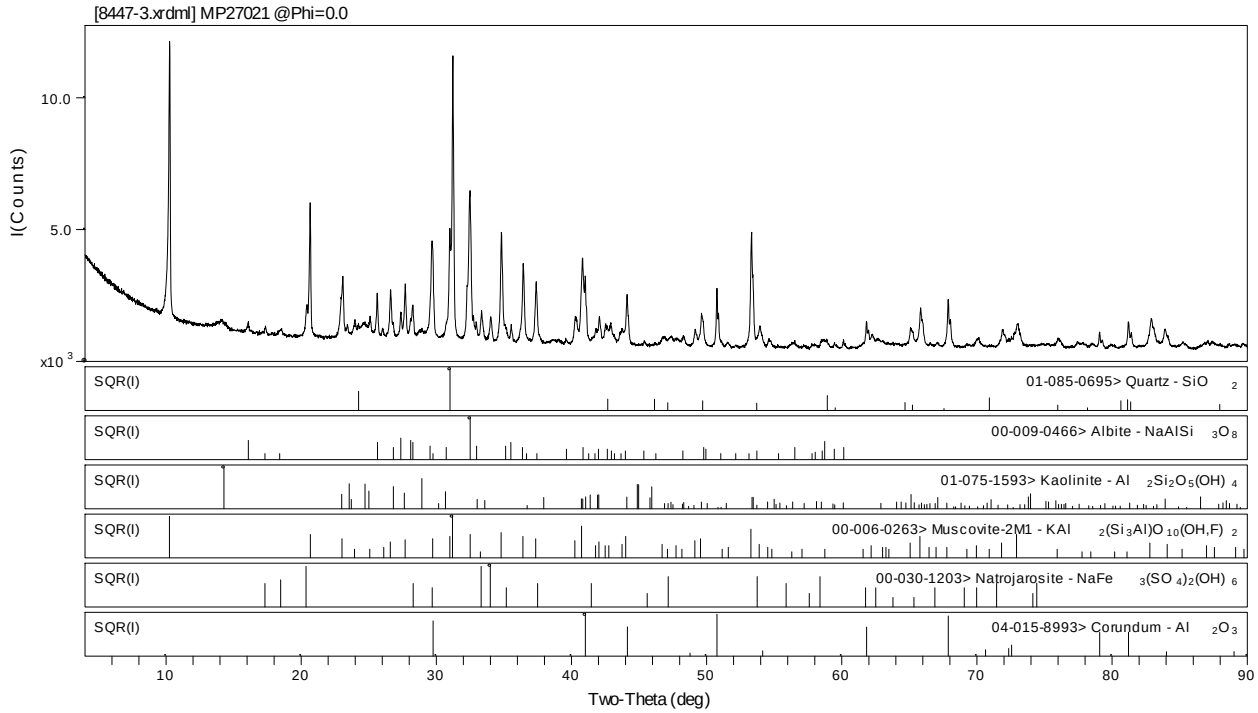
corundum is added internal standard



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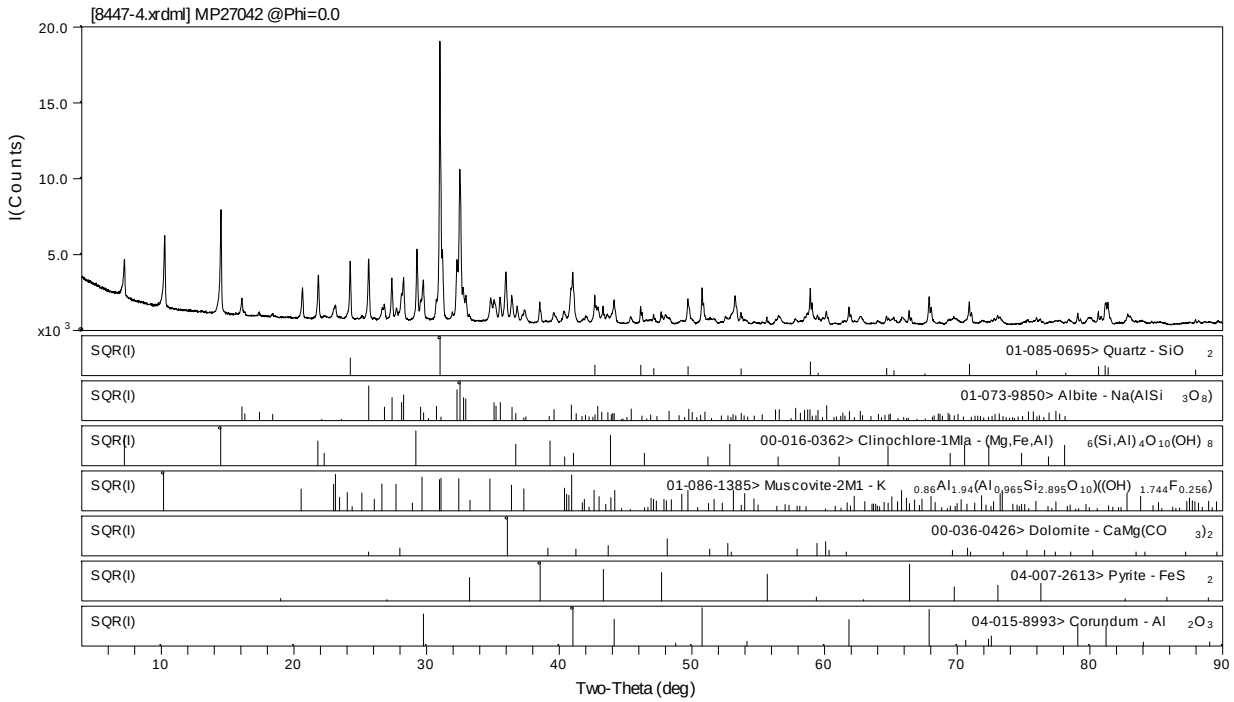
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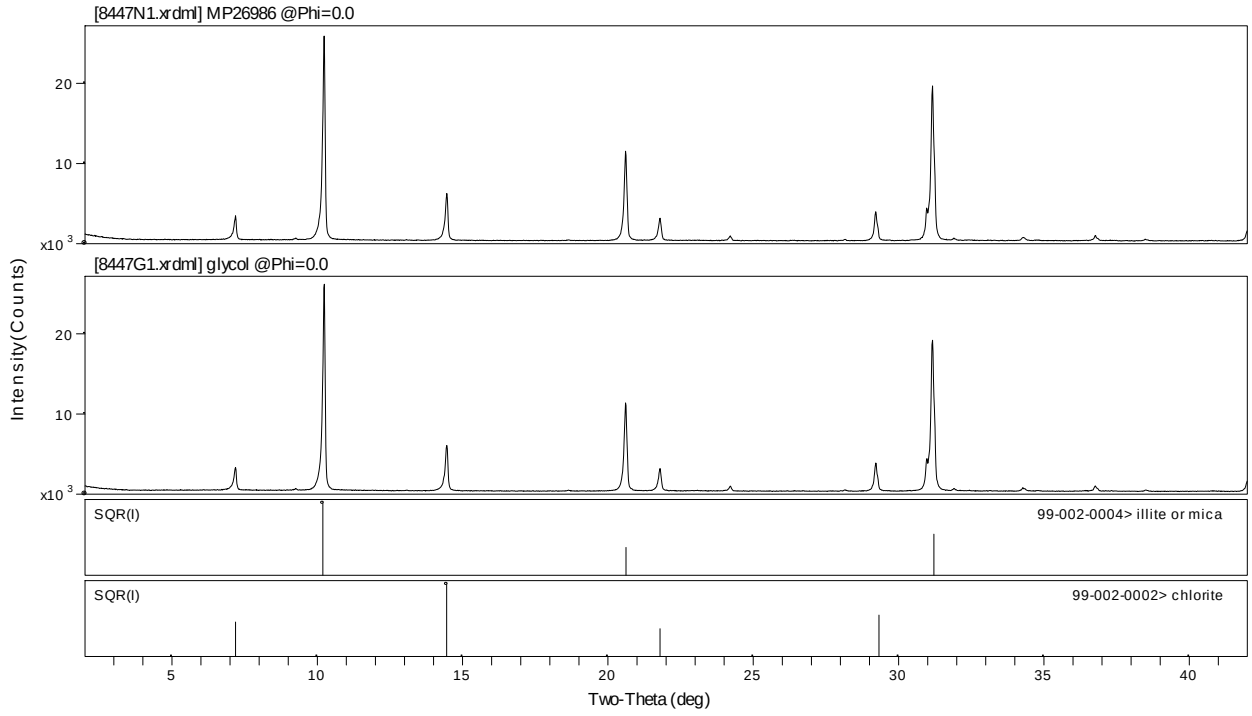


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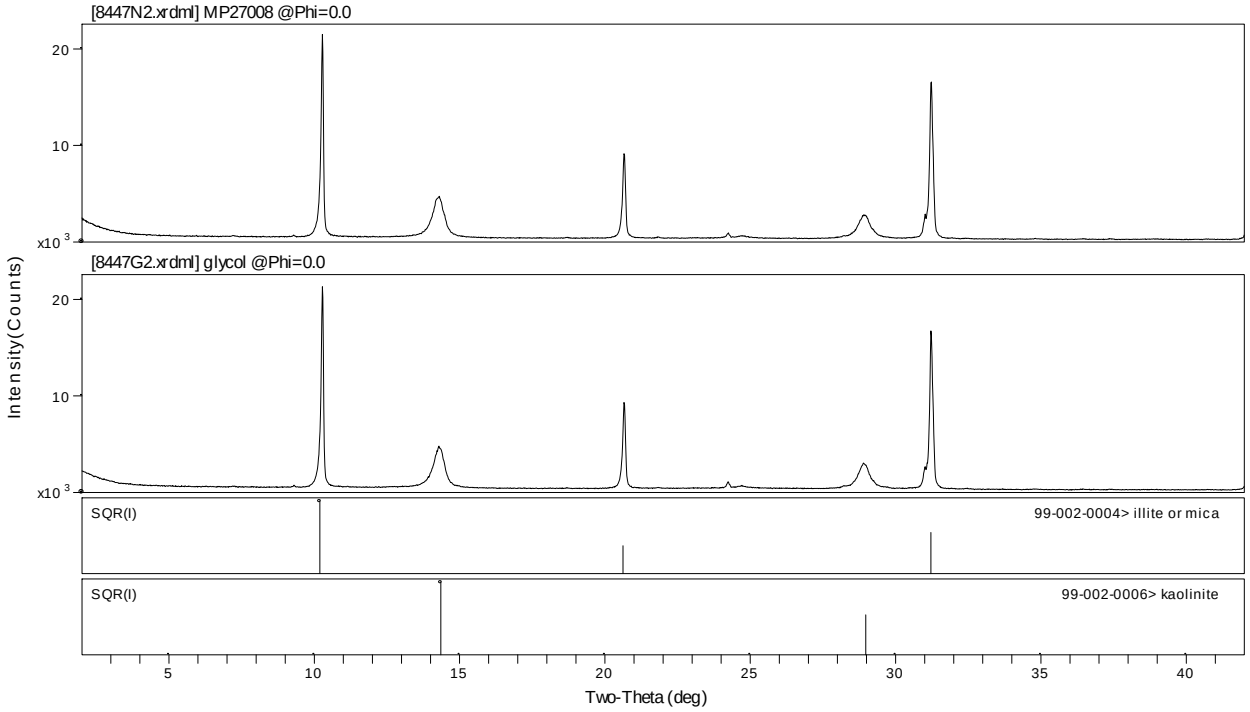


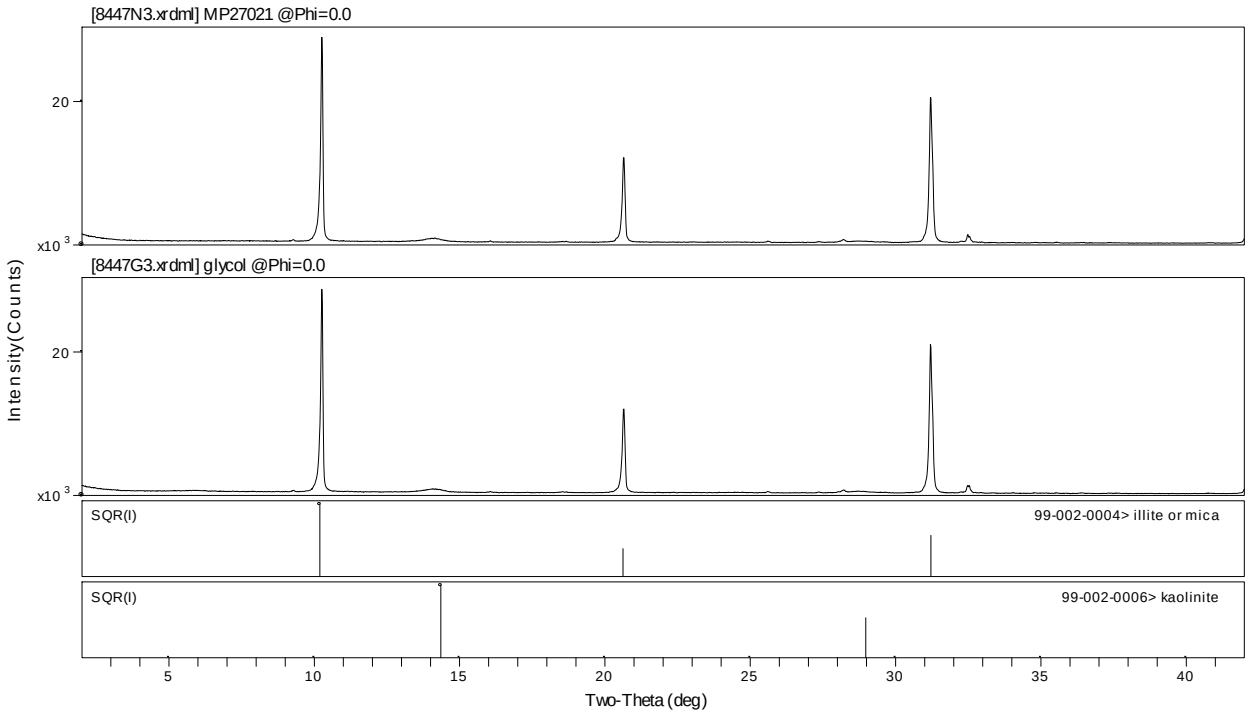
Fine fraction (clay) XRD Patterns



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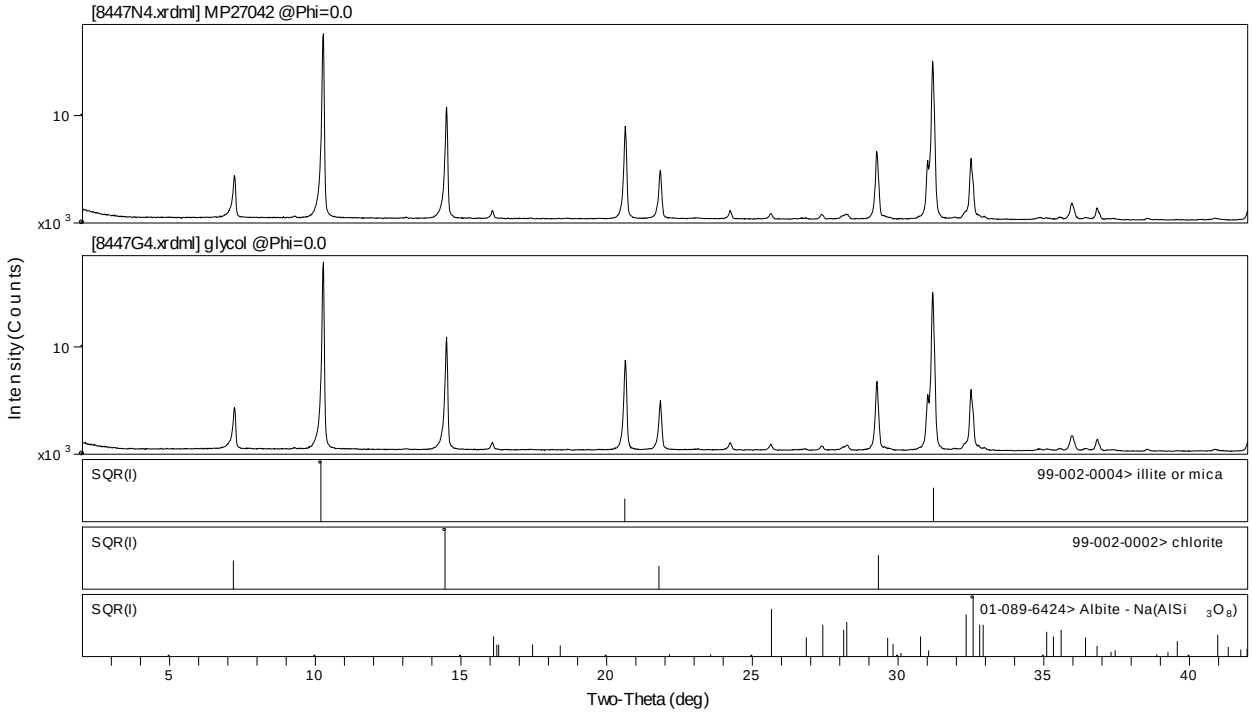
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Appendix G: Kinetic leach test results

CERTIFICATE OF ANALYSIS

Work Order	: **EB1328894**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Full Suite - Leach 1	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-NOV-2013
Sampler	: ----	Issue Date	: 29-NOV-2013
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics
Stephen Hislop	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 1 (MP27008)	Col 2 (MP27042)	Col 3 (MP26986)	Col 4 (MP27021)	----
			Client sampling date / time	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	EB1328894-001	EB1328894-002	EB1328894-003	EB1328894-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.88	7.55	7.61	7.13	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	3310	138	174	973	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	23	24	15	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	23	24	15	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	214	10	2	19	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	418	30	42	274	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	107	3	3	61	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	54	8	12	16	----
Magnesium	7439-95-4	1	mg/L	25	2	2	20	----
Sodium	7440-23-5	1	mg/L	157	13	14	100	----
Potassium	7440-09-7	1	mg/L	139	3	5	46	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	6.01	0.03	0.01	0.08	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Arsenic	7440-38-2	0.001	mg/L	0.004	<0.001	0.001	0.002	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Boron	7440-42-8	0.05	mg/L	2.94	0.19	0.23	2.72	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Strontium	7440-24-6	0.001	mg/L	0.209	0.052	0.132	0.087	----
Barium	7440-39-3	0.001	mg/L	0.097	0.222	0.222	0.102	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	Col 1 (MP27008)	Col 2 (MP27042)	Col 3 (MP26986)	Col 4 (MP27021)	----
				Client sampling date / time	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	----
					EB1328894-001	EB1328894-002	EB1328894-003	EB1328894-004	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0022**	<0.0001	<0.0001	**0.0012**	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	----
Cobalt	7440-48-4	0.001	mg/L		**0.111**	<0.001	<0.001	**0.055**	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Caesium	7440-46-2	0.001	mg/L		**0.003**	<0.001	<0.001	<0.001	----
Chromium	7440-47-3	0.001	mg/L		**0.003**	<0.001	<0.001	<0.001	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L		**0.171**	**0.002**	**0.004**	**0.020**	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Rubidium	7440-17-7	0.001	mg/L		**0.108**	**0.001**	**0.001**	**0.011**	----
Lithium	7439-93-2	0.001	mg/L		**0.010**	**0.001**	**0.001**	**0.016**	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cerium	7440-45-1	0.001	mg/L		**0.003**	<0.001	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L		**2.76**	**0.003**	**0.023**	**2.39**	----
Neodymium	7440-00-8	0.001	mg/L		**0.002**	<0.001	<0.001	<0.001	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L		**0.130**	<0.001	**0.003**	**0.021**	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L		**0.001**	<0.001	<0.001	<0.001	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Antimony	7440-36-0	0.001	mg/L		<0.001	**0.001**	**0.004**	<0.001	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Yttrium	7440-65-5	0.001	mg/L		**0.005**	<0.001	<0.001	**0.001**	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 1 (MP27008)	Col 2 (MP27042)	Col 3 (MP26986)	Col 4 (MP27021)	----
			Client sampling date / time	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	EB1328894-001	EB1328894-002	EB1328894-003	EB1328894-004	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**4.92**	**0.018**	**0.020**	**3.01**	----
Iron	7439-89-6	0.05	mg/L	**5.50**	<0.05	<0.05	<0.05	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**51.2**	**1.40**	**1.32**	**94.2**	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.4**	**0.4**	**0.4**	**0.2**	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.56**	**0.03**	**0.01**	**0.02**	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1325024**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Geochemical Classification - Leach 1	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 15-OCT-2013
Sampler	: ----	Issue Date	: 24-OCT-2013
Site	: ----		
		No. of samples received	: 3
Quote number	: ----	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Stephen Hislop	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **ED037P: The failing duplicate for Hydroxide alkalinity on sample EB1325244-001 is deemed acceptable when considering the proportionate amount of carbonate alkalinity present.**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	[15-OCT-2013]	[15-OCT-2013]	[15-OCT-2013]	----	----
Compound	CAS Number	LOR	Unit	EB1325024-001	EB1325024-002	EB1325024-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.12	7.74	7.92	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	3130	2780	2960	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	29	58	120	----	----
Total Alkalinity as CaCO3	----	1	mg/L	29	58	120	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	14	10	19	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2050	90	248	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	71	36	25	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	375	681	648	----	----
Magnesium	7439-95-4	1	mg/L	214	32	53	----	----
Sodium	7440-23-5	1	mg/L	13	28	53	----	----
Potassium	7440-09-7	1	mg/L	124	99	121	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.04	<0.01	0.01	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.001	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Boron	7440-42-8	0.05	mg/L	1.34	1.03	1.12	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Strontium	7440-24-6	0.001	mg/L	2.84	2.95	1.65	----	----
Barium	7440-39-3	0.001	mg/L	0.160	0.140	0.134	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
				Client sampling date / time	[15-OCT-2013]	[15-OCT-2013]	[15-OCT-2013]	----	----
Compound	CAS Number	LOR	Unit		EB1325024-001	EB1325024-002	EB1325024-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		**0.002**	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0013**	**0.0001**	**0.0058**	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	<0.005	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.065**	**0.005**	**0.250**	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	**0.001**	**0.004**	----	----
Caesium	7440-46-2	0.001	mg/L		**0.002**	<0.001	**0.002**	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	**0.008**	**0.001**	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		**0.006**	**0.028**	**0.009**	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.065**	**0.025**	**0.059**	----	----
Lithium	7439-93-2	0.001	mg/L		**0.024**	**0.005**	**0.015**	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L		**125**	**1.47**	**20.7**	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	**0.005**	**0.002**	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		**0.053**	**0.006**	**0.173**	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	**0.002**	**0.007**	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L		**0.01**	**0.04**	<0.01	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Yttrium	7440-65-5	0.001	mg/L		**0.002**	<0.001	<0.001	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	<0.005	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
				Client sampling date / time	[15-OCT-2013]	[15-OCT-2013]	[15-OCT-2013]	----	----
Compound	CAS Number	LOR	Unit		EB1325024-001	EB1325024-002	EB1325024-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Zinc	7440-66-6	0.005	mg/L		**1.94**	**0.855**	**1.89**	----	----
Iron	7439-89-6	0.05	mg/L		**1.22**	**0.16**	<0.05	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
EG052G: Silica by Discrete Analyser									
Reactive Silica	----	0.10	mg/L		**6.55**	**5.37**	**9.02**	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.3**	**0.4**	**0.5**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.01	**0.01**	<0.01	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1325595**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 2	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 22-OCT-2013
Sampler	: ----	Issue Date	: 28-OCT-2013
Site	: ----		
		No. of samples received	: 3
Quote number	: ----	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	[22-OCT-2013]	[22-OCT-2013]	[22-OCT-2013]	----	----
Compound	CAS Number	LOR	Unit	EB1325595-001	EB1325595-002	EB1325595-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.64	7.49	7.39	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1520	531	683	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	5	24	23	----	----
Total Alkalinity as CaCO3	----	1	mg/L	5	24	23	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	5	5	5	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	802	233	342	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1328976**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 2	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-NOV-2013
Sampler	: ----	Issue Date	: 03-DEC-2013
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- Analytical Results

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Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Stephen Hislop	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	27-NOV-2013 15:00	27-NOV-2013 15:00	27-NOV-2013 15:00	27-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	EB1328976-001	EB1328976-002	EB1328976-003	EB1328976-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	4.49	7.18	7.12	5.14	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	632	101	99	514	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	10	8	<1	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	10	8	<1	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	41	5	2	19	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	139	33	48	236	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1326237**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 3	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 29-OCT-2013
Sampler	: ----	Issue Date	: 06-NOV-2013
Site	: ----		
		No. of samples received	: 3
Quote number	: ----	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- General Comments
- Analytical Results

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Signatories

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Signatories	*Position*	*Accreditation Category*
Andrew Epps	Metals Production Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	[29-OCT-2013]	[29-OCT-2013]	[29-OCT-2013]	----	----
Compound	CAS Number	LOR	Unit	EB1326237-001	EB1326237-002	EB1326237-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.17	7.66	7.69	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	2310	1080	1850	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	8	25	32	----	----
Total Alkalinity as CaCO3	----	1	mg/L	8	25	32	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	10	5	7	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1700	643	1180	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1329691**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 3	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 03-DEC-2013
Sampler	: ----	Issue Date	: 10-DEC-2013
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	04-DEC-2013 15:00	04-DEC-2013 15:00	04-DEC-2013 15:00	04-DEC-2013 15:00	----
Compound	CAS Number	LOR	Unit	EB1329691-001	EB1329691-002	EB1329691-003	EB1329691-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.93	6.99	7.12	5.54	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	408	63	63	145	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	6	8	1	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	6	8	1	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	44	2	2	10	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	77	20	20	54	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1326890**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 4	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 04-NOV-2013
Sampler	: ----	Issue Date	: 12-NOV-2013
Site	: ----		
		No. of samples received	: 3
Quote number	: ----	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	[04-NOV-2013]	[04-NOV-2013]	[04-NOV-2013]	----	----
Compound	CAS Number	LOR	Unit	EB1326890-001	EB1326890-002	EB1326890-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.10	7.55	7.47	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1920	1040	1340	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	10	28	26	----	----
Total Alkalinity as CaCO3	----	1	mg/L	10	28	26	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	5	3	3	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1350	550	746	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1330550**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 4	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 10-DEC-2013
Sampler	: ----	Issue Date	: 17-DEC-2013
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	----
Compound	CAS Number	LOR	Unit	EB1330550-001	EB1330550-002	EB1330550-003	EB1330550-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.97	6.75	6.96	5.51	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	227	67	58	242	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	6	9	<1	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	6	9	<1	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	15	19	2	10	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	143	24	18	102	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1327734**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Full Suite - Leach 5	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 12-NOV-2013
Sampler	: ----	Issue Date	: 20-NOV-2013
Site	: ----		
		No. of samples received	: 3
Quote number	: ----	No. of samples analysed	: 3

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Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics
Stephen Hislop	Senior Inorganic Chemist	Brisbane Inorganics

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^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
				Client sampling date / time	[12-NOV-2013]	[12-NOV-2013]	[12-NOV-2013]	----	----
Compound	CAS Number	LOR	Unit		EB1327734-001	EB1327734-002	EB1327734-003	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.45	7.87	8.12	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		1860	1170	1460	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		12	26	37	----	----
Total Alkalinity as CaCO3	----	1	mg/L		12	26	37	----	----
ED038A: Acidity									
Acidity as CaCO3	----	1	mg/L		19	2	7	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		1050	551	700	----	----
ED045G: Chloride Discrete analyser									
Chloride	16887-00-6	1	mg/L		1	<1	<1	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		268	208	289	----	----
Magnesium	7439-95-4	1	mg/L		84	13	9	----	----
Sodium	7440-23-5	1	mg/L		2	6	8	----	----
Potassium	7440-09-7	1	mg/L		20	21	27	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Dysprosium	7429-91-6	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	0.001	0.004	----	----
Bismuth	7440-69-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Erbium	7440-52-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Boron	7440-42-8	0.05	mg/L		0.49	0.83	0.45	----	----
Europium	7440-53-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Strontium	7440-24-6	0.001	mg/L		1.84	0.934	0.850	----	----
Barium	7440-39-3	0.001	mg/L		0.070	0.088	0.067	----	----
Gadolinium	7440-54-2	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	[12-NOV-2013]	[12-NOV-2013]	[12-NOV-2013]	----	----
Compound	CAS Number	LOR	Unit	EB1327734-001	EB1327734-002	EB1327734-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0001**	<0.0001	**0.0017**	----	----
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	<0.005	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.010**	<0.001	**0.026**	----	----
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	**0.001**	**0.005**	**0.018**	----	----
Lanthanum	7439-91-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Rubidium	7440-17-7	0.001	mg/L	**0.012**	**0.007**	**0.014**	----	----
Lithium	7439-93-2	0.001	mg/L	**0.008**	**0.002**	**0.004**	----	----
Lutetium	7439-94-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Thorium	7440-29-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cerium	7440-45-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	**40.5**	**2.71**	**3.71**	----	----
Neodymium	7440-00-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L	**0.001**	**0.002**	**0.007**	----	----
Praseodymium	7440-10-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	**0.004**	<0.001	**0.006**	----	----
Samarium	7440-19-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Terbium	7440-27-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Antimony	7440-36-0	0.001	mg/L	<0.001	**0.002**	**0.011**	----	----
Thulium	7440-30-4	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	**0.01**	<0.01	----	----
Ytterbium	7440-64-4	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Yttrium	7440-65-5	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	<0.005	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	[12-NOV-2013]	[12-NOV-2013]	[12-NOV-2013]	----	----
Compound	CAS Number	LOR	Unit	EB1327734-001	EB1327734-002	EB1327734-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.130**	**0.049**	**0.216**	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**6.23**	**7.84**	**11.1**	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.2**	**0.2**	**0.7**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.02**	**0.02**	**0.01**	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1331285**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Full Suite - Leach 5	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 17-DEC-2013
Sampler	: ----	Issue Date	: 06-JAN-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

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- Analytical Results

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Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Stephen Hislop	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	18-DEC-2013 15:00	18-DEC-2013 15:00	18-DEC-2013 15:00	18-DEC-2013 15:00	----
Compound	CAS Number	LOR	Unit	EB1331285-001	EB1331285-002	EB1331285-003	EB1331285-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**3.94**	**6.75**	**7.14**	**4.99**	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**232**	**52**	**48**	**245**	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**44**	**2**	**2**	**15**	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**42**	----	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	**4**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**3**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**1**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**7**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**8**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.66**	----	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	----	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	----	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	----	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.72**	----	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	----	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.009**	----	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.107**	----	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	----	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
				Client sampling date / time	18-DEC-2013 15:00	18-DEC-2013 15:00	18-DEC-2013 15:00	18-DEC-2013 15:00	----
					EB1331285-001	EB1331285-002	EB1331285-003	EB1331285-004	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0002**	----	----	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	----	----	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.015**	----	----	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	----	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	----	----	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.044**	----	----	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	----	----	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.010**	----	----	----	----
Lithium	7439-93-2	0.001	mg/L		**0.003**	----	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	----	----	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	----	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.257**	----	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.016**	----	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	----	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	----	----	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	----	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	----	----	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	18-DEC-2013 15:00	18-DEC-2013 15:00	18-DEC-2013 15:00	18-DEC-2013 15:00	----
Compound	CAS Number	LOR	Unit	EB1331285-001	EB1331285-002	EB1331285-003	EB1331285-004	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.798**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**0.82**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**9.61**	**1.28**	**2.65**	**74.0**	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	<0.1	**0.1**	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.04**	<0.01	<0.01	**0.03**	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1328362**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 6	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 19-NOV-2013
Sampler	: ----	Issue Date	: 27-NOV-2013
Site	: ----		
		No. of samples received	: 3
Quote number	: ----	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1328362-001	EB1328362-002	EB1328362-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.29	7.56	7.41	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1380	998	1180	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	24	22	----	----
Total Alkalinity as CaCO3	----	1	mg/L	4	24	22	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	58	5	10	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	718	416	538	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1331290**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 6	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 24-DEC-2013
Sampler	: ----	Issue Date	: 06-JAN-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

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- Analytical Results

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	24-DEC-2013 15:00	24-DEC-2013 15:00	24-DEC-2013 15:00	24-DEC-2013 15:00	----
Compound	CAS Number	LOR	Unit	EB1331290-001	EB1331290-002	EB1331290-003	EB1331290-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.81	6.97	7.13	5.10	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	217	66	50	148	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	12	10	2	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	12	10	2	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	24	7	5	5	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	44	22	14	56	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1328975**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
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E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 7	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-NOV-2013
Sampler	: ----	Issue Date	: 04-DEC-2013
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	27-NOV-2013 15:00	27-NOV-2013 15:00	27-NOV-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1328975-001	EB1328975-002	EB1328975-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.73	7.47	7.49	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1450	1020	1080	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	6	24	25	----	----
Total Alkalinity as CaCO3	----	1	mg/L	6	24	25	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	10	5	5	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	981	604	679	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1331292**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
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Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 7	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 03-JAN-2014
Sampler	: ----	Issue Date	: 10-JAN-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

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- Analytical Results

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WORLD RECOGNISED ACCREDITATION

Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	02-JAN-2014 15:00	02-JAN-2014 15:00	02-JAN-2014 15:00	02-JAN-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1331292-001	EB1331292-002	EB1331292-003	EB1331292-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.88	7.18	7.36	5.05	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	191	68	57	173	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	5	8	<1	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	5	8	<1	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	23	3	3	10	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	43	24	16	84	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1329690**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 8	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 03-DEC-2013
Sampler	: ----	Issue Date	: 10-DEC-2013
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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WORLD RECOGNISED ACCREDITATION

Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	04-DEC-2013 15:00	04-DEC-2013 15:00	04-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1329690-001	EB1329690-002	EB1329690-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.85	7.56	7.54	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1390	1110	1010	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	6	25	26	----	----
Total Alkalinity as CaCO3	----	1	mg/L	6	25	26	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	10	5	5	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	775	566	456	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1400233**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 8	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 07-JAN-2014
Sampler	: ----	Issue Date	: 14-JAN-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Metals Production Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	08-JAN-2014 15:00	08-JAN-2014 15:00	08-JAN-2014 15:00	08-JAN-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1400233-001	EB1400233-002	EB1400233-003	EB1400233-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.90	7.05	7.19	5.21	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	172	80	80	176	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	16	11	3	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	16	11	3	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	41	5	5	15	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	35	26	24	82	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1330548**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Full Suite - Leach 9	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 10-DEC-2013
Sampler	: ----	Issue Date	: 19-DEC-2013
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Jonathon Angell	Inorganic Coordinator	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics
Stephen Hislop	Senior Inorganic Chemist	Brisbane Inorganics

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1330548-001	EB1330548-002	EB1330548-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.89**	**7.43**	**7.44**	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1310**	**994**	**907**	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**6**	**25**	**29**	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**6**	**25**	**29**	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**2**	**2**	**2**	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**759**	**526**	**663**	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	**2**	<1	<1	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**202**	**234**	**202**	----	----
Magnesium	7439-95-4	1	mg/L	**76**	**7**	**5**	----	----
Sodium	7440-23-5	1	mg/L	**2**	**4**	**4**	----	----
Potassium	7440-09-7	1	mg/L	**12**	**12**	**14**	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	**0.001**	----	----
Arsenic	7440-38-2	0.001	mg/L	**0.001**	<0.001	**0.014**	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Boron	7440-42-8	0.05	mg/L	**0.68**	**1.22**	**0.61**	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Strontium	7440-24-6	0.001	mg/L	**1.59**	**0.926**	**0.688**	----	----
Barium	7440-39-3	0.001	mg/L	**0.100**	**0.081**	**0.100**	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1330548-001	EB1330548-002	EB1330548-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0002**	<0.0001	**0.0014**	----	----
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	<0.005	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.010**	<0.001	**0.025**	----	----
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	**0.001**	**0.004**	**0.002**	----	----
Lanthanum	7439-91-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Rubidium	7440-17-7	0.001	mg/L	**0.009**	**0.005**	**0.009**	----	----
Lithium	7439-93-2	0.001	mg/L	**0.007**	**0.003**	**0.003**	----	----
Lutetium	7439-94-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Thorium	7440-29-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cerium	7440-45-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	**38.5**	**0.450**	**2.54**	----	----
Neodymium	7440-00-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L	**0.001**	**0.002**	**0.006**	----	----
Praseodymium	7440-10-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	**0.002**	<0.001	**0.003**	----	----
Samarium	7440-19-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Terbium	7440-27-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Antimony	7440-36-0	0.001	mg/L	<0.001	**0.001**	**0.008**	----	----
Thulium	7440-30-4	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Ytterbium	7440-64-4	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Yttrium	7440-65-5	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	<0.005	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1330548-001	EB1330548-002	EB1330548-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.179**	**0.101**	**0.272**	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**6.72**	**10.6**	**12.3**	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.2**	**0.3**	**0.7**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.01**	**0.01**	**0.01**	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1400718**	Page	: 1 of 5
Amendment	: **1**		
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Full Suite - Leach 9	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 14-JAN-2014
Sampler	: ----	Issue Date	: 21-JAN-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	15-JAN-2014 15:00	15-JAN-2014 15:00	15-JAN-2014 15:00	15-JAN-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1400718-001	EB1400718-002	EB1400718-003	EB1400718-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	4.13	7.12	7.23	4.92	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	176	87	69	158	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	19	12	2	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	19	12	2	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	29	5	5	15	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	39	30	21	60	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	2	<1	<1	<1	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	2	7	7	4	----
Magnesium	7439-95-4	1	mg/L	<1	3	<1	5	----
Sodium	7440-23-5	1	mg/L	5	3	3	6	----
Potassium	7440-09-7	1	mg/L	7	2	2	11	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.73	0.10	0.06	0.07	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Boron	7440-42-8	0.05	mg/L	0.55	0.64	0.67	1.26	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Strontium	7440-24-6	0.001	mg/L	0.008	0.035	0.088	0.028	----
Barium	7440-39-3	0.001	mg/L	0.111	0.178	0.198	0.121	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	15-JAN-2014 15:00	15-JAN-2014 15:00	15-JAN-2014 15:00	15-JAN-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1400718-001	EB1400718-002	EB1400718-003	EB1400718-004	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0002**	<0.0001	<0.0001	**0.0004**	----
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	----
Cobalt	7440-48-4	0.001	mg/L	**0.014**	<0.001	<0.001	**0.023**	----
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L	**0.044**	**0.002**	**0.005**	**0.012**	----
Lanthanum	7439-91-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Rubidium	7440-17-7	0.001	mg/L	**0.007**	**0.001**	<0.001	**0.003**	----
Lithium	7439-93-2	0.001	mg/L	**0.003**	<0.001	<0.001	**0.005**	----
Lutetium	7439-94-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Thorium	7440-29-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Cerium	7440-45-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L	**0.209**	**0.020**	**0.011**	**0.921**	----
Neodymium	7440-00-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Praseodymium	7440-10-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L	**0.016**	<0.001	<0.001	**0.007**	----
Samarium	7440-19-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Terbium	7440-27-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	**0.003**	**0.001**	----
Thulium	7440-30-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Ytterbium	7440-64-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Yttrium	7440-65-5	0.001	mg/L	**0.001**	<0.001	<0.001	<0.001	----
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	15-JAN-2014 15:00	15-JAN-2014 15:00	15-JAN-2014 15:00	15-JAN-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1400718-001	EB1400718-002	EB1400718-003	EB1400718-004	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.622**	**0.115**	**0.091**	**0.846**	----
Iron	7439-89-6	0.05	mg/L	**0.47**	<0.05	<0.05	<0.05	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**8.83**	**1.80**	**2.56**	**72.3**	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	**0.1**	<0.1	**0.1**	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.02**	<0.01	<0.01	**0.03**	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1331282**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 10	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 17-DEC-2013
Sampler	: ----	Issue Date	: 31-DEC-2013
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	18-DEC-2013 15:00	18-DEC-2013 15:00	18-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1331282-001	EB1331282-002	EB1331282-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.09	7.69	7.64	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1420	1100	926	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	8	44	29	----	----
Total Alkalinity as CaCO3	----	1	mg/L	8	44	29	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	5	7	2	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	795	562	454	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1401282**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
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E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 10	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 21-JAN-2014
Sampler	: ----	Issue Date	: 28-JAN-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	22-JAN-2014 15:00	22-JAN-2014 15:00	22-JAN-2014 15:00	22-JAN-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1401282-001	EB1401282-002	EB1401282-003	EB1401282-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.97	6.94	7.09	5.05	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	163	103	64	137	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	9	12	2	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	9	12	2	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	49	5	5	14	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	35	36	18	50	----

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CERTIFICATE OF ANALYSIS

Work Order	: **EB1331283**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 11	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 24-DEC-2013
Sampler	: ----	Issue Date	: 06-JAN-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Stephen Hislop	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	24-DEC-2013 15:00	24-DEC-2013 15:00	24-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1331283-001	EB1331283-002	EB1331283-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.93	7.66	7.67	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1280	891	870	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	10	31	28	----	----
Total Alkalinity as CaCO3	----	1	mg/L	10	31	28	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	5	2	2	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	670	421	389	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1401730**	Page	: 1 of 3
Amendment	: **1**		
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 11	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 28-JAN-2014
Sampler	: ----	Issue Date	: 04-FEB-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- Analytical Results

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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- **This report has been amended to alter the project reference. All analysis results are as per the previous report.**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	[28-JAN-2014]	[28-JAN-2014]	[28-JAN-2014]	29-JAN-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1401730-001	EB1401730-002	EB1401730-003	EB1401730-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.90	6.98	7.13	5.18	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	178	96	68	132	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	8	9	3	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	8	9	3	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	24	<1	2	7	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	38	36	21	49	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1331284**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
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E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 12	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 03-JAN-2014
Sampler	: ----	Issue Date	: 10-JAN-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	02-JAN-2014 15:00	02-JAN-2014 15:00	02-JAN-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1331284-001	EB1331284-002	EB1331284-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.77	7.70	7.66	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1460	974	994	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	10	34	22	----	----
Total Alkalinity as CaCO3	----	1	mg/L	10	34	22	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	3	6	6	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1110	630	634	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1402316**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 12	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 04-FEB-2014
Sampler	: ----	Issue Date	: 07-FEB-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

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- Analytical Results

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WORLD RECOGNISED ACCREDITATION

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	05-FEB-2014 15:00	05-FEB-2014 15:00	05-FEB-2014 15:00	05-FEB-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1402316-001	EB1402316-002	EB1402316-003	EB1402316-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.90	6.93	7.17	5.10	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	175	83	66	109	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	6	7	2	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	6	7	2	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	28	2	2	9	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	39	31	21	42	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1400244**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Full Analysis - Leach 13	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 07-JAN-2014
Sampler	: ----	Issue Date	: 15-JAN-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
				Client sampling date / time	08-JAN-2014 15:00	08-JAN-2014 15:00	08-JAN-2014 15:00	----	----
					EB1400244-001	EB1400244-002	EB1400244-003	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**6.92**	**7.55**	**7.61**	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**1360**	**1080**	**823**	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**4**	**18**	**19**	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**4**	**18**	**19**	----	----
ED038A: Acidity									
Acidity as CaCO3	----	1	mg/L		<1	**5**	**5**	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**1020**	**730**	**493**	----	----
ED045G: Chloride Discrete analyser									
Chloride	16887-00-6	1	mg/L		**2**	<1	<1	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**193**	**244**	**174**	----	----
Magnesium	7439-95-4	1	mg/L		**72**	**5**	**3**	----	----
Sodium	7440-23-5	1	mg/L		**3**	**5**	**4**	----	----
Potassium	7440-09-7	1	mg/L		**13**	**10**	**11**	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Dysprosium	7429-91-6	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	**0.002**	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	**0.035**	----	----
Bismuth	7440-69-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Erbium	7440-52-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Boron	7440-42-8	0.05	mg/L		**1.01**	**1.59**	**0.92**	----	----
Europium	7440-53-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Strontium	7440-24-6	0.001	mg/L		**1.50**	**0.933**	**0.569**	----	----
Barium	7440-39-3	0.001	mg/L		**0.105**	**0.085**	**0.117**	----	----
Gadolinium	7440-54-2	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
				Client sampling date / time	08-JAN-2014 15:00	08-JAN-2014 15:00	08-JAN-2014 15:00	----	----
Compound	CAS Number	LOR	Unit		EB1400244-001	EB1400244-002	EB1400244-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0002**	<0.0001	**0.0007**	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	<0.005	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.012**	<0.001	**0.016**	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		**0.002**	**0.004**	**0.003**	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.010**	**0.004**	**0.007**	----	----
Lithium	7439-93-2	0.001	mg/L		**0.007**	**0.002**	**0.002**	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L		**40.0**	**0.576**	**1.10**	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L		**0.001**	**0.002**	**0.005**	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		**0.002**	<0.001	**0.002**	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	**0.001**	**0.006**	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	<0.005	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	08-JAN-2014 15:00	08-JAN-2014 15:00	08-JAN-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1400244-001	EB1400244-002	EB1400244-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.278**	**0.134**	**0.174**	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**8.75**	**11.6**	**13.4**	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.2**	**0.2**	**0.6**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	**0.02**	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1403046**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Full Suite - Leach 13	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 11-FEB-2014
Sampler	: ----	Issue Date	: 17-FEB-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

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Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	[11-FEB-2014]	[11-FEB-2014]	[11-FEB-2014]	[11-FEB-2014]	----
Compound	CAS Number	LOR	Unit	EB1403046-001	EB1403046-002	EB1403046-003	EB1403046-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.95	6.71	6.95	4.88	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	164	70	49	96	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	5	7	2	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	5	7	2	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	28	2	3	6	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	36	25	14	36	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	2	<1	<1	<1	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	2	6	6	3	----
Magnesium	7439-95-4	1	mg/L	<1	3	<1	4	----
Sodium	7440-23-5	1	mg/L	4	2	2	2	----
Potassium	7440-09-7	1	mg/L	4	<1	<1	5	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.92	0.09	0.05	0.06	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Boron	7440-42-8	0.05	mg/L	0.49	0.54	0.61	0.64	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Strontium	7440-24-6	0.001	mg/L	0.008	0.024	0.064	0.022	----
Barium	7440-39-3	0.001	mg/L	0.079	0.160	0.184	0.122	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	[11-FEB-2014]	[11-FEB-2014]	[11-FEB-2014]	[11-FEB-2014]	----
Compound	CAS Number	LOR	Unit	EB1403046-001	EB1403046-002	EB1403046-003	EB1403046-004	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0002**	<0.0001	<0.0001	**0.0003**	----
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	----
Cobalt	7440-48-4	0.001	mg/L	**0.015**	<0.001	<0.001	**0.018**	----
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L	**0.043**	**0.001**	**0.004**	**0.017**	----
Lanthanum	7439-91-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Rubidium	7440-17-7	0.001	mg/L	**0.007**	<0.001	<0.001	**0.002**	----
Lithium	7439-93-2	0.001	mg/L	**0.003**	<0.001	<0.001	**0.002**	----
Lutetium	7439-94-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Thorium	7440-29-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Cerium	7440-45-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L	**0.210**	**0.012**	**0.012**	**0.576**	----
Neodymium	7440-00-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Praseodymium	7440-10-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L	**0.016**	<0.001	<0.001	**0.005**	----
Samarium	7440-19-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L	**0.008**	<0.001	<0.001	<0.001	----
Terbium	7440-27-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	**0.002**	<0.001	----
Thulium	7440-30-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Ytterbium	7440-64-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Yttrium	7440-65-5	0.001	mg/L	**0.001**	<0.001	<0.001	<0.001	----
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
				Client sampling date / time	[11-FEB-2014]	[11-FEB-2014]	[11-FEB-2014]	[11-FEB-2014]	----
Compound	CAS Number	LOR	Unit		EB1403046-001	EB1403046-002	EB1403046-003	EB1403046-004	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Zinc	7440-66-6	0.005	mg/L		**0.566**	**0.062**	**0.056**	**0.511**	----
Iron	7439-89-6	0.05	mg/L		**0.34**	<0.05	<0.05	<0.05	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	----
EG052G: Silica by Discrete Analyser									
Reactive Silica	----	0.10	mg/L		**4.61**	**1.60**	**2.24**	**43.6**	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	<0.1	<0.1	<0.1	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.01**	<0.01	<0.01	**0.04**	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1400715**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 14	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 14-JAN-2014
Sampler	: ----	Issue Date	: 21-JAN-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	[14-JAN-2014]	[14-JAN-2014]	[14-JAN-2014]	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1400715-001**	**EB1400715-002**	**EB1400715-003**	**----**	**----**
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.00**	**7.69**	**7.73**	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1420**	**1220**	**787**	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**7**	**39**	**29**	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**7**	**39**	**29**	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**2**	**5**	**5**	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**810**	**675**	**389**	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1403620**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Full Suite - Leach 14	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 18-FEB-2014
Sampler	: ----	Issue Date	: 25-FEB-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- General Comments
- Analytical Results

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	19-FEB-2014 15:00	19-FEB-2014 15:00	19-FEB-2014 15:00	19-FEB-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1403620-001	EB1403620-002	EB1403620-003	EB1403620-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**3.95**	**6.93**	**7.07**	**4.69**	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**169**	**98**	**61**	**93**	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	**4**	**4**	<1	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	**4**	**4**	<1	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**42**	**5**	----	**19**	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**34**	**32**	**16**	**30**	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	**2**	<1	<1	<1	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**2**	**8**	**7**	**3**	----
Magnesium	7439-95-4	1	mg/L	<1	**4**	<1	**3**	----
Sodium	7440-23-5	1	mg/L	**4**	**2**	**2**	**2**	----
Potassium	7440-09-7	1	mg/L	**5**	**1**	**1**	**5**	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.74**	<0.01	**0.04**	**0.05**	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Boron	7440-42-8	0.05	mg/L	**0.48**	**0.60**	**0.63**	**0.63**	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Strontium	7440-24-6	0.001	mg/L	**0.007**	**0.027**	**0.063**	**0.019**	----
Barium	7440-39-3	0.001	mg/L	**0.044**	**0.108**	**0.140**	**0.101**	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
				Client sampling date / time	19-FEB-2014 15:00	19-FEB-2014 15:00	19-FEB-2014 15:00	19-FEB-2014 15:00	----
					EB1403620-001	EB1403620-002	EB1403620-003	EB1403620-004	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0003**	<0.0001	<0.0001	**0.0003**	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	----
Cobalt	7440-48-4	0.001	mg/L		**0.014**	<0.001	<0.001	**0.014**	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Caesium	7440-46-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L		**0.042**	**0.002**	**0.004**	**0.010**	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Rubidium	7440-17-7	0.001	mg/L		**0.006**	<0.001	<0.001	**0.002**	----
Lithium	7439-93-2	0.001	mg/L		**0.003**	<0.001	<0.001	**0.002**	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L		**0.189**	**0.021**	**0.018**	**0.566**	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L		**0.016**	<0.001	<0.001	**0.004**	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L		**0.004**	<0.001	<0.001	<0.001	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	**0.002**	<0.001	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Yttrium	7440-65-5	0.001	mg/L		**0.001**	<0.001	<0.001	<0.001	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	19-FEB-2014 15:00	19-FEB-2014 15:00	19-FEB-2014 15:00	19-FEB-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1403620-001	EB1403620-002	EB1403620-003	EB1403620-004	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.540**	**0.069**	**0.078**	**0.434**	----
Iron	7439-89-6	0.05	mg/L	**0.34**	**0.11**	<0.05	<0.05	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**4.86**	**1.98**	**2.44**	**48.1**	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.01**	<0.01	<0.01	**0.04**	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1401277**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 15	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 21-JAN-2014
Sampler	: ----	Issue Date	: 28-JAN-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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LOR = Limit of reporting
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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	22-JAN-2014 15:00	22-JAN-2014 15:00	22-JAN-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1401277-001	EB1401277-002	EB1401277-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.80	7.54	7.57	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1480	1120	818	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	8	28	40	----	----
Total Alkalinity as CaCO3	----	1	mg/L	8	28	40	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	10	10	5	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	802	569	376	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1404238**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 15	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-FEB-2014
Sampler	: ----	Issue Date	: 03-MAR-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

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This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	26-FEB-2014 15:00	26-FEB-2014 15:00	26-FEB-2014 15:00	26-FEB-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1404238-001	EB1404238-002	EB1404238-003	EB1404238-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	4.00	6.84	7.05	5.14	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	151	80	58	81	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	6	8	3	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	6	8	3	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	19	5	2	7	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	34	29	18	32	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1401728**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 16	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 28-JAN-2014
Sampler	: ----	Issue Date	: 04-FEB-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	29-JAN-2014 15:00	29-JAN-2014 15:00	29-JAN-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1401728-001	EB1401728-002	EB1401728-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.90	7.54	7.57	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1360	1080	715	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	40	27	29	----	----
Total Alkalinity as CaCO3	----	1	mg/L	40	27	29	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	7	5	2	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	795	637	362	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1404900**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 16	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 04-MAR-2014
Sampler	: ----	Issue Date	: 11-MAR-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- Analytical Results

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Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Metals Production Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	05-MAR-2014 15:00	05-MAR-2014 15:00	05-MAR-2014 15:00	05-MAR-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1404900-001	EB1404900-002	EB1404900-003	EB1404900-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.98	6.21	6.77	4.99	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	156	26	68	76	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	5	10	2	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	5	10	2	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	24	2	2	4	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	35	8	21	26	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1402299**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Full Analysis - Leach 17	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 04-FEB-2014
Sampler	: ----	Issue Date	: 10-FEB-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	04-FEB-2014 15:00	04-FEB-2014 15:00	04-FEB-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1402299-001	EB1402299-002	EB1402299-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.79	7.57	7.66	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1240	1090	740	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	15	23	24	----	----
Total Alkalinity as CaCO3	----	1	mg/L	15	23	24	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	9	5	5	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	663	547	338	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	<1	<1	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	164	232	142	----	----
Magnesium	7439-95-4	1	mg/L	55	5	2	----	----
Sodium	7440-23-5	1	mg/L	2	4	4	----	----
Potassium	7440-09-7	1	mg/L	11	7	8	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.002	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.040	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Boron	7440-42-8	0.05	mg/L	0.89	1.41	0.89	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Strontium	7440-24-6	0.001	mg/L	1.35	0.856	0.486	----	----
Barium	7440-39-3	0.001	mg/L	0.077	0.076	0.107	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
				Client sampling date / time	04-FEB-2014 15:00	04-FEB-2014 15:00	04-FEB-2014 15:00	----	----
					EB1402299-001	EB1402299-002	EB1402299-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0002**	<0.0001	**0.0006**	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	<0.005	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.017**	**0.001**	**0.016**	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		**0.001**	**0.003**	**0.002**	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.012**	**0.003**	**0.005**	----	----
Lithium	7439-93-2	0.001	mg/L		**0.007**	**0.002**	**0.002**	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L		**46.0**	**0.631**	**0.846**	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	**0.002**	**0.005**	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		**0.004**	<0.001	**0.002**	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	**0.006**	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	<0.005	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	04-FEB-2014 15:00	04-FEB-2014 15:00	04-FEB-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1402299-001	EB1402299-002	EB1402299-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.386**	**0.154**	**0.163**	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**7.42**	**10.8**	**12.2**	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.2**	**0.3**	**0.7**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	**0.01**	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1405549**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Full Suite - Leach 17	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 11-MAR-2014
Sampler	: ----	Issue Date	: 18-MAR-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	12-MAR-2014 15:00	12-MAR-2014 15:00	12-MAR-2014 15:00	12-MAR-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1405549-001	EB1405549-002	EB1405549-003	EB1405549-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.96	6.90	7.13	4.73	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	159	86	64	78	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	4	5	<1	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	4	5	<1	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	28	2	2	4	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	34	31	21	29	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	1	<1	<1	<1	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	2	7	8	2	----
Magnesium	7439-95-4	1	mg/L	<1	4	<1	3	----
Sodium	7440-23-5	1	mg/L	3	2	2	2	----
Potassium	7440-09-7	1	mg/L	5	1	1	4	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.84	0.07	0.05	0.04	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Boron	7440-42-8	0.05	mg/L	0.67	0.96	0.90	0.68	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Strontium	7440-24-6	0.001	mg/L	0.008	0.024	0.061	0.017	----
Barium	7440-39-3	0.001	mg/L	0.135	0.146	0.177	0.157	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	12-MAR-2014 15:00	12-MAR-2014 15:00	12-MAR-2014 15:00	12-MAR-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1405549-001	EB1405549-002	EB1405549-003	EB1405549-004	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0002**	<0.0001	<0.0001	**0.0002**	----
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	----
Cobalt	7440-48-4	0.001	mg/L	**0.013**	<0.001	<0.001	**0.013**	----
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L	**0.043**	**0.002**	**0.006**	**0.008**	----
Lanthanum	7439-91-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Rubidium	7440-17-7	0.001	mg/L	**0.006**	<0.001	<0.001	**0.002**	----
Lithium	7439-93-2	0.001	mg/L	**0.003**	<0.001	<0.001	**0.002**	----
Lutetium	7439-94-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Thorium	7440-29-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Cerium	7440-45-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L	**0.189**	**0.014**	**0.025**	**0.567**	----
Neodymium	7440-00-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Praseodymium	7440-10-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L	**0.016**	<0.001	<0.001	**0.005**	----
Samarium	7440-19-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Terbium	7440-27-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	**0.002**	<0.001	----
Thulium	7440-30-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Ytterbium	7440-64-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Yttrium	7440-65-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	12-MAR-2014 15:00	12-MAR-2014 15:00	12-MAR-2014 15:00	12-MAR-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1405549-001	EB1405549-002	EB1405549-003	EB1405549-004	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.643**	**0.066**	**0.063**	**0.411**	----
Iron	7439-89-6	0.05	mg/L	**0.27**	<0.05	<0.05	<0.05	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**5.97**	**2.48**	**2.93**	**47.4**	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.1**	**0.1**	<0.1	<0.1	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.02**	<0.01	**0.01**	**0.04**	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1403038**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 18	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 11-FEB-2014
Sampler	: ----	Issue Date	: 17-FEB-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	12-FEB-2014 15:00	12-FEB-2014 15:00	12-FEB-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1403038-001	EB1403038-002	EB1403038-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.75	7.59	7.68	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1180	970	629	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	33	28	----	----
Total Alkalinity as CaCO3	----	1	mg/L	4	33	28	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	3	2	3	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	666	513	286	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1406243**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 18	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 18-MAR-2014
Sampler	: ----	Issue Date	: 24-MAR-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- Analytical Results

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Where moisture determination has been performed, results are reported on a dry weight basis.

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When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	19-MAR-2014 15:00	19-MAR-2014 15:00	19-MAR-2014 15:00	19-MAR-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1406243-001	EB1406243-002	EB1406243-003	EB1406243-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.99	7.01	7.16	5.21	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	145	88	71	72	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	7	11	3	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	7	11	3	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	28	5	5	10	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	32	31	22	27	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1403619**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
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Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 19	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 18-FEB-2014
Sampler	: ----	Issue Date	: 25-FEB-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	18-FEB-2014 10:00	18-FEB-2014 10:00	18-FEB-2014 10:00	----	----
Compound	CAS Number	LOR	Unit	EB1403619-001	EB1403619-002	EB1403619-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.41	7.58	7.65	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1220	1010	637	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	5	33	33	----	----
Total Alkalinity as CaCO3	----	1	mg/L	5	33	33	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	5	9	5	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	721	553	296	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1406834**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 19	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-MAR-2014
Sampler	: ----	Issue Date	: 31-MAR-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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LOR = Limit of reporting
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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	26-MAR-2014 15:00	26-MAR-2014 15:00	26-MAR-2014 15:00	26-MAR-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1406834-001	EB1406834-002	EB1406834-003	EB1406834-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.99	7.09	7.22	5.04	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	135	84	60	65	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	8	11	2	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	8	11	2	----
P-Alkalinity as CaCO3	----	1	mg/L	<1	<1	<1	<1	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	38	9	7	7	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	34	32	19	26	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1404237**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 20	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-FEB-2014
Sampler	: ----	Issue Date	: 03-MAR-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	26-FEB-2014 15:00	26-FEB-2014 15:00	26-FEB-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1404237-001	EB1404237-002	EB1404237-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	5.61	7.66	7.73	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1280	1140	680	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	29	31	----	----
Total Alkalinity as CaCO3	----	1	mg/L	4	29	31	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	5	7	5	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	748	626	320	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1407662**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 20	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 01-APR-2014
Sampler	: ----	Issue Date	: 08-APR-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

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^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	02-APR-2014 15:00	02-APR-2014 15:00	02-APR-2014 15:00	02-APR-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1407662-001	EB1407662-002	EB1407662-003	EB1407662-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.92	7.12	7.24	4.98	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	168	128	82	75	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	11	9	2	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	11	9	2	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	32	3	3	8	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	36	44	24	25	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1405192**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Full Analysis - Leach 21	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 04-MAR-2014
Sampler	: ----	Issue Date	: 12-MAR-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Signatories	*Position*	*Accreditation Category*
Andrew Epps	Metals Production Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	05-MAR-2014 15:00	05-MAR-2014 15:00	05-MAR-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1405192-001	EB1405192-002	EB1405192-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.27**	**7.26**	**7.24**	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1310**	**1100**	**625**	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**298**	**300**	**364**	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**298**	**300**	**364**	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**14**	**5**	**5**	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**688**	**546**	**250**	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	<1	<1	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**158**	**233**	**115**	----	----
Magnesium	7439-95-4	1	mg/L	**54**	**4**	**2**	----	----
Sodium	7440-23-5	1	mg/L	**2**	**3**	**3**	----	----
Potassium	7440-09-7	1	mg/L	**10**	**5**	**6**	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	**0.039**	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Boron	7440-42-8	0.05	mg/L	**0.90**	**1.38**	**0.93**	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Strontium	7440-24-6	0.001	mg/L	**1.40**	**0.884**	**0.433**	----	----
Barium	7440-39-3	0.001	mg/L	**0.069**	**0.064**	**0.091**	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
				Client sampling date / time	05-MAR-2014 15:00	05-MAR-2014 15:00	05-MAR-2014 15:00	----	----
Compound	CAS Number	LOR	Unit		EB1405192-001	EB1405192-002	EB1405192-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0003**	<0.0001	**0.0004**	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	<0.005	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.029**	**0.001**	**0.014**	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		**0.002**	**0.002**	<0.001	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.010**	**0.002**	**0.003**	----	----
Lithium	7439-93-2	0.001	mg/L		**0.006**	**0.002**	**0.001**	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L		**43.5**	**0.820**	**0.801**	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	**0.001**	**0.004**	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		**0.007**	<0.001	**0.002**	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	**0.004**	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	<0.005	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	05-MAR-2014 15:00	05-MAR-2014 15:00	05-MAR-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1405192-001	EB1405192-002	EB1405192-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.566**	**0.217**	**0.178**	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**8.48**	**11.8**	**12.8**	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.1**	**0.2**	**0.6**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	**0.02**	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1408215**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Full Suite - Leach 21	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 08-APR-2014
Sampler	: ----	Issue Date	: 14-APR-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

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Andrew Epps	Metals Production Chemist	Brisbane Inorganics

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	08-APR-2014 10:00	08-APR-2014 10:00	08-APR-2014 10:00	08-APR-2014 10:00	----
Compound	CAS Number	LOR	Unit	EB1408215-001	EB1408215-002	EB1408215-003	EB1408215-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	4.08	3.94	7.01	4.82	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	115	154	70	56	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	8	1	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	<1	8	1	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	17	22	3	8	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	28	36	22	19	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	2	<1	<1	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	1	2	8	2	----
Magnesium	7439-95-4	1	mg/L	<1	<1	<1	2	----
Sodium	7440-23-5	1	mg/L	2	3	2	<1	----
Potassium	7440-09-7	1	mg/L	2	3	<1	2	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.88	0.81	0.05	0.01	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.001	<0.001	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Boron	7440-42-8	0.05	mg/L	0.50	0.63	0.78	0.42	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Strontium	7440-24-6	0.001	mg/L	0.007	0.008	0.056	0.014	----
Barium	7440-39-3	0.001	mg/L	0.077	0.164	0.177	0.195	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
				Client sampling date / time	08-APR-2014 10:00	08-APR-2014 10:00	08-APR-2014 10:00	08-APR-2014 10:00	----
					EB1408215-001	EB1408215-002	EB1408215-003	EB1408215-004	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0003**	**0.0002**	<0.0001	**0.0002**	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	----
Cobalt	7440-48-4	0.001	mg/L		**0.015**	**0.015**	<0.001	**0.010**	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Caesium	7440-46-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L		**0.042**	**0.042**	**0.005**	**0.006**	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Rubidium	7440-17-7	0.001	mg/L		**0.006**	**0.006**	<0.001	<0.001	----
Lithium	7439-93-2	0.001	mg/L		**0.002**	**0.002**	<0.001	**0.001**	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L		**0.179**	**0.180**	**0.030**	**0.392**	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L		**0.016**	**0.016**	<0.001	**0.003**	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	**0.002**	<0.001	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Yttrium	7440-65-5	0.001	mg/L		**0.001**	**0.001**	<0.001	<0.001	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	08-APR-2014 10:00	08-APR-2014 10:00	08-APR-2014 10:00	08-APR-2014 10:00	----
Compound	CAS Number	LOR	Unit	EB1408215-001	EB1408215-002	EB1408215-003	EB1408215-004	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.524**	**0.630**	**0.063**	**0.286**	----
Iron	7439-89-6	0.05	mg/L	**0.22**	**0.17**	<0.05	<0.05	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**4.23**	**5.54**	**3.06**	**31.4**	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	**0.02**	**0.02**	**0.04**	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1405547**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 22	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 11-MAR-2014
Sampler	: ----	Issue Date	: 18-MAR-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: ----	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	12-MAR-2014 15:00	12-MAR-2014 15:00	12-MAR-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1405547-001	EB1405547-002	EB1405547-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	4.80	7.64	7.70	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1240	1110	598	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	27	29	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	27	29	----	----
P-Alkalinity as CaCO3	----	1	mg/L	<1	<1	<1	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	7	4	2	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	664	567	249	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1408893**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: A HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: ----	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 22	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 15-APR-2014
Sampler	: ----	Issue Date	: 23-APR-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- Analytical Results

NATA Accredited Laboratory 825

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Metals Production Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	15-APR-2014 15:00	15-APR-2014 15:00	15-APR-2014 15:00	15-APR-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1408893-001	EB1408893-002	EB1408893-003	EB1408893-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.96	7.06	7.19	5.07	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	153	76	68	56	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	11	12	2	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	11	12	2	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	24	5	2	5	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	35	25	21	20	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1406241**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 23	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 18-MAR-2014
Sampler	: ----	Issue Date	: 25-MAR-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: ----	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Signatories

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Signatories	*Position*	*Accreditation Category*
Andrew Epps	Metals Production Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	19-MAR-2014 15:00	19-MAR-2014 15:00	19-MAR-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1406241-001	EB1406241-002	EB1406241-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.27	7.63	7.70	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1190	1070	564	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	5	35	30	----	----
Total Alkalinity as CaCO3	----	1	mg/L	5	35	30	----	----
P-Alkalinity as CaCO3	----	1	mg/L	<1	<1	<1	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	14	5	2	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	695	598	244	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1409380**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 23	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 23-APR-2014
Sampler	: ----	Issue Date	: 29-APR-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	23-APR-2014 13:00	23-APR-2014 13:00	23-APR-2014 13:00	23-APR-2014 13:00	----
Compound	CAS Number	LOR	Unit	EB1409380-001	EB1409380-002	EB1409380-003	EB1409380-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.97	6.77	6.99	5.37	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	133	74	56	58	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	4	6	3	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	4	6	3	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	28	3	3	3	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	34	27	18	22	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1406833**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 24	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-MAR-2014
Sampler	: ----	Issue Date	: 31-MAR-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: ----	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	26-MAR-2014 15:00	26-MAR-2014 15:00	26-MAR-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1406833-001	EB1406833-002	EB1406833-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.14	7.63	7.70	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1320	1200	590	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	5	29	37	----	----
Total Alkalinity as CaCO3	----	1	mg/L	5	29	37	----	----
P-Alkalinity as CaCO3	----	1	mg/L	<1	<1	<1	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	120	5	2	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	747	638	233	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1409932**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 24	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 30-APR-2014
Sampler	: ----	Issue Date	: 05-MAY-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	30-APR-2014 15:00	30-APR-2014 15:00	30-APR-2014 15:00	30-APR-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1409932-001	EB1409932-002	EB1409932-003	EB1409932-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.97	7.00	7.19	5.14	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	144	76	58	56	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	7	10	3	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	7	10	3	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	22	3	3	5	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	33	26	17	20	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1407657**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Full Analysis - Leach 25	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 01-APR-2014
Sampler	: ----	Issue Date	: 08-APR-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Greg Vogel	Laboratory Manager	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	02-APR-2014 15:00	02-APR-2014 15:00	02-APR-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1407657-001	EB1407657-002	EB1407657-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.48**	**7.63**	**7.71**	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1210**	**1180**	**627**	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**6**	**34**	**44**	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**6**	**34**	**44**	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**19**	**6**	**3**	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**610**	**607**	**244**	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	<1	<1	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**152**	**251**	**110**	----	----
Magnesium	7439-95-4	1	mg/L	**50**	**4**	**1**	----	----
Sodium	7440-23-5	1	mg/L	**2**	**4**	**3**	----	----
Potassium	7440-09-7	1	mg/L	**11**	**6**	**6**	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.06**	<0.01	<0.01	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	**0.001**	<0.001	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	**0.036**	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Boron	7440-42-8	0.05	mg/L	**0.94**	**1.63**	**1.04**	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Strontium	7440-24-6	0.001	mg/L	**1.53**	**1.18**	**0.454**	----	----
Barium	7440-39-3	0.001	mg/L	**0.102**	**0.082**	**0.110**	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
				Client sampling date / time	02-APR-2014 15:00	02-APR-2014 15:00	02-APR-2014 15:00	----	----
					EB1407657-001	EB1407657-002	EB1407657-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0004**	<0.0001	**0.0005**	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	<0.005	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.048**	**0.002**	**0.015**	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		**0.004**	**0.002**	<0.001	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.012**	**0.002**	**0.004**	----	----
Lithium	7439-93-2	0.001	mg/L		**0.007**	**0.003**	**0.002**	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L		**69.8**	**1.02**	**0.895**	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	**0.001**	**0.003**	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		**0.013**	<0.001	**0.002**	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	**0.004**	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	<0.005	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	02-APR-2014 15:00	02-APR-2014 15:00	02-APR-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1407657-001	EB1407657-002	EB1407657-003	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.640**	**0.296**	**0.222**	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**8.66**	**12.9**	**13.3**	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.1**	**0.3**	**0.6**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	**0.03**	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**12.8**	**13.3**	**5.96**	----	----
Total Cations	----	0.01	meq/L	**12.1**	**13.2**	**5.86**	----	----
Ionic Balance	----	0.01	%	**2.99**	**0.45**	**0.82**	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1410587**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Full Suite - Leach 25	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 05-MAY-2014
Sampler	: ----	Issue Date	: 13-MAY-2014
Site	: ----		
		No. of samples received	: 4
Quote number	: BN/027/13	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **EK040P(Fluoride) : Sample Col#2 ENG277 was diluted due to low volume. LOR adjusted accordingly.**
- **Ionic balances are within acceptable limits as detailed in the 21st Ed. APHA "Standard Methods for the Examination of Water and Wastewater".**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	06-MAY-2014 15:00	06-MAY-2014 15:00	06-MAY-2014 15:00	06-MAY-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1410587-001	EB1410587-002	EB1410587-003	EB1410587-004	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	3.85	5.95	6.23	4.75	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	155	58	55	58	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	5	6	<1	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	5	6	<1	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	28	5	2	5	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	33	19	16	19	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	<1	<1	<1	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	2	4	6	2	----
Magnesium	7439-95-4	1	mg/L	<1	2	<1	2	----
Sodium	7440-23-5	1	mg/L	2	1	2	<1	----
Potassium	7440-09-7	1	mg/L	4	<1	<1	2	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	1.18	0.06	0.05	0.02	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Boron	7440-42-8	0.05	mg/L	0.45	0.46	0.75	0.31	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Strontium	7440-24-6	0.001	mg/L	0.008	0.016	0.044	0.014	----
Barium	7440-39-3	0.001	mg/L	0.120	0.141	0.180	0.168	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
				Client sampling date / time	06-MAY-2014 15:00	06-MAY-2014 15:00	06-MAY-2014 15:00	06-MAY-2014 15:00	----
					EB1410587-001	EB1410587-002	EB1410587-003	EB1410587-004	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0003**	<0.0001	<0.0001	**0.0002**	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	----
Cobalt	7440-48-4	0.001	mg/L		**0.018**	<0.001	<0.001	**0.010**	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Caesium	7440-46-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L		**0.050**	**0.001**	**0.005**	**0.006**	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Rubidium	7440-17-7	0.001	mg/L		**0.005**	<0.001	<0.001	<0.001	----
Lithium	7439-93-2	0.001	mg/L		**0.003**	<0.001	<0.001	<0.001	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L		**0.194**	**0.008**	**0.016**	**0.404**	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L		**0.018**	<0.001	<0.001	**0.003**	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	**0.002**	<0.001	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Yttrium	7440-65-5	0.001	mg/L		**0.001**	<0.001	<0.001	<0.001	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 4 (MP27008)	Col 5 (MP27042)	Col 6 (MP26986)	Col 7 (MP27021)	----
			Client sampling date / time	06-MAY-2014 15:00	06-MAY-2014 15:00	06-MAY-2014 15:00	06-MAY-2014 15:00	----
Compound	CAS Number	LOR	Unit	EB1410587-001	EB1410587-002	EB1410587-003	EB1410587-004	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.667**	**0.048**	**0.062**	**0.298**	----
Iron	7439-89-6	0.05	mg/L	**0.10**	<0.05	<0.05	<0.05	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**4.90**	**1.28**	**2.67**	**31.4**	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.01**	<0.01	<0.01	**0.03**	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**0.69**	**0.50**	**0.45**	**0.40**	----
Total Cations	----	0.01	meq/L	----	**0.41**	**0.39**	**0.32**	----
Total Cations	----	0.01	meq/L	**0.55**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1408213**	Page	: 1 of 3
Amendment	: **1**		
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rstaines@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 26	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 15-APR-2014
Sampler	: ----	Issue Date	: 28-APR-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Metals Production Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
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^ = This result is computed from individual analyte detections at or above the level of reporting

- **This report has been amended to alter the project reference. All analysis results are as per the previous report.**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	09-APR-2014 15:00	09-APR-2014 15:00	09-APR-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1408213-001	EB1408213-002	EB1408213-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.44	7.59	7.65	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1010	1030	600	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	5	37	31	----	----
Total Alkalinity as CaCO3	----	1	mg/L	5	37	31	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	24	11	3	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	560	561	269	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1411253**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
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Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 26	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 14-MAY-2014
Sampler	: ----	Issue Date	: 21-MAY-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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WORLD RECOGNISED ACCREDITATION

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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- **EK040P(Fluoride) : Sample Col#2 ENG277 was diluted due to low volume. LOR adjusted accordingly.**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	14-MAY-2014 15:00	14-MAY-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1411253-001	EB1411253-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.33	6.50	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	68	66	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	9	9	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	9	9	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	14	5	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	22	19	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1408891**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: A HENDRY	Contact	: Customer Services
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E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: ----	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 27	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 15-APR-2014
Sampler	: ----	Issue Date	: 22-APR-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 3

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	Col #2 (MP02710)	Col #3 (MP02727)	----	----
			Client sampling date / time	16-APR-2014 15:00	16-APR-2014 15:00	16-APR-2014 15:00	----	----
Compound	CAS Number	LOR	Unit	EB1408891-001	EB1408891-002	EB1408891-003	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.12	7.70	7.80	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1050	1020	576	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	5	32	35	----	----
Total Alkalinity as CaCO3	----	1	mg/L	5	32	35	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	9	5	5	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	624	572	269	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1411918**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 27	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 20-MAY-2014
Sampler	: ----	Issue Date	: 26-MAY-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- Analytical Results

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Signatories

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Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics

General Comments

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **EK040P(Fluoride) : Sample Col#2 ENG277 was diluted due to low volume. LOR adjusted accordingly.**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	23-MAY-2014 15:00	23-MAY-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1411918-001	EB1411918-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.56	6.59	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	81	54	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	7	7	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	7	7	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	2	3	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	29	16	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1409378**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 28	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 17-APR-2014
Sampler	: ----	Issue Date	: 29-APR-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- Analytical Results

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	23-APR-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1409378-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.29**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1090**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**5**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**5**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**22**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**654**	----	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1412587**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 28	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 27-MAY-2014
Sampler	: ----	Issue Date	: 03-JUN-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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WORLD RECOGNISED ACCREDITATION

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **EK040P(Fluoride) : Sample Col#2 ENG277 was diluted due to low volume. LOR adjusted accordingly.**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	27-MAY-2014 15:00	27-MAY-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1412587-001	EB1412587-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.86**	**6.98**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**72**	**54**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**5**	**7**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**5**	**7**	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	<1	<1	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**23**	**15**	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1409930**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Full analysis- Leach 29	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 30-APR-2014
Sampler	: ----	Issue Date	: 07-MAY-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	30-APR-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1409930-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.48**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1210**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**4**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**4**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**6**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**697**	----	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	**2**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**128**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**47**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**2**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**8**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.04**	----	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	----	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	----	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	----	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.68**	----	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	----	----	----	----
Strontium	7440-24-6	0.001	mg/L	**1.22**	----	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.077**	----	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	----	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	30-APR-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1409930-001	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Gallium	7440-55-3	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0006**	----	----	----	----
Hafnium	7440-58-6	0.01	mg/L	<0.01	----	----	----	----
Tellurium	22541-49-7	0.005	mg/L	<0.005	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.122**	----	----	----	----
Holmium	7440-60-0	0.001	mg/L	<0.001	----	----	----	----
Uranium	7440-61-1	0.001	mg/L	<0.001	----	----	----	----
Caesium	7440-46-2	0.001	mg/L	<0.001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Indium	7440-74-6	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.007**	----	----	----	----
Lanthanum	7439-91-0	0.001	mg/L	<0.001	----	----	----	----
Rubidium	7440-17-7	0.001	mg/L	**0.009**	----	----	----	----
Lithium	7439-93-2	0.001	mg/L	**0.006**	----	----	----	----
Lutetium	7439-94-3	0.001	mg/L	<0.001	----	----	----	----
Thorium	7440-29-1	0.001	mg/L	<0.001	----	----	----	----
Cerium	7440-45-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	**70.3**	----	----	----	----
Neodymium	7440-00-8	0.001	mg/L	<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	----	----	----	----
Praseodymium	7440-10-0	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.036**	----	----	----	----
Samarium	7440-19-9	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Terbium	7440-27-9	0.001	mg/L	<0.001	----	----	----	----
Antimony	7440-36-0	0.001	mg/L	<0.001	----	----	----	----
Thulium	7440-30-4	0.001	mg/L	<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----
Ytterbium	7440-64-4	0.001	mg/L	<0.001	----	----	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	----	----	----	----
Yttrium	7440-65-5	0.001	mg/L	<0.001	----	----	----	----
Thallium	7440-28-0	0.001	mg/L	<0.001	----	----	----	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	30-APR-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1409930-001	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.862**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.10	mg/L	**8.98**	----	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.02**	----	----	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**14.6**	----	----	----	----
Total Cations	----	0.01	meq/L	**13.3**	----	----	----	----
Ionic Balance	----	0.01	%	**4.86**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1413267**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Full analysis- Leach 29	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 03-JUN-2014
Sampler	: ----	Issue Date	: 11-JUN-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Matheson	Senior Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **ED038 (Acidity as Calcium Carbonate): Insufficient sample volume to perform Acidity as Calcium Carbonate analysis on sample Col 5 (MP27042).**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	03-JUN-2014 15:00	03-JUN-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1413267-001	EB1413267-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.68**	**6.71**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**83**	**54**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**11**	**7**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**11**	**7**	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	----	**5**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**26**	**16**	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	<1	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**6**	**6**	----	----	----
Magnesium	7439-95-4	1	mg/L	**3**	<1	----	----	----
Sodium	7440-23-5	1	mg/L	**1**	**2**	----	----	----
Potassium	7440-09-7	1	mg/L	<1	<1	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.04**	**0.03**	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.86**	**0.77**	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.022**	**0.038**	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.132**	**0.157**	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	03-JUN-2014 15:00	03-JUN-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1413267-001	EB1413267-002	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	----	----	----
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	----	----	----
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	----	----	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	----	----	----
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	**0.005**	----	----	----
Lanthanum	7439-91-0	0.001	mg/L	<0.001	<0.001	----	----	----
Rubidium	7440-17-7	0.001	mg/L	<0.001	<0.001	----	----	----
Lithium	7439-93-2	0.001	mg/L	<0.001	<0.001	----	----	----
Lutetium	7439-94-3	0.001	mg/L	<0.001	<0.001	----	----	----
Thorium	7440-29-1	0.001	mg/L	<0.001	<0.001	----	----	----
Cerium	7440-45-1	0.001	mg/L	<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.033**	**0.027**	----	----	----
Neodymium	7440-00-8	0.001	mg/L	<0.001	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	----	----	----
Praseodymium	7440-10-0	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Samarium	7440-19-9	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Terbium	7440-27-9	0.001	mg/L	<0.001	<0.001	----	----	----
Antimony	7440-36-0	0.001	mg/L	<0.001	**0.001**	----	----	----
Thulium	7440-30-4	0.001	mg/L	<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----
Ytterbium	7440-64-4	0.001	mg/L	<0.001	<0.001	----	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	----	----	----
Yttrium	7440-65-5	0.001	mg/L	<0.001	<0.001	----	----	----
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	----	----	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	03-JUN-2014 15:00	03-JUN-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1413267-001	EB1413267-002	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.064**	**0.069**	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.05	mg/L	**5.14**	**5.66**	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.1**	<0.1	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.01**	<0.01	----	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**0.76**	**0.47**	----	----	----
Total Cations	----	0.01	meq/L	**0.59**	**0.39**	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1410588**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 30	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 06-MAY-2014
Sampler	: ----	Issue Date	: 13-MAY-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	06-MAY-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1410588-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.15**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1200**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**3**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**3**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**11**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**672**	----	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1413852**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 30	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 11-JUN-2014
Sampler	: ----	Issue Date	: 18-JUN-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- General Comments
- Analytical Results

NATA Accredited Laboratory 825

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WORLD RECOGNISED ACCREDITATION

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	11-JUN-2014 15:00	11-JUN-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1413852-001	EB1413852-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.83	6.84	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	80	57	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	9	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	4	9	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	6	3	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	25	16	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1411252**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
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E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 31	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 12-MAY-2014
Sampler	: ----	Issue Date	: 21-MAY-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- Analytical Results

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WORLD RECOGNISED ACCREDITATION

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	13-MAY-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1411252-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**4.92**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1020**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**2**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**2**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**13**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**576**	----	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1413856**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
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E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 31	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 18-JUN-2014
Sampler	: ----	Issue Date	: 24-JUN-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

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- Analytical Results

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Signatories

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Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	18-JUN-2014 15:00	18-JUN-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1413856-001	EB1413856-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.68	6.71	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	78	55	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	9	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	4	9	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	9	2	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	23	13	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1411914**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
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E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 32	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 20-MAY-2014
Sampler	: ----	Issue Date	: 26-MAY-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

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Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics

General Comments

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- **EK040P(Fluoride) : Sample Col#2 ENG277 was diluted due to low volume. LOR adjusted accordingly.**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	23-MAY-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1411914-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.06**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1110**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**2**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**2**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**38**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**649**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1413857**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Additionals - Reduced Suite - Leach 32	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-JUN-2014
Sampler	: ----	Issue Date	: 30-JUN-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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LOR = Limit of reporting
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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	25-JUN-2014 15:00	25-JUN-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1413857-001	EB1413857-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.88	6.87	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	78	48	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	7	9	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	7	9	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	8	9	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	26	13	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1412584**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
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E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Full analysis- Leach 33	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 28-MAY-2014
Sampler	: ----	Issue Date	: 06-JUN-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	27-MAY-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1412584-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.19**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**975**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**1**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**1**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**32**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**525**	----	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**107**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**40**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**2**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**8**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	----	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	----	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	----	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.79**	----	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	----	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.975**	----	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.102**	----	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	----	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	----	----	----	----
				Client sampling date / time	27-MAY-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1412584-001	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0007**	----	----	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	----	----	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.146**	----	----	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	----	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	----	----	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.016**	----	----	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	----	----	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.010**	----	----	----	----
Lithium	7439-93-2	0.001	mg/L		**0.006**	----	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	----	----	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	----	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**72.8**	----	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.045**	----	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	----	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	----	----	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	----	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	----	----	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	27-MAY-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1412584-001	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.934**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.05	mg/L	**9.82**	----	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	----	----	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**11.0**	----	----	----	----
Total Cations	----	0.01	meq/L	**11.6**	----	----	----	----
Ionic Balance	----	0.01	%	**2.52**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1415794**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Additionals-Full analysis- Leach 33	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 30-JUN-2014
Sampler	: ----	Issue Date	: 08-JUL-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **Ionic balances are within acceptable limits as detailed in the 21st Ed. APHA "Standard Methods for the Examination of Water and Wastewater".**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	01-JUL-2014 15:00	01-JUL-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1415794-001	EB1415794-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.69**	**6.55**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**61**	**48**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**6**	**6**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**6**	**6**	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**8**	**8**	----	----	----
Acidity as CaCO3 (pH 3.7)	----	1	mg/L	<1	<1	----	----	----
Acidity as CaCO3 (pH 8.3)	----	1	mg/L	<1	<1	----	----	----
Acidity as H2SO4	----	1	mg/L	<1	<1	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**20**	**14**	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	<1	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**4**	**6**	----	----	----
Magnesium	7439-95-4	1	mg/L	**3**	<1	----	----	----
Sodium	7440-23-5	1	mg/L	<1	**1**	----	----	----
Potassium	7440-09-7	1	mg/L	<1	<1	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.04**	**0.04**	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L	**0.002**	**0.001**	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.51**	**0.63**	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.019**	**0.037**	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.122**	**0.163**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	01-JUL-2014 15:00	01-JUL-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1415794-001	EB1415794-002	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	----	----	----
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	----	----	----
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	----	----	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	----	----	----
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.002**	**0.005**	----	----	----
Lanthanum	7439-91-0	0.001	mg/L	<0.001	<0.001	----	----	----
Rubidium	7440-17-7	0.001	mg/L	<0.001	<0.001	----	----	----
Lithium	7439-93-2	0.001	mg/L	<0.001	<0.001	----	----	----
Lutetium	7439-94-3	0.001	mg/L	<0.001	<0.001	----	----	----
Thorium	7440-29-1	0.001	mg/L	<0.001	<0.001	----	----	----
Cerium	7440-45-1	0.001	mg/L	<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.030**	**0.028**	----	----	----
Neodymium	7440-00-8	0.001	mg/L	<0.001	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	----	----	----
Praseodymium	7440-10-0	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.001**	<0.001	----	----	----
Samarium	7440-19-9	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Terbium	7440-27-9	0.001	mg/L	<0.001	<0.001	----	----	----
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	----	----	----
Thulium	7440-30-4	0.001	mg/L	<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----
Ytterbium	7440-64-4	0.001	mg/L	<0.001	<0.001	----	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	----	----	----
Yttrium	7440-65-5	0.001	mg/L	<0.001	<0.001	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	01-JUL-2014 15:00	01-JUL-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1415794-001	EB1415794-002	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	----	----	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.059**	**0.061**	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.05	mg/L	**1.24**	**2.00**	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	----	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**0.54**	**0.41**	----	----	----
Total Cations	----	0.01	meq/L	**0.45**	**0.34**	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1413265**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Full analysis- Leach 34	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 03-JUN-2014
Sampler	: ----	Issue Date	: 11-JUN-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Matheson	Senior Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	03-JUN-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1413265-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.19**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**941**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**5**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**5**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**11**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**506**	----	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**97**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**38**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**2**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**8**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	----	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	**0.001**	----	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	----	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	----	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.76**	----	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	----	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.851**	----	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.089**	----	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	----	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	----	----	----	----
				Client sampling date / time	03-JUN-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1413265-001	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0006**	----	----	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	----	----	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.134**	----	----	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	----	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	----	----	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.016**	----	----	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	----	----	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.008**	----	----	----	----
Lithium	7439-93-2	0.001	mg/L		**0.005**	----	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	----	----	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	----	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**57.2**	----	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.040**	----	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	----	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	----	----	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	----	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	----	----	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	03-JUN-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1413265-001	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.856**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.05	mg/L	**10.4**	----	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.02**	----	----	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**10.6**	----	----	----	----
Total Cations	----	0.01	meq/L	**10.3**	----	----	----	----
Ionic Balance	----	0.01	%	**1.24**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1416372**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Additionals - Reduced Suite - Leach 34	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 08-JUL-2014
Sampler	: ----	Issue Date	: 15-JUL-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	08-JUL-2014 10:00	08-JUL-2014 10:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1416372-001	EB1416372-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.16	6.80	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	68	50	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	9	8	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	9	8	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	11	5	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	22	14	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1413858**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 35	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 11-JUN-2014
Sampler	: ----	Issue Date	: 18-JUN-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	11-JUN-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1413858-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.04**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**926**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**5**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**5**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**11**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**740**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1416865**	Page	: 1 of 3
Amendment	: **1**		
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Additionals - Reduced Suite - Leach 35	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 15-JUL-2014
Sampler	: ----	Issue Date	: 22-JUL-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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^ = This result is computed from individual analyte detections at or above the level of reporting

- **This report has been amended and re-released to allow the reporting of additional analytical data.**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	15-JUL-2014 15:00	15-JUL-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1416865-001	EB1416865-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.75	6.59	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	87	57	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	5	7	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	5	7	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	<1	12	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	22	13	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1413859**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 36	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 18-JUN-2014
Sampler	: ----	Issue Date	: 24-JUN-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	18-JUN-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1413859-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.64**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**809**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**1**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**1**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**14**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**380**	----	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1417305**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Additionals - Reduced Suite - Leach 36	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 22-JUL-2014
Sampler	: ----	Issue Date	: 28-JUL-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	22-JUL-2014 15:00	22-JUL-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1417305-001	EB1417305-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.39	6.47	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	71	54	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	7	7	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	7	7	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	<1	<1	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	22	13	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1413860**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Full analysis- Leach 37	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-JUN-2014
Sampler	: ----	Issue Date	: 02-JUL-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	25-JUN-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1413860-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.67**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**828**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**4**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**4**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**13**	----	----	----	----
Acidity as CaCO3 (pH 3.7)	----	1	mg/L	<1	----	----	----	----
Acidity as CaCO3 (pH 8.3)	----	1	mg/L	<1	----	----	----	----
Acidity as H2SO4	----	1	mg/L	<1	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**440**	----	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**88**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**33**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**2**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**6**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	----	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	----	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	----	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.73**	----	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	----	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.609**	----	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.079**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	----	----	----	----
				Client sampling date / time	25-JUN-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1413860-001	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gadolinium	7440-54-2	0.001	mg/L		<0.001	----	----	----	----
Titanium	7440-32-6	0.01	mg/L		<0.01	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L		<0.001	----	----	----	----
Gallium	7440-55-3	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0006**	----	----	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	----	----	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.134**	----	----	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	----	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	----	----	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.028**	----	----	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	----	----	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.006**	----	----	----	----
Lithium	7439-93-2	0.001	mg/L		**0.005**	----	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	----	----	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	----	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**46.5**	----	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.045**	----	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	----	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	----	----	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	25-JUN-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1413860-001	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Thallium	7440-28-0	0.001	mg/L	<0.001	----	----	----	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.868**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.05	mg/L	**7.41**	----	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.1**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	----	----	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**9.24**	----	----	----	----
Total Cations	----	0.01	meq/L	**9.04**	----	----	----	----
Ionic Balance	----	0.01	%	**1.09**	----	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1418233**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Additionals-Full analysis- Leach 37	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 29-JUL-2014
Sampler	: ----	Issue Date	: 06-AUG-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
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WORLD RECOGNISED ACCREDITATION

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Where moisture determination has been performed, results are reported on a dry weight basis.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **EG020-F (Dissolved Metals by ICP-MS): Sample EB1418233 - 002 (Col 6 (MP26986)) shows poor matrix spike recovery due to matrix interference. Confirmed by re-extraction and re-analysis.**
- **Ionic balances are within acceptable limits as detailed in the 21st Ed. APHA "Standard Methods for the Examination of Water and Wastewater".**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	29-JUL-2014 15:00	29-JUL-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1418233-001	EB1418233-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.79**	**4.93**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**79**	**50**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**17**	**7**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**17**	**7**	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**3**	**17**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**24**	**14**	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	<1	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**5**	**5**	----	----	----
Magnesium	7439-95-4	1	mg/L	**3**	<1	----	----	----
Sodium	7440-23-5	1	mg/L	**1**	**1**	----	----	----
Potassium	7440-09-7	1	mg/L	<1	<1	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.02**	**0.02**	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.46**	**0.42**	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.018**	**0.034**	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.135**	**0.180**	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	29-JUL-2014 15:00	29-JUL-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1418233-001	EB1418233-002	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	----	----	----
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	----	----	----
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	----	----	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	----	----	----
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.002**	**0.004**	----	----	----
Lanthanum	7439-91-0	0.001	mg/L	<0.001	<0.001	----	----	----
Rubidium	7440-17-7	0.001	mg/L	<0.001	<0.001	----	----	----
Lithium	7439-93-2	0.001	mg/L	<0.001	<0.001	----	----	----
Lutetium	7439-94-3	0.001	mg/L	<0.001	<0.001	----	----	----
Thorium	7440-29-1	0.001	mg/L	<0.001	<0.001	----	----	----
Cerium	7440-45-1	0.001	mg/L	<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.017**	**0.023**	----	----	----
Neodymium	7440-00-8	0.001	mg/L	<0.001	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	----	----	----
Praseodymium	7440-10-0	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Samarium	7440-19-9	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Terbium	7440-27-9	0.001	mg/L	<0.001	<0.001	----	----	----
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	----	----	----
Thulium	7440-30-4	0.001	mg/L	<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----
Ytterbium	7440-64-4	0.001	mg/L	<0.001	<0.001	----	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	----	----	----
Yttrium	7440-65-5	0.001	mg/L	<0.001	<0.001	----	----	----
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	----	----	----
Zirconium	7440-67-7	0.005	mg/L	<0.005	<0.005	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	29-JUL-2014 15:00	29-JUL-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1418233-001	EB1418233-002	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.058**	**0.055**	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.05	mg/L	**1.57**	**2.05**	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**2.4**	**1.1**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.02**	**0.01**	----	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**0.84**	**0.43**	----	----	----
Total Cations	----	0.01	meq/L	----	**0.29**	----	----	----
Total Cations	----	0.01	meq/L	**0.66**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1415792**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 38	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 01-JUL-2014
Sampler	: ----	Issue Date	: 08-JUL-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- General Comments
- Analytical Results

NATA Accredited Laboratory 825

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Signatories

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Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 1 (MP02702)	----	----	----	----
			Client sampling date / time	01-JUL-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1415792-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.68**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**686**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**22**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**276**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1418757**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Additionals- reduced suite- Leach 38	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 06-AUG-2014
Sampler	: ----	Issue Date	: 12-AUG-2014
Site	: ----		
		No. of samples received	: 2
Quote number	: BN/027/13	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	06-AUG-2014 15:00	06-AUG-2014 15:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1418757-001	EB1418757-002	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	5.61	6.81	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	66	45	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	10	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	4	10	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	6	3	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	24	14	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1416376**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 39	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 08-JUL-2014
Sampler	: ----	Issue Date	: 15-JUL-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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- General Comments
- Analytical Results

NATA Accredited Laboratory 825

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Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 1 (MP02702)	----	----	----	----
			Client sampling date / time	08-JUL-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1416376-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	5.39	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	626	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	4	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	32	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	295	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1440409**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys -Additionals- reduced suite- Leach 39	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 12-Aug-2014 14:34
Sampler	: ----	Issue Date	: 20-Aug-2014 09:16
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col 5 (MP27042)**	**Col 6 (MP26986)**	**----**	**----**	**----**
			Client sampling date / time	[11-Aug-2014]	[11-Aug-2014]	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1440409-001**	**EB1440409-002**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL	**210**	**225**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit	**6.34**	**6.50**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm	**66**	**45**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	-----	-----	-----
			Client sampling date / time	[11-Aug-2014]	[11-Aug-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1440409-001	EB1440409-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	6.81	6.36	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	63	43	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	6	4	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	6	4	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	3	3	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	22	14	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1416862**	Page	: 1 of 3
Amendment	: **1**		
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 40	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 15-JUL-2014
Sampler	: ----	Issue Date	: 22-JUL-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **This report has been amended and re-released to allow the reporting of additional analytical data.**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 1 (MP02702)	----	----	----	----
			Client sampling date / time	15-JUL-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1416862-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.11**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**734**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**3**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**3**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**9**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**325**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1440785**	Page	: 1 of 4
Amendment	: **1**		
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys- Additionals-Reduced Suite- Leach 40	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 19-Aug-2014 14:48
Sampler	: ----	Issue Date	: 30-Sep-2014 16:13
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

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- Analytical Results

NATA Accredited Laboratory 825

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Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col 5 (MP27042)**	**Col 6 (MP26986)**	**----**	**----**	**----**
			Client sampling date / time	[19-Aug-2014]	[19-Aug-2014]	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1440785-001**	**EB1440785-002**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL	**230**	**220**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit	**6.18**	**6.61**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm	**59**	**44**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	-----	-----	-----
			Client sampling date / time	[19-Aug-2014]	[19-Aug-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1440785-001	EB1440785-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.13**	**5.99**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**69**	**51**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**10**	**12**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**10**	**12**	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**2**	**3**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**22**	**14**	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1417266**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys -Full analysis- Leach 41	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 22-JUL-2014
Sampler	: ----	Issue Date	: 30-JUL-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	22-JUL-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1417266-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.76**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**785**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**4**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**4**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**2**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**360**	----	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	<1	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**68**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**26**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**2**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**6**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.08**	----	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	----	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	**0.004**	----	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	----	----	----	----
Erbium	7440-52-0	0.001	mg/L	**0.001**	----	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.86**	----	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	----	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.509**	----	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.084**	----	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	----	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	----	----	----	----
				Client sampling date / time	22-JUL-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1417266-001	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Gallium	7440-55-3	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0006**	----	----	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	----	----	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.120**	----	----	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	----	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	----	----	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.049**	----	----	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	----	----	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.006**	----	----	----	----
Lithium	7439-93-2	0.001	mg/L		**0.005**	----	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	----	----	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	----	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**47.8**	----	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.043**	----	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	----	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	----	----	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	----	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	----	----	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	22-JUL-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1417266-001	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Zinc	7440-66-6	0.005	mg/L	**0.956**	----	----	----	----
Iron	7439-89-6	0.05	mg/L	**0.26**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EG052G: Silica by Discrete Analyser								
Reactive Silica	----	0.05	mg/L	**7.53**	----	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	----	----	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**7.58**	----	----	----	----
Total Cations	----	0.01	meq/L	**7.51**	----	----	----	----
Ionic Balance	----	0.01	%	**0.40**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1441103**	Page	: 1 of 6
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys -Additionals-Full analysis- Leach 41	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-Aug-2014 11:08
Sampler	: ----	Issue Date	: 02-Sep-2014 08:30
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Greg Vogel	Laboratory Manager	Brisbane Acid Sulphate Soils
Greg Vogel	Laboratory Manager	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col 5 (MP27042)**	**Col 6 (MP26986)**	**----**	**----**	**----**
			Client sampling date / time	[25-Aug-2014]	[25-Aug-2014]	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1441103-001**	**EB1441103-002**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL	**210**	**220**	**----**	**----**	**----**
ø **Room temperature**	----	0.1	°C	**30.0**	**30.0**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit	**6.28**	**6.42**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm	**45**	**40**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	[25-Aug-2014]	[25-Aug-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1441103-001	EB1441103-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	**7.59**	**7.45**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**49**	**45**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**3**	**4**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**3**	**4**	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**5**	**3**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**15**	**12**	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	<1	<1	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**3**	**5**	----	----	----
Magnesium	7439-95-4	1	mg/L	**2**	<1	----	----	----
Sodium	7440-23-5	1	mg/L	**1**	**1**	----	----	----
Potassium	7440-09-7	1	mg/L	<1	<1	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.02**	**0.01**	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.38**	**0.54**	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.015**	**0.034**	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.141**	**0.174**	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
				Client sampling date / time	[25-Aug-2014]	[25-Aug-2014]	----	----	----
Compound	CAS Number	LOR	Unit		EB1441103-001	EB1441103-002	--------	--------	--------
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	----	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	----	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	----	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	----	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	----	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	<0.001	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	----	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.003**	**0.004**	----	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	----	----	----
Rubidium	7440-17-7	0.001	mg/L		<0.001	<0.001	----	----	----
Lithium	7439-93-2	0.001	mg/L		<0.001	<0.001	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	----	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.012**	**0.023**	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	<0.001	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	----	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	----	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	----	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	<0.001	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	----	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.035**	**0.054**	----	----	----
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	-----	-----	-----
				Client sampling date / time	[25-Aug-2014]	[25-Aug-2014]	----	----	----
Compound	CAS Number	LOR	Unit		EB1441103-001	EB1441103-002	--------	--------	--------
					Result	Result	Result	Result	Result
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EG052G: Silica by Discrete Analyser									
Reactive Silica	----	0.05	mg/L		**1.48**	**2.34**	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.1**	<0.1	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.01	<0.01	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1418215**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 42	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 29-JUL-2014
Sampler	: ----	Issue Date	: 05-AUG-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 1 (MP02702)	----	----	----	----
			Client sampling date / time	29-JUL-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1418215-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.55**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**838**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**4**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**4**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**25**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**359**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1441527**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys -Additionals - Reduced Suite - Leach 42	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 01-Sep-2014 10:43
Sampler	: ----	Issue Date	: 09-Sep-2014 11:56
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col 5 (MP27042)**	**Col 6 (MP26986)**	**----**	**----**	**----**
			Client sampling date / time	[01-Sep-2014]	[01-Sep-2014]	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1441527-001**	**EB1441527-002**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL	**220**	**230**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit	**6.87**	**7.13**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm	**58**	**44**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	-----	-----	-----
			Client sampling date / time	[01-Sep-2014]	[01-Sep-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1441527-001	EB1441527-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	6.49	6.56	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	59	45	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	5	6	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	5	6	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	3	5	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	20	13	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1418758**	Page	: 1 of 3
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61 7 3243 7222
Facsimile	: ----	Facsimile	: +61 7 3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 43	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 06-AUG-2014
Sampler	: ----	Issue Date	: 12-AUG-2014
Site	: ----		
		No. of samples received	: 1
Quote number	: BN/027/13	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 1 (MP02702)	----	----	----	----
			Client sampling date / time	04-AUG-2014 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1418758-001	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**5.17**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**731**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**3**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**3**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**25**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**260**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1441993**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys -Additionals - Reduced Suite - Leach 43	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 10-Sep-2014 13:33
Sampler	: ----	Issue Date	: 22-Sep-2014 07:52
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
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ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	-----	-----	-----
			Client sampling date / time	[08-Sep-2014]	[08-Sep-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1441993-001	EB1441993-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	----	----	----
ø **Leachate collected**	----	0.01	mL	**210**	**220**	----	----	----
ø **Initial pH**	----	0.01	pH Unit	**6.34**	**6.64**	----	----	----
ø **Initial Electrical Conductivity**	----	1	µS/cm	**54**	**42**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	-----	-----	-----
			Client sampling date / time	[08-Sep-2014]	[08-Sep-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1441993-001	EB1441993-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	6.68	6.76	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	57	47	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	6	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	4	6	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	2	2	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	18	12	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1440397**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 44	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: NA	Date Samples Received	: 13-Aug-2014 11:52
Sampler	: ----	Issue Date	: 20-Aug-2014 09:19
Site	: ----		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics
Phillip Kennedy	Project Co-Ordinator	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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^ = This result is computed from individual analyte detections at or above the level of reporting
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Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col#1 (MP02702)**	**----**	**----**	**----**	**----**
			Client sampling date / time	[13-Aug-2014]	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1440397-001**	**--------**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**400**	**----**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL	**260**	**----**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit	**5.37**	**----**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm	**557**	**----**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col#1 (MP02702)	----	-----	----	----
				Client sampling date / time	[13-Aug-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1440397-001	--------	--------	--------	--------
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**6.13**	----	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**649**	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**5**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**5**	----	----	----	----
ED038A: Acidity									
Acidity as CaCO3	----	1	mg/L		**14**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**337**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1442429**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys -Additionals - Reduced Suite - Leach 44	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 17-Sep-2014 10:22
Sampler	: ----	Issue Date	: 24-Sep-2014 15:49
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

- **EA047 (Free Draining Leach Column): NATA accreditation does not cover performance of this service.**

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col 5 (MP27042)**	**Col 6 (MP26986)**	**----**	**----**	**----**
			Client sampling date / time	[17-Sep-2014]	[17-Sep-2014]	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1442429-001**	**EB1442429-002**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL	**200**	**220**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit	**6.58**	**7.04**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm	**5740**	**42**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	-----	-----	-----
			Client sampling date / time	[17-Sep-2014]	[17-Sep-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1442429-001	EB1442429-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	**5.89**	**5.91**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**58**	**42**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**4**	**6**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**4**	**6**	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**3**	**6**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**21**	**12**	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1440777**	Page	: 1 of 6
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Geochemical Characterisation	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: NA	Date Samples Received	: 19-Aug-2014 13:58
Sampler	: ----	Issue Date	: 29-Aug-2014 16:29
Site	: ----		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)				Client sample ID	**Col #1 (MP02702)**	**----**	**----**	**----**	**----**
				Client sampling date / time	[19-Aug-2014]	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**EB1440777-001**	**--------**	**--------**	**--------**	**--------**
					Result	Result	Result	Result	Result
EA047 Free Draining Leach Column									
ø **Leachate added**	----	0.01	mL		**400**	**----**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL		**240**	**----**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit		**4.71**	**----**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm		**591**	**----**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	[19-Aug-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1440777-001	--------	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	**5.75**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**693**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**4**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**4**	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**30**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**336**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	<1	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**72**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**26**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**2**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**7**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.08**	----	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	----	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	----	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	----	----	----	----
Boron	7440-42-8	0.05	mg/L	**1.31**	----	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	----	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.485**	----	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.068**	----	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	----	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----
Gallium	7440-55-3	0.001	mg/L	<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	----	----	----	----
				Client sampling date / time	[19-Aug-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1440777-001	--------	--------	--------	--------
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.0001	mg/L		**0.0007**	----	----	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	----	----	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.132**	----	----	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	----	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	----	----	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.058**	----	----	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	----	----	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.006**	----	----	----	----
Lithium	7439-93-2	0.001	mg/L		**0.059**	----	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	----	----	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	----	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**52.5**	----	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.058**	----	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	----	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	----	----	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	----	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	----	----	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**1.27**	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**0.66**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col #1 (MP02702)	----	-----	----	----
				Client sampling date / time	[19-Aug-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1440777-001	--------	--------	--------	--------
					Result	Result	Result	Result	Result
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG052G: Silica by Discrete Analyser									
Reactive Silica	----	0.05	mg/L		**9.94**	----	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.1**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.01**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1442919**	Page	: 1 of 6
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys -Additionals-Full analysis- Leach 45	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 23-Sep-2014 14:06
Sampler	: ----	Issue Date	: 30-Sep-2014 14:37
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	[23-Sep-2014]	[23-Sep-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1442919-001	EB1442919-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	----	----	----
ø **Leachate collected**	----	0.01	mL	**210**	**230**	----	----	----
ø **Initial pH**	----	0.01	pH Unit	**6.52**	**6.58**	----	----	----
ø **Initial Electrical Conductivity**	----	1	µS/cm	**60**	**37**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	[23-Sep-2014]	[23-Sep-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1442919-001	EB1442919-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	**6.52**	**6.58**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**62**	**38**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**4**	**5**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**4**	**5**	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	<1	<1	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**20**	**10**	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	<1	<1	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**4**	**4**	----	----	----
Magnesium	7439-95-4	1	mg/L	**3**	<1	----	----	----
Sodium	7440-23-5	1	mg/L	**1**	**1**	----	----	----
Potassium	7440-09-7	1	mg/L	<1	<1	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.01**	**0.02**	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.55**	**0.61**	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.016**	**0.031**	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.131**	**0.163**	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
				Client sampling date / time	[23-Sep-2014]	[23-Sep-2014]	----	----	----
Compound	CAS Number	LOR	Unit		EB1442919-001	EB1442919-002	--------	--------	--------
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	----	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	<0.01	----	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	<0.005	----	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	----	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	<0.001	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	----	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	<0.001	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	----	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.002**	**0.004**	----	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	----	----	----
Rubidium	7440-17-7	0.001	mg/L		<0.001	<0.001	----	----	----
Lithium	7439-93-2	0.001	mg/L		<0.001	<0.001	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	----	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.019**	**0.021**	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	<0.001	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	----	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	----	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	----	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	<0.001	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	----	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.032**	**0.048**	----	----	----
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)				Client sample ID	**Col 5 (MP27042)**	**Col 6 (MP26986)**	**----**	**----**	**----**
				Client sampling date / time	[23-Sep-2014]	[23-Sep-2014]	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**EB1442919-001**	**EB1442919-002**	**--------**	**--------**	**--------**
					Result	Result	Result	Result	Result
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	**----**	**----**	**----**
EG052G: Silica by Discrete Analyser									
Reactive Silica	----	0.1	mg/L		**1.35**	**2.09**	**----**	**----**	**----**
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.4**	**0.2**	**----**	**----**	**----**

CERTIFICATE OF ANALYSIS

Work Order	: **EB1443514**	Page	: 1 of 2
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys - Additionals - Leach 45	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 30-Sep-2014 15:44
C-O-C number	: ----	Date Analysis Commenced	: 03-Oct-2014
Sampler	: ----	Issue Date	: 08-Oct-2014 07:42
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: **LEACHATE** (Matrix: **WATER**)			Client sample ID	**Col 5 (MP27042)**	**Col 6 (MP26986)**	**----**	**----**	**----**
			Client sampling date / time	[23-Sep-2014]	[23-Sep-2014]	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1443514-001**	**EB1443514-002**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	**----**	**----**	**----**

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1441101**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 46	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 25-Aug-2014 10:45
Sampler	: ----	Issue Date	: 01-Sep-2014 14:15
Site	: ----		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col #1 (MP02702)**	**----**	**----**	**----**	**----**
			Client sampling date / time	[25-Aug-2014]	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1441101-001**	**--------**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**400**	**----**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL	**270**	**----**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit	**5.06**	**----**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm	**591**	**----**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col #1 (MP02702)	----	----	----	----
			Client sampling date / time	[25-Aug-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1441101-001	--------	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	**5.37**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**746**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**19**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**343**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1443344**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys -Additionals - Reduced Suite - Leach 46	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 30-Sep-2014 11:28
C-O-C number	: ----	Date Analysis Commenced	: 01-Oct-2014
Sampler	: ----	Issue Date	: 07-Oct-2014 15:51
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
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ø = ALS is not NATA accredited for these tests.

- **EA047 (Free Draining Leach Column): NATA accreditation does not cover performance of this service.**

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col 5 (MP27042)**	**Col 6 (MP26986)**	**----**	**----**	**----**
			Client sampling date / time	[29-Sep-2014]	[29-Sep-2014]	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1443344-001**	**EB1443344-002**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL	**215**	**235**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit	**6.44**	**6.81**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm	**76**	**39**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	-----	-----	-----
			Client sampling date / time	[29-Sep-2014]	[29-Sep-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1443344-001	EB1443344-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	5.77	5.92	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	58	39	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	6	4	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	6	4	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	3	<1	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	21	12	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1441525**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 47	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 01-Sep-2014 10:35
Sampler	: ----	Issue Date	: 09-Sep-2014 11:57
Site	: ----		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics
Phillip Kennedy	Project Co-Ordinator	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col 1 (MP02702)**	----	-----	----	----
			Client sampling date / time	[01-Sep-2014]	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1441525-001**	--------	--------	--------	--------
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**400**	----	----	----	----
ø **Leachate collected**	----	0.01	mL	**265**	----	----	----	----
ø **Initial pH**	----	0.01	pH Unit	**5.54**	----	----	----	----
ø **Initial Electrical Conductivity**	----	1	µS/cm	**561**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 1 (MP02702)	----	-----	----	----
			Client sampling date / time	[01-Sep-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1441525-001	--------	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	**5.65**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**715**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**28**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**392**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1443773**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys -Additionals - Reduced Suite - Leach 47	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 08-Oct-2014 11:03
C-O-C number	: ----	Date Analysis Commenced	: 08-Oct-2014
Sampler	: ----	Issue Date	: 10-Oct-2014 15:32
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	-----	-----	-----
			Client sampling date / time	[08-Oct-2014]	[08-Oct-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1443773-001	EB1443773-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	----	----	----
ø **Leachate collected**	----	0.01	mL	**220**	**225**	----	----	----
ø **Initial pH**	----	0.01	pH Unit	**6.68**	**6.89**	----	----	----
ø **Initial Electrical Conductivity**	----	1	µS/cm	**71**	**37**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	-----	-----	-----
			Client sampling date / time	[08-Oct-2014]	[08-Oct-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1443773-001	EB1443773-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	4.78	5.34	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	61	39	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	5	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	4	5	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	14	6	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	21	12	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1441991**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys - Reduced Suite - Leach 48	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 10-Sep-2014 13:20
Sampler	: ----	Issue Date	: 22-Sep-2014 08:15
Site	: ----		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics
Phillip Kennedy	Project Co-Ordinator	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)				Client sample ID	**Col 1 (MP02702)**	**----**	**----**	**----**	**----**
				Client sampling date / time	[10-Sep-2014]	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**EB1441991-001**	**--------**	**--------**	**--------**	**--------**
					Result	Result	Result	Result	Result
EA047 Free Draining Leach Column									
ø **Leachate added**	----	0.01	mL		**400**	**----**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL		**260**	**----**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit		**4.84**	**----**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm		**740**	**----**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 1 (MP02702)	----	-----	----	----
			Client sampling date / time	[10-Sep-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1441991-001	--------	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	**5.59**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**776**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**20**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**375**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1444156**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys-Additionals-Reduced Suite-Leach 48	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 15-Oct-2014 10:43
C-O-C number	: ----	Date Analysis Commenced	: 15-Oct-2014
Sampler	: ----	Issue Date	: 21-Oct-2014 14:58
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	[15-Oct-2014]	[14-Oct-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1444156-001	EB1444156-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	----	----	----
ø **Leachate collected**	----	0.01	mL	**210**	**220**	----	----	----
ø **Initial pH**	----	0.01	pH Unit	**6.59**	**6.87**	----	----	----
ø **Initial Electrical Conductivity**	----	1	µS/cm	**61**	**39**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	[15-Oct-2014]	[14-Oct-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1444156-001	EB1444156-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	**5.98**	**6.24**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**45**	**28**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**4**	**4**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**4**	**4**	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**5**	**6**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**21**	**11**	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1442427**	Page	: 1 of 6
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys -Full analysis- Leach 49	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 17-Sep-2014 10:05
Sampler	: ----	Issue Date	: 24-Sep-2014 15:49
Site	: ----		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

- **EA047 (Free Draining Leach Column): NATA accreditation does not cover performance of this service.**

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col 1 (MP02702)**	**----**	**-----**	**----**	**----**
			Client sampling date / time	[17-Sep-2014]	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1442427-001**	**--------**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**400**	**----**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL	**255**	**----**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit	**5.31**	**----**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm	**775**	**----**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 1 (MP02702)	----	----	----	----
			Client sampling date / time	[17-Sep-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit	EB1442427-001	--------	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	**4.74**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**672**	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	----	----	----	----
ED038A: Acidity								
Acidity as CaCO3	----	1	mg/L	**39**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**378**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	<1	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**73**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**26**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**3**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**8**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.06**	----	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	----	----	----	----
Silver	7440-22-4	0.001	mg/L	**0.001**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	----	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	----	----	----	----
Boron	7440-42-8	0.05	mg/L	**1.00**	----	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	----	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.484**	----	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.077**	----	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	----	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----
Gallium	7440-55-3	0.001	mg/L	<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col 1 (MP02702)	----	----	----	----
				Client sampling date / time	[17-Sep-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1442427-001	--------	--------	--------	--------
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.0001	mg/L		**0.0007**	----	----	----	----
Hafnium	7440-58-6	0.01	mg/L		<0.01	----	----	----	----
Tellurium	22541-49-7	0.005	mg/L		<0.005	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		**0.125**	----	----	----	----
Holmium	7440-60-0	0.001	mg/L		<0.001	----	----	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	----	----	----	----
Caesium	7440-46-2	0.001	mg/L		<0.001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Indium	7440-74-6	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.041**	----	----	----	----
Lanthanum	7439-91-0	0.001	mg/L		<0.001	----	----	----	----
Rubidium	7440-17-7	0.001	mg/L		**0.007**	----	----	----	----
Lithium	7439-93-2	0.001	mg/L		**0.008**	----	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	----	----	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	----	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**57.9**	----	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.056**	----	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	----	----	----	----
Antimony	7440-36-0	0.001	mg/L		**0.001**	----	----	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	----	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	----	----	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**1.11**	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**0.86**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col 1 (MP02702)	----	-----	----	----
				Client sampling date / time	[17-Sep-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1442427-001	--------	--------	--------	--------
					Result	Result	Result	Result	Result
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG052G: Silica by Discrete Analyser									
Reactive Silica	----	0.1	mg/L		**10.5**	----	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.4**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.01	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1444678**	Page	: 1 of 5
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamy-Additionals-reduced suite-Leach 49	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 20-Oct-2014 14:14
C-O-C number	: ----	Date Analysis Commenced	: 22-Oct-2014
Sampler	: ----	Issue Date	: 28-Oct-2014 19:01
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

- **EA047 (Free Draining Leach Column): NATA accreditation does not cover performance of this service.**
- **Insufficient sample volume available for Electical Conductivity, Alkalinity, Fluoride and Acidity analysis on samples Col 5 (MP27042) and Col 6 (MP26986).**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	[22-Oct-2014]	[22-Oct-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1444678-001	EB1444678-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	----	----	----
ø **Leachate collected**	----	0.01	mL	**210**	**230**	----	----	----
ø **Initial pH**	----	0.01	pH Unit	**6.52**	**6.49**	----	----	----
ø **Initial Electrical Conductivity**	----	1	µS/cm	**60**	**36**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	[22-Oct-2014]	[22-Oct-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1444678-001	EB1444678-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA005: pH								
pH Value	----	0.01	pH Unit	**6.79**	**6.76**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**21**	**10**	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	<1	<1	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**4**	**4**	----	----	----
Magnesium	7439-95-4	1	mg/L	**3**	<1	----	----	----
Sodium	7440-23-5	1	mg/L	**1**	**2**	----	----	----
Potassium	7440-09-7	1	mg/L	<1	<1	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.02**	**0.03**	----	----	----
Dysprosium	7429-91-6	0.001	mg/L	<0.001	<0.001	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	----	----	----
Erbium	7440-52-0	0.001	mg/L	<0.001	<0.001	----	----	----
Boron	7440-42-8	0.05	mg/L	**0.69**	**0.67**	----	----	----
Europium	7440-53-1	0.001	mg/L	<0.001	<0.001	----	----	----
Strontium	7440-24-6	0.001	mg/L	**0.016**	**0.026**	----	----	----
Barium	7440-39-3	0.001	mg/L	**0.058**	**0.087**	----	----	----
Gadolinium	7440-54-2	0.001	mg/L	<0.001	<0.001	----	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----
Gallium	7440-55-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Hafnium	7440-58-6	0.01	mg/L	<0.01	<0.01	----	----	----
Tellurium	22541-49-7	0.005	mg/L	<0.005	<0.005	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	----	----	----
Holmium	7440-60-0	0.001	mg/L	<0.001	<0.001	----	----	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	----	----	----
Caesium	7440-46-2	0.001	mg/L	<0.001	<0.001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Indium	7440-74-6	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.002**	**0.003**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
				Client sampling date / time	[22-Oct-2014]	[22-Oct-2014]	----	----	----
Compound	CAS Number	LOR	Unit		EB1444678-001	EB1444678-002	--------	--------	--------
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Lanthanum	7439-91-0	0.001	mg/L		<0.001	<0.001	----	----	----
Rubidium	7440-17-7	0.001	mg/L		<0.001	<0.001	----	----	----
Lithium	7439-93-2	0.001	mg/L		<0.001	<0.001	----	----	----
Lutetium	7439-94-3	0.001	mg/L		<0.001	<0.001	----	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	----	----	----
Cerium	7440-45-1	0.001	mg/L		<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.099**	**0.023**	----	----	----
Neodymium	7440-00-8	0.001	mg/L		<0.001	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		**0.007**	**0.013**	----	----	----
Praseodymium	7440-10-0	0.001	mg/L		<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.002**	**0.002**	----	----	----
Samarium	7440-19-9	0.001	mg/L		<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Terbium	7440-27-9	0.001	mg/L		<0.001	<0.001	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	----	----	----
Thulium	7440-30-4	0.001	mg/L		<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	----	----	----
Ytterbium	7440-64-4	0.001	mg/L		<0.001	<0.001	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	----	----	----
Yttrium	7440-65-5	0.001	mg/L		<0.001	<0.001	----	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	----	----	----
Zirconium	7440-67-7	0.005	mg/L		<0.005	<0.005	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.034**	**0.047**	----	----	----
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EG052G: Silica by Discrete Analyser									
Reactive Silica	----	0.1	mg/L		**1.71**	**2.15**	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.01	<0.01	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1442918**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamys-Reduced Suite-Leach 50	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 23-Sep-2014 14:01
Sampler	: ----	Issue Date	: 30-Sep-2014 13:24
Site	: ----		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

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- Analytical Results

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Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics
Greg Vogel	Laboratory Manager	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

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Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Client sample ID	**Col 1 (MP02702)**	**----**	**----**	**----**	**----**
			Client sampling date / time	[23-Sep-2014]	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1442918-001**	**--------**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**400**	**----**	**----**	**----**	**----**
ø **Leachate collected**	----	0.01	mL	**250**	**----**	**----**	**----**	**----**
ø **Initial pH**	----	0.01	pH Unit	**5.45**	**----**	**----**	**----**	**----**
ø **Initial Electrical Conductivity**	----	1	µS/cm	**547**	**----**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Col 1 (MP02702)	----	-----	----	----
				Client sampling date / time	[23-Sep-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1442918-001	--------	--------	--------	--------
					Result	Result	Result	Result	Result
EA005: pH									
pH Value	----	0.01	pH Unit		**5.71**	----	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**561**	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		<1	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		<1	----	----	----	----
ED038A: Acidity									
Acidity as CaCO3	----	1	mg/L		**36**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**253**	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: **EB1445146**	Page	: 1 of 4
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MS ALISON HENDRY	Contact	: Customer Services EB
Address	: PO BOX 943 WEST PERTH AUSTRALIA 6872	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: ahendry@srk.com.au	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 08 9288 2000	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Regis McPhillamy-Additionals- Reduced Suite-Leach 50	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 28-Oct-2014 10:11
C-O-C number	: ----	Date Analysis Commenced	: 29-Oct-2014
Sampler	: ----	Issue Date	: 04-Nov-2014 12:52
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

- **Insufficient sample volume available for Electical Conductivity, Alkalinity, Fluoride and Acidity analysis on samples Col 5 (MP27042) and Col 6 (MP26986).**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	Col 5 (MP27042)	Col 6 (MP26986)	----	----	----
			Client sampling date / time	[28-Oct-2014]	[28-Oct-2014]	----	----	----
Compound	CAS Number	LOR	Unit	EB1445146-001	EB1445146-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA047 Free Draining Leach Column								
ø **Leachate added**	----	0.01	mL	**300**	**300**	----	----	----
ø **Leachate collected**	----	0.01	mL	**230**	**250**	----	----	----
ø **Initial pH**	----	0.01	pH Unit	**6.34**	**6.40**	----	----	----
ø **Initial Electrical Conductivity**	----	1	µS/cm	**63.9**	**37.3**	----	----	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)			Client sample ID	**Col 5 (MP27042)**	**Col 6 (MP26986)**	**----**	**----**	**----**
			Client sampling date / time	[28-Oct-2014]	[28-Oct-2014]	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB1445146-001**	**EB1445146-002**	**--------**	**--------**	**--------**
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.91**	**6.87**	**----**	**----**	**----**

Appendix H: Tailings laboratory results

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1722190**	Page	: 1 of 7
Amendment	: **2**		
Client	: **SRK CONSULTING (AUSTRALASIA) PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RUSSEL STAINES	Contact	: Customer Services EB
Address	: Level 6 141 Queen St BRISBANE QLD 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 08 9288 2000	Telephone	: +61-7-3243 7222
Project	: ----	Date Samples Received	: 18-Oct-2017 11:30
Order number	: ----	Date Analysis Commenced	: 26-Oct-2017
C-O-C number	: ----	Issue Date	: 29-Dec-2017 15:36
Sampler	: ----		
Site	: ----		
Quote number	: BNBQ/228/16		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Ben Felgendrejeris		Brisbane Acid Sulphate Soils, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD

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ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Positive Cyanide results have been confirmed by re-extraction and re-analysis
- EG020-W (Water Leachable Metals by ICP-MS) were found to be higher than EG020-T (Total Metals by ICP-MS). This was confirmed by re-digestion and re-analysis
- EA031 (Saturated Paste pH): NATA accreditation does not cover the performance of this service.
- EA032 (Saturated Paste EC): NATA accreditation does not cover the performance of this service.
- Amendment (28/11/2017): This report has been amended and re-released to allow the reporting of additional analytical data.
- Amendment (21/12/2017): This report has been amended and re-released to allow the reporting of additional analytical data, specifically ANC analysis.
- ASS: EA013 (ANC) Fizz Rating: 0- None; 1- Slight; 2- Moderate; 3- Strong; 4- Very Strong; 5- Lime.

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)			Client sample ID	Fresh Comp	Transition Comp	Oxide Comp	----	----
			Client sampling date / time	25-Oct-2017 00:00	25-Oct-2017 00:00	25-Oct-2017 00:00	----	----
Compound	CAS Number	LOR	Unit	EB1722190-004	EB1722190-005	EB1722190-006	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.48**	**7.70**	**6.80**	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**565**	**91**	**45**	----	----
ED040W: Water Leachable Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	1	mg/L	**235**	**23**	**7**	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**16**	**3**	**2**	----	----
ED093W: Water Leachable Major Cations								
Calcium	7440-70-2	1	mg/L	**99**	**13**	**3**	----	----
Magnesium	7439-95-4	1	mg/L	**7**	<1	<1	----	----
Sodium	7440-23-5	1	mg/L	**1**	<1	**3**	----	----
Potassium	7440-09-7	1	mg/L	**1**	**1**	**1**	----	----
EG020W: Water Leachable Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	**0.49**	**0.23**	----	----
Antimony	7440-36-0	0.001	mg/L	**0.002**	**0.002**	<0.001	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	**0.010**	**0.011**	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Barium	7440-39-3	0.001	mg/L	**0.025**	<0.001	**0.002**	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0002**	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.002**	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	**2.20**	**0.009**	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Strontium	7440-24-6	0.001	mg/L	**0.630**	**0.018**	**0.002**	----	----
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: **LEACHATE** (Matrix: **WATER**)				Client sample ID	**Fresh Comp**	**Transition Comp**	**Oxide Comp**	**----**	**----**
				Client sampling date / time	25-Oct-2017 00:00	25-Oct-2017 00:00	25-Oct-2017 00:00	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**EB1722190-004**	**EB1722190-005**	**EB1722190-006**	**--------**	**--------**
					Result	Result	Result	----	----
EG020W: Water Leachable Metals by ICP-MS - Continued									
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	**----**	**----**
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	**----**	**----**
Boron	7440-42-8	0.05	mg/L		<0.05	<0.05	<0.05	**----**	**----**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	**0.06**	**----**	**----**
EG035W: Water Leachable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	**----**	**----**
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	<0.1	**0.3**	**----**	**----**

Analytical Results

Sub-Matrix: PULP (Matrix: SOIL)			Client sample ID	Fresh Comp	Transition Comp	Oxide Comp	----	----
			Client sampling date / time	25-Oct-2017 00:00	25-Oct-2017 00:00	25-Oct-2017 00:00	----	----
Compound	CAS Number	LOR	Unit	EB1722190-004	EB1722190-005	EB1722190-006	--------	--------
				Result	Result	Result	----	----
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.4	2.3	2.6	----	----
NAG (pH 4.5)	----	0.1	kg H2SO4/t	70.4	86.9	31.0	----	----
NAG (pH 7.0)	----	0.1	kg H2SO4/t	78.7	93.9	34.2	----	----
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	47.0	17.3	4.2	----	----
ANC as CaCO3	----	0.1	% CaCO3	4.8	1.8	0.4	----	----
Fizz Rating	----	0	Fizz Unit	2	1	0	----	----
EA031: pH (saturated paste)								
ø pH (Saturated Paste)	----	0.1	pH Unit	6.5	7.5	8.2	----	----
EA032: Electrical Conductivity (saturated paste)								
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	1070	459	229	----	----
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	5.52	4.81	1.78	----	----
EK025SF: Free CN by Segmented Flow Analyser								
Free Cyanide	----	1	mg/kg	<1	<1	<1	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	2	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	<1	----	----
Sample Preparation Method								
Amount	----	0.1	g	1.0	1.0	1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Fresh Composite - Leach Liquor	Transition Composite - Leach Liquor	Oxide Composite - Leach Liquor	----	----
				Client sampling date / time	25-Oct-2017 00:00	25-Oct-2017 00:00	25-Oct-2017 00:00	----	----
Compound	CAS Number	LOR	Unit		EB1722190-001	EB1722190-002	EB1722190-003	--------	--------
					Result	Result	Result	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		628	396	258	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		609	436	446	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		12	5	2	----	----
Magnesium	7439-95-4	1	mg/L		1	<1	<1	----	----
Sodium	7440-23-5	1	mg/L		440	436	365	----	----
Potassium	7440-09-7	1	mg/L		14	17	5	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		1.98	7.11	4.94	----	----
Antimony	7440-36-0	0.001	mg/L		0.102	0.029	0.023	----	----
Arsenic	7440-38-2	0.001	mg/L		0.606	0.089	0.072	----	----
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Barium	7440-39-3	0.001	mg/L		0.011	0.005	0.006	----	----
Bismuth	7440-69-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		0.0208	0.0229	0.0497	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	0.005	----	----
Cobalt	7440-48-4	0.001	mg/L		0.004	0.064	0.050	----	----
Copper	7440-50-8	0.001	mg/L		57.2	59.9	76.6	----	----
Lead	7439-92-1	0.001	mg/L		0.003	0.011	0.016	----	----
Manganese	7439-96-5	0.001	mg/L		0.009	0.006	0.009	----	----
Molybdenum	7439-98-7	0.001	mg/L		0.022	0.017	0.017	----	----
Nickel	7440-02-0	0.001	mg/L		0.201	0.158	0.228	----	----
Selenium	7782-49-2	0.01	mg/L		0.10	0.04	0.04	----	----
Silver	7440-22-4	0.001	mg/L		0.072	0.058	0.072	----	----
Strontium	7440-24-6	0.001	mg/L		0.241	0.080	0.067	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Vanadium	7440-62-2	0.01	mg/L		0.02	0.04	0.04	----	----
Zinc	7440-66-6	0.005	mg/L		11.4	7.34	4.53	----	----
Boron	7440-42-8	0.05	mg/L		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Fresh Composite - Leach Liquor	Transition Composite - Leach Liquor	Oxide Composite - Leach Liquor	----	----
				Client sampling date / time	25-Oct-2017 00:00	25-Oct-2017 00:00	25-Oct-2017 00:00	----	----
Compound	CAS Number	LOR	Unit		EB1722190-001	EB1722190-002	EB1722190-003	--------	--------
					Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued									
Iron	7439-89-6	0.05	mg/L		**3.97**	**1.03**	**0.51**	----	----
EK025SF: Free CN by Segmented Flow Analyser									
Free Cyanide	----	0.004	mg/L		**218**	**202**	**188**	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		**268**	**236**	**221**	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser									
Weak Acid Dissociable Cyanide	----	0.004	mg/L		**256**	**234**	**220**	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

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Amendment	: **2**		
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Telephone	: +61 08 9288 2000	Telephone	: +61-7-3243 7222
Project	: ----	Date Samples Received	: 18-Oct-2017 11:30
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C-O-C number	: ----	Issue Date	: 29-Dec-2017 15:36
Sampler	: ----		
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Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Ben Felgendrejeris		Brisbane Acid Sulphate Soils, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD

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When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Positive Cyanide results have been confirmed by re-extraction and re-analysis
- EG020-W (Water Leachable Metals by ICP-MS) were found to be higher than EG020-T (Total Metals by ICP-MS). This was confirmed by re-digestion and re-analysis
- EA031 (Saturated Paste pH): NATA accreditation does not cover the performance of this service.
- EA032 (Saturated Paste EC): NATA accreditation does not cover the performance of this service.
- Amendment (28/11/2017): This report has been amended and re-released to allow the reporting of additional analytical data.
- Amendment (21/12/2017): This report has been amended and re-released to allow the reporting of additional analytical data, specifically ANC analysis.
- ASS: EA013 (ANC) Fizz Rating: 0- None; 1- Slight; 2- Moderate; 3- Strong; 4- Very Strong; 5- Lime.

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)			Client sample ID	Fresh Comp	Transition Comp	Oxide Comp	----	----
			Client sampling date / time	25-Oct-2017 00:00	25-Oct-2017 00:00	25-Oct-2017 00:00	----	----
Compound	CAS Number	LOR	Unit	EB1722190-004	EB1722190-005	EB1722190-006	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.48**	**7.70**	**6.80**	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**565**	**91**	**45**	----	----
ED040W: Water Leachable Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	1	mg/L	**235**	**23**	**7**	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**16**	**3**	**2**	----	----
ED093W: Water Leachable Major Cations								
Calcium	7440-70-2	1	mg/L	**99**	**13**	**3**	----	----
Magnesium	7439-95-4	1	mg/L	**7**	<1	<1	----	----
Sodium	7440-23-5	1	mg/L	**1**	<1	**3**	----	----
Potassium	7440-09-7	1	mg/L	**1**	**1**	**1**	----	----
EG020W: Water Leachable Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	**0.49**	**0.23**	----	----
Antimony	7440-36-0	0.001	mg/L	**0.002**	**0.002**	<0.001	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	**0.010**	**0.011**	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Barium	7440-39-3	0.001	mg/L	**0.025**	<0.001	**0.002**	----	----
Bismuth	7440-69-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0002**	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L	**0.002**	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Manganese	7439-96-5	0.001	mg/L	**2.20**	**0.009**	<0.001	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Strontium	7440-24-6	0.001	mg/L	**0.630**	**0.018**	**0.002**	----	----
Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Uranium	7440-61-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: **LEACHATE** (Matrix: **WATER**)				Client sample ID	**Fresh Comp**	**Transition Comp**	**Oxide Comp**	**----**	**----**
				Client sampling date / time	25-Oct-2017 00:00	25-Oct-2017 00:00	25-Oct-2017 00:00	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**EB1722190-004**	**EB1722190-005**	**EB1722190-006**	**--------**	**--------**
					Result	Result	Result	----	----
EG020W: Water Leachable Metals by ICP-MS - Continued									
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	**----**	**----**
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	**----**	**----**
Boron	7440-42-8	0.05	mg/L		<0.05	<0.05	<0.05	**----**	**----**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	**0.06**	**----**	**----**
EG035W: Water Leachable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	**----**	**----**
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	<0.1	**0.3**	**----**	**----**

Analytical Results

Sub-Matrix: PULP (Matrix: SOIL)			Client sample ID	Fresh Comp	Transition Comp	Oxide Comp	----	----
			Client sampling date / time	25-Oct-2017 00:00	25-Oct-2017 00:00	25-Oct-2017 00:00	----	----
Compound	CAS Number	LOR	Unit	EB1722190-004	EB1722190-005	EB1722190-006	--------	--------
				Result	Result	Result	----	----
EA011: Net Acid Generation								
pH (OX)	----	0.1	pH Unit	2.4	2.3	2.6	----	----
NAG (pH 4.5)	----	0.1	kg H2SO4/t	70.4	86.9	31.0	----	----
NAG (pH 7.0)	----	0.1	kg H2SO4/t	78.7	93.9	34.2	----	----
EA013: Acid Neutralising Capacity								
ANC as H2SO4	----	0.5	kg H2SO4 equiv./t	47.0	17.3	4.2	----	----
ANC as CaCO3	----	0.1	% CaCO3	4.8	1.8	0.4	----	----
Fizz Rating	----	0	Fizz Unit	2	1	0	----	----
EA031: pH (saturated paste)								
ø pH (Saturated Paste)	----	0.1	pH Unit	6.5	7.5	8.2	----	----
EA032: Electrical Conductivity (saturated paste)								
ø Electrical Conductivity (Saturated Paste)	----	1	µS/cm	1070	459	229	----	----
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	5.52	4.81	1.78	----	----
EK025SF: Free CN by Segmented Flow Analyser								
Free Cyanide	----	1	mg/kg	<1	<1	<1	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	2	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	<1	----	----
Sample Preparation Method								
Amount	----	0.1	g	1.0	1.0	1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Fresh Composite - Leach Liquor	Transition Composite - Leach Liquor	Oxide Composite - Leach Liquor	----	----
				Client sampling date / time	25-Oct-2017 00:00	25-Oct-2017 00:00	25-Oct-2017 00:00	----	----
Compound	CAS Number	LOR	Unit		EB1722190-001	EB1722190-002	EB1722190-003	--------	--------
					Result	Result	Result	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		628	396	258	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		609	436	446	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		12	5	2	----	----
Magnesium	7439-95-4	1	mg/L		1	<1	<1	----	----
Sodium	7440-23-5	1	mg/L		440	436	365	----	----
Potassium	7440-09-7	1	mg/L		14	17	5	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		1.98	7.11	4.94	----	----
Antimony	7440-36-0	0.001	mg/L		0.102	0.029	0.023	----	----
Arsenic	7440-38-2	0.001	mg/L		0.606	0.089	0.072	----	----
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Barium	7440-39-3	0.001	mg/L		0.011	0.005	0.006	----	----
Bismuth	7440-69-9	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		0.0208	0.0229	0.0497	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	0.005	----	----
Cobalt	7440-48-4	0.001	mg/L		0.004	0.064	0.050	----	----
Copper	7440-50-8	0.001	mg/L		57.2	59.9	76.6	----	----
Lead	7439-92-1	0.001	mg/L		0.003	0.011	0.016	----	----
Manganese	7439-96-5	0.001	mg/L		0.009	0.006	0.009	----	----
Molybdenum	7439-98-7	0.001	mg/L		0.022	0.017	0.017	----	----
Nickel	7440-02-0	0.001	mg/L		0.201	0.158	0.228	----	----
Selenium	7782-49-2	0.01	mg/L		0.10	0.04	0.04	----	----
Silver	7440-22-4	0.001	mg/L		0.072	0.058	0.072	----	----
Strontium	7440-24-6	0.001	mg/L		0.241	0.080	0.067	----	----
Thallium	7440-28-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Thorium	7440-29-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Titanium	7440-32-6	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Vanadium	7440-62-2	0.01	mg/L		0.02	0.04	0.04	----	----
Zinc	7440-66-6	0.005	mg/L		11.4	7.34	4.53	----	----
Boron	7440-42-8	0.05	mg/L		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Fresh Composite - Leach Liquor	Transition Composite - Leach Liquor	Oxide Composite - Leach Liquor	----	----
				Client sampling date / time	25-Oct-2017 00:00	25-Oct-2017 00:00	25-Oct-2017 00:00	----	----
Compound	CAS Number	LOR	Unit		EB1722190-001	EB1722190-002	EB1722190-003	--------	--------
					Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued									
Iron	7439-89-6	0.05	mg/L		**3.97**	**1.03**	**0.51**	----	----
EK025SF: Free CN by Segmented Flow Analyser									
Free Cyanide	----	0.004	mg/L		**218**	**202**	**188**	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		**268**	**236**	**221**	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser									
Weak Acid Dissociable Cyanide	----	0.004	mg/L		**256**	**234**	**220**	----	----

MINERALS
TEST REPORT

CLIENT

REGIS RESOURCES LTD
PO Box 862
SUBIACO, W.A. 6904
AUSTRALIA

JOB INFORMATION

JOB CODE	: 1485.0/1900969
NO. SAMPLES	: 6
NO. ELEMENTS	: 43
CLIENT ORDER NO.	: R. STAINES (Job 1 of 1)
SAMPLE SUBMISSION NO.	:
PROJECT	: DR-049 - - - MCPTST-05
SAMPLE TYPE	: Various
DATE RECEIVED	: 25/01/2019
DATE REPORTED	: 07/02/2019
DATE PRINTED	: 07/02/2019

REPORT NOTES

TESTED BY

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This report relates specifically to the sample(s) tested that were drawn and/or provided by the client or their nominated third party to Intertek. The reported result(s) provide no warranty or verification on the sample(s) representing any specific goods and/or shipment. This report was 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.
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SIGNIFICANT FIGURES

It is common practice to report data derived from analytical instrumentation to a maximum of two or three significant figures. Some data reported herein may show more figures than this. The reporting of more than two or three figures in no way implies that figures beyond the least significant digit have significance.

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

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 be charged at cost. Current disposal cost is charged at $150.00 per m3.

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

LEGEND	X	= Less than Detection Limit	NA	=	Not Analysed
	SNR	= Sample Not Received	UA	=	Unable to Assay
	*	= Result Checked	>	=	Value beyond Limit of Method
	DTF	= Result still to come	+	=	Extra Sample Received Not Listed
	IS	= Insufficient Sample for Analysis			

ELEMENTS	Acidy	Ag	Al	As	B	Ba
UNITS	mgCaCO3/kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
DETECTION LIMIT	10	0.1	20	1	1	0.1
DIGEST		NAGx/	NAGx/	NAGx/	NAGx/	NAGx/
ANALYTICAL FINISH	/VOL	MS	OE	MS	OE	MS
SAMPLE NUMBERS						
0001 DR-049	X	X	X	633	69	0.6
0002 DR-050	X	X	23	30	73	0.4
0003 DR-052	X	X	28	27	65	0.8
0004 MCPTST-01	79500	X	4325	X	385	61.0
0005 MCPTST-03	116000	X	6136	X	199	54.5
0006 MCPTST-05	131500	X	4769	8	55	33.4
CHECKS						
0001 DR-050		X	23	30	12	0.4
STANDARDS						
0001 NAG Std 3		0.5	629	X	11	1.2
BLANKS						
0001 Control Blank		X	X	X	72	0.1

ELEMENTS	Be	Bi	CO3	Ca	Cd	Cl
UNITS	mg/Kg	mg/Kg	mgCaCO3/kg	mg/Kg	mg/Kg	mg/Kg
DETECTION LIMIT	0.1	0.01	1	10	0.1	50
DIGEST	NAGx/	NAGx/	NAGx/	NAGx/	NAGx/	NAGx/
ANALYTICAL FINISH	MS	MS	VOL	OE	MS	COL
SAMPLE NUMBERS						
0001 DR-049	X	X	0	6038	X	200
0002 DR-050	X	X	0	4817	X	150
0003 DR-052	X	X	0	7201	X	110
0004 MCPTST-01	X	X	0	11892	9.4	300
0005 MCPTST-03	X	X	0	12987	0.2	250
0006 MCPTST-05	X	X	0	15246	0.1	300
CHECKS						
0001 DR-050	X	X		4808	X	100
STANDARDS						
0001 NAG Std 3	0.2	X		5162	1.4	X
BLANKS						
0001 Control Blank	X	X		27	X	

ELEMENTS	Co	Cr	Cu	F	Fe	HCO3
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mgCaCO3/kg
DETECTION LIMIT	0.1	1	1	5	1	1
DIGEST	NAGx/	NAGx/	NAGx/	NAGx/	NAGx/	NAGx/
ANALYTICAL FINISH	MS	OE	OE	SIE	OE	VOL
SAMPLE NUMBERS						
0001 DR-049	-0.0	6	X	27	2	6600
0002 DR-050	0.0	2	X	11	X	5600
0003 DR-052	-0.0	5	X	15	1	4800
0004 MCPTST-01	16.7	6	589	25	6257	0
0005 MCPTST-03	18.3	X	528	36	6421	0
0006 MCPTST-05	21.1	X	800	36	11680	0
CHECKS						
0001 DR-050	-0.0	2	X		2	
STANDARDS						
0001 NAG Std 3	3.5	X	X		2660	
BLANKS						
0001 Control Blank	-0.0	2	X	5	4	

ELEMENTS	Hg	K	Mg	Mn	Mo	Na
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
DETECTION LIMIT	0.01	20	20	1	0.1	10
DIGEST	NAGx/	NAGx/	NAGx/	NAGx/	NAGx/	NAGx/
ANALYTICAL FINISH	MS	OE	OE	OE	MS	OE
SAMPLE NUMBERS						
0001 DR-049	0.10	2055	44	X	0.5	901
0002 DR-050	0.08	1000	43	X	0.5	851
0003 DR-052	0.08	2968	X	X	0.6	712
0004 MCPTST-01	1.21	4188	6080	3153	X	1400
0005 MCPTST-03	0.88	5647	4373	1285	X	1422
0006 MCPTST-05	1.15	4501	7075	1666	X	1343
CHECKS						
0001 DR-050	0.16	921	39	X	0.5	817
STANDARDS						
0001 NAG Std 3	0.21	1616	3659	774	X	265
BLANKS						
0001 Control Blank	0.03	X	X	X	X	270

ELEMENTS	NAGpH	Ni	OH	Pb	S	SO4
UNITS	NONE	mg/Kg	mgCaCO3/kg	mg/Kg	mg/Kg	mg/Kg
DETECTION LIMIT	0.1	1	1	2	10	30
DIGEST	NAGx/	NAGx/	NAGx/	NAGx/	NAGx/	
ANALYTICAL FINISH	MTR	OE	VOL	MS	OE	/CALC
SAMPLE NUMBERS						
0001 DR-049	8.0	X	0	X	3997	11976
0002 DR-050	7.9	X	0	X	2983	8936
0003 DR-052	7.8	X	0	X	5705	17090
0004 MCPTST-01	3.1	12	0	11	42282	126669
0005 MCPTST-03	2.7	10	0	6	54338	162785
0006 MCPTST-05	2.7	13	0	5	61712	184878
CHECKS						
0001 DR-050	7.9	X		X	2953	8847
STANDARDS						
0001 NAG Std 3	2.7	9		319	17215	51574
BLANKS						
0001 Control Blank	4.5	X		X	X	X

ELEMENTS	Sb	Se	Si	Sn	Sr	Th
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
DETECTION LIMIT	0.05	2	5	0.1	0.05	0.01
DIGEST	NAGx/	NAGx/	NAGx/	NAGx/	NAGx/	NAGx/
ANALYTICAL FINISH	MS	MS	OE	MS	MS	MS
SAMPLE NUMBERS						
0001 DR-049	1.82	X	571	X	19.26	X
0002 DR-050	0.21	X	297	X	9.44	X
0003 DR-052	0.30	X	313	X	11.60	X
0004 MCPTST-01	X	5	6120	X	119.61	X
0005 MCPTST-03	X	5	8621	X	112.82	0.05
0006 MCPTST-05	X	6	6505	0.1	155.37	0.06
CHECKS						
0001 DR-050	0.21	X	305	X	9.41	X
STANDARDS						
0001 NAG Std 3	X	X	1348	X	9.55	0.11
BLANKS						
0001 Control Blank	X	X	X	0.1	X	X

ELEMENTS	Ti	Tl	TotAlk	U	V	Zn
UNITS	mg/Kg	mg/Kg	mgCaCO3/kg	mg/Kg	mg/Kg	mg/Kg
DETECTION LIMIT	1	0.02	5	0.01	0.5	1
DIGEST	NAGx/	NAGx/		NAGx/	NAGx/	NAGx/
ANALYTICAL FINISH	OE	MS	/CALC	MS	OE	OE
SAMPLE NUMBERS						
0001 DR-049	X	X	6600	0.03	5.1	X
0002 DR-050	X	X	5600	0.03	5.7	X
0003 DR-052	X	X	4800	0.03	3.8	X
0004 MCPTST-01	X	0.04		0.13	X	2565
0005 MCPTST-03	X	0.08		0.09	2.9	23
0006 MCPTST-05	X	0.03		0.09	1.0	16
CHECKS						
0001 DR-050	X	X		0.03	5.1	X
STANDARDS						
0001 NAG Std 3	X	2.11		0.61	X	523
BLANKS						
0001 Control Blank	X	X		X	X	4

ELEMENTS	NAGeC
UNITS	uS/cm
DETECTION LIMIT	10
DIGEST	NAGx/
ANALYTICAL FINISH	MTR
SAMPLE NUMBERS	
0001 DR-049	378
0002 DR-050	295
0003 DR-052	453
0004 MCPTST-01	710
0005 MCPTST-03	1181
0006 MCPTST-05	1281

CHECKS	
0001 DR-050	295

STANDARDS	
0001 NAG Std 3	1481

BLANKS
0001 Control Blank

METHOD CODE DESCRIPTION

Method Code	Analysing Laboratory
/CALC	Intertek Genalysis Perth No digestion or other pre-treatment undertaken. Results Determined by calculation from other reported data.
/VOL	Intertek Genalysis Perth No digestion or other pre-treatment undertaken. Analysed by Volumetric Technique.
NAGx/COL	Intertek Genalysis Perth Net Acid Generation Extraction of samples with H2O2 Analysed by UV-Visible Spectrometry.
NAGx/MS	Intertek Genalysis Perth Net Acid Generation Extraction of samples with H2O2 Analysed by Inductively Coupled Plasma Mass Spectrometry.
NAGx/MTR	Intertek Genalysis Perth Net Acid Generation Extraction of samples with H2O2 Analysed with Electronic Meter Measurement
NAGx/OE	Intertek Genalysis Perth Net Acid Generation Extraction of samples with H2O2 Analysed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry.
NAGx/SIE	Intertek Genalysis Perth Net Acid Generation Extraction of samples with H2O2 Analysed by Specific Ion Electrode.
NAGx/VOL	Intertek Genalysis Perth Net Acid Generation Extraction of samples with H2O2 Analysed by Volumetric Technique.

MINERALS
TEST REPORT

CLIENT

REGIS RESOURCES LTD
PO Box 862
SUBIACO, W.A. 6904
AUSTRALIA

JOB INFORMATION

JOB CODE	: 1485.0/1819025
NO. SAMPLES	: 11
NO. ELEMENTS	: 46
CLIENT ORDER NO.	: R. STAINES (Job 1 of 1)
SAMPLE SUBMISSION NO.	:
PROJECT	: 0898 MP - 0899 MP
SAMPLE TYPE	: Various
DATE RECEIVED	: 11/12/2018
DATE REPORTED	: 15/01/2019
DATE PRINTED	: 15/01/2019

REPORT NOTES

TESTED BY

Intertek
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This report relates specifically to the sample(s) tested that were drawn and/or provided by the client or their nominated third party to Intertek. The reported result(s) provide no warranty or verification on the sample(s) representing any specific goods and/or shipment. This report was 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.
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SIGNIFICANT FIGURES

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

LEGEND					
	X	= Less than Detection Limit	NA	= Not Analysed
	SNR	= Sample Not Received	UA	= Unable to Assay
	*	= Result Checked	>	= Value beyond Limit of Method
	DTF	= Result still to come	+	= Extra Sample Received Not Listed
	IS	= Insufficient Sample for Analysis		

ELEMENTS	Ag	Al	ANC	As	As-Rp1	B
UNITS	ppm	%	kgH2SO4/t	ppm	ppm	ppm
DETECTION LIMIT	0.05	0.01	1	0.2	50	5
DIGEST	AR005/	AR005/	ANCx/	AR005/	4AH/	AR005/
ANALYTICAL FINISH	MS	OE	VOL	MS	OE	OE
SAMPLE NUMBERS						
0001 DR-048	0.57	2.40	61	8874.9		X
0002 DR-049	0.45	1.92	102	>1.00%	1.48%	X
0003 DR-050	0.18	2.76	65	1496.6		X
0004 DR-051	0.42	1.94	74	>1.00%	8465	X
0005 DR-052	0.21	2.34	72	2068.7		X
0006 DR-053	0.27	1.38	92	>1.00%	1.84%	X
0007 MCPTST-01	0.90	2.09	80	99.6		X
0008 MCPTST-02	0.46	1.88	73	415.4		X
0009 MCPTST-03	0.16	2.05	62	63.2		X
0010 MCPTST-04	0.30	1.57	72	173.9		X
0011 MCPTST-05	0.24	1.71	74	438.6		X
CHECKS						
0001 DR-051	0.41	1.98	72	>1.00%		X
STANDARDS						
0001 AMIS0147					367	
0002 ANC-3			98			
0003 NAG Std 3						
0004 OREAS 45e						
0005 PD-1						
0006 OREAS 921	0.19	2.38		6.1		X
BLANKS						
0001 Control Blank	X	X		X		X

ELEMENTS	Ba	Be	Bi	C	Ca	Cd
UNITS	ppm	ppm	ppm	%	%	ppm
DETECTION LIMIT	0.5	0.05	0.01	0.01	0.01	0.01
DIGEST	AR005/	AR005/	AR005/		AR005/	AR005/
ANALYTICAL FINISH	MS	MS	MS	/CSA	OE	MS
SAMPLE NUMBERS						
0001 DR-048	105.8	0.48	0.50	0.38	1.60	1.97
0002 DR-049	41.4	0.41	0.86	0.75	2.33	0.62
0003 DR-050	100.5	0.38	0.17	0.34	1.64	0.95
0004 DR-051	106.1	0.22	0.30	0.53	1.82	1.84
0005 DR-052	145.9	0.27	0.19	0.48	1.79	0.48
0006 DR-053	74.1	0.36	0.85	0.71	2.04	0.24
0007 MCPTST-01	69.8	0.14	0.29	0.76	1.40	10.22
0008 MCPTST-02	70.5	0.15	0.46	0.57	1.24	1.15
0009 MCPTST-03	61.5	0.13	0.66	0.40	1.35	0.21
0010 MCPTST-04	59.6	0.13	1.32	0.86	1.63	0.13
0011 MCPTST-05	53.8	0.13	1.24	0.93	1.66	0.13
CHECKS						
0001 DR-051	111.1	0.26	0.31	0.55	1.89	1.94
STANDARDS						
0001 AMIS0147						
0002 ANC-3						
0003 NAG Std 3						
0004 OREAS 45e				0.59		
0005 PD-1						
0006 OREAS 921	77.3	0.73	1.15		0.31	0.09
BLANKS						
0001 Control Blank	X	X	X	0.01	X	X

ELEMENTS	Co	ColourChange	Cr	Cu	EC	Fe
UNITS	ppm	NONE	ppm	ppm	uS/cm	%
DETECTION LIMIT	0.05	0	1	1	10	0.01
DIGEST	AR005/	ANCx/	AR005/	AR005/	Ws/	AR005/
ANALYTICAL FINISH	MS	QUAL	OE	OE	MTR	OE
SAMPLE NUMBERS						
0001 DR-048	24.12	Yes	636	190	510	5.30
0002 DR-049	24.45	Yes	612	150	525	4.85
0003 DR-050	22.83	Yes	528	171	497	5.61
0004 DR-051	21.02	Yes	619	172	411	4.72
0005 DR-052	19.28	Yes	572	152	434	4.74
0006 DR-053	22.96	Yes	554	110	466	4.24
0007 MCPTST-01	27.82	Yes	267	743	1153	7.59
0008 MCPTST-02	26.98	Yes	362	773	1096	7.49
0009 MCPTST-03	25.17	Yes	283	663	1300	7.59
0010 MCPTST-04	26.77	Yes	251	905	1175	7.87
0011 MCPTST-05	28.96	Yes	249	956	1039	8.92
CHECKS						
0001 DR-051	21.45	Yes	649	177	416	4.85
STANDARDS						
0001 AMIS0147						
0002 ANC-3						
0003 NAG Std 3						
0004 OREAS 45e						
0005 PD-1						
0006 OREAS 921	16.00		42	281		3.85
BLANKS						
0001 Control Blank	X		X	X	X	X

ELEMENTS	Final-pH	Fizz-Rate	Hg	K	Mg	Mn
UNITS	NONE	NONE	ppm	%	%	ppm
DETECTION LIMIT	0.1	0	0.01	0.01	0.01	1
DIGEST	ANCx/	ANCx/	AR005/	AR005/	AR005/	AR005/
ANALYTICAL FINISH	MTR	QUAL	MS	OE	OE	OE
SAMPLE NUMBERS						
0001 DR-048	1.8	1.0000000	X	0.41	1.12	952
0002 DR-049	1.8	2.0000000	0.19	0.50	1.85	1638
0003 DR-050	1.8	2.0000000	0.01	0.31	1.45	1133
0004 DR-051	1.7	2.0000000	0.04	0.50	1.05	929
0005 DR-052	1.6	2.0000000	0.01	1.35	1.19	1087
0006 DR-053	1.7	2.0000000	0.05	0.32	1.06	869
0007 MCPTST-01	1.6	1.0000000	0.59	0.85	1.54	3228
0008 MCPTST-02	1.5	1.0000000	0.11	0.80	1.56	2620
0009 MCPTST-03	1.5	2.0000000	0.11	1.08	1.13	1671
0010 MCPTST-04	1.5	1.0000000	0.07	0.86	1.10	1778
0011 MCPTST-05	1.5	1.0000000	0.06	0.96	1.15	1838
CHECKS						
0001 DR-051	1.7	2.0000000	0.04	0.51	1.07	969
STANDARDS						
0001 AMIS0147						
0002 ANC-3	1.3					
0003 NAG Std 3						
0004 OREAS 45e						
0005 PD-1						
0006 OREAS 921			0.01	0.40	1.13	555
BLANKS						
0001 Control Blank	1.1		X	X	X	X

ELEMENTS	Mo	MPA	Na	NAG	NAGpH	NAG(4.5)
UNITS	ppm	kgH2SO4/t	%	kgH2SO4/t	NONE	kgH2SO4/t
DETECTION LIMIT	0.02	1	0.01	1	0.1	1
DIGEST	AR005/		AR005/	NAGx/	NAGx/	NAGx/
ANALYTICAL FINISH	MS	/CALC	OE	VOL	MTR	VOL
SAMPLE NUMBERS						
0001 DR-048	9.62	37	0.11	0	7.9	0
0002 DR-049	5.14	36	0.10	0	8.2	0
0003 DR-050	7.69	16	0.11	0	8.6	0
0004 DR-051	5.21	30	0.11	0	8.6	0
0005 DR-052	7.97	26	0.10	0	8.5	0
0006 DR-053	6.31	44	0.10	0	8.7	0
0007 MCPTST-01	3.75	174	0.02	55	2.9	33
0008 MCPTST-02	6.07	178	0.02	86	2.6	65
0009 MCPTST-03	3.45	186	0.03	95	2.5	72
0010 MCPTST-04	4.57	193	0.02	101	2.6	76
0011 MCPTST-05	4.42	221	0.02	112	2.5	84
CHECKS						
0001 DR-051	5.59	30	0.11	0	8.5	0
STANDARDS						
0001 AMIS0147						
0002 ANC-3						
0003 NAG Std 3				24	2.5	19
0004 OREAS 45e		2				
0005 PD-1						
0006 OREAS 921	0.45		0.02			
BLANKS						
0001 Control Blank	0.08	X	X	5	4.3	0

ELEMENTS	NAPP	Ni	Pb	pH	pH Drop	S
UNITS	kgH2SO4/t	ppm	ppm	NONE	NONE	%
DETECTION LIMIT	1	1	0.1	0.1	0.1	0.01
DIGEST		AR005/	AR005/	Ws/	ANCx/	
ANALYTICAL FINISH	/CALC	OE	MS	MTR	MTR	/CSA
SAMPLE NUMBERS						
0001 DR-048	-24	300	208.5	8.6	3.1	1.20
0002 DR-049	-65	272	146.4	9.1	3.1	1.18
0003 DR-050	-49	238	67.9	8.8	3.1	0.53
0004 DR-051	-44	281	174.5	9.1	3.1	0.99
0005 DR-052	-46	268	31.1	9.5	3.1	0.84
0006 DR-053	-48	252	26.6	9.1	3.1	1.43
0007 MCPTST-01	94	132	59.2	8.3	3.2	5.70
0008 MCPTST-02	105	171	31.9	8.3	3.2	5.81
0009 MCPTST-03	124	127	20.0	7.9	3.2	6.09
0010 MCPTST-04	121	126	24.3	8.0	3.1	6.31
0011 MCPTST-05	147	118	23.9	8.3	3.2	7.23
CHECKS						
0001 DR-051	-42	293	177.4	9.1	3.1	0.98
STANDARDS						
0001 AMIS0147						
0002 ANC-3						
0003 NAG Std 3						
0004 OREAS 45e						0.05
0005 PD-1						
0006 OREAS 921		40	27.0			
BLANKS						
0001 Control Blank		X	X	5.6		0.01

ELEMENTS	S-SO4	Sb	Se	Sn	Sr	Th
UNITS	%	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	0.01	0.05	0.1	0.2	0.05	0.01
DIGEST	S71/	AR005/	AR005/	AR005/	AR005/	AR005/
ANALYTICAL FINISH	OE	MS	MS	MS	MS	MS
SAMPLE NUMBERS						
0001 DR-048	0.06	10.28	2.5	1.0	122.86	2.68
0002 DR-049	0.06	14.01	2.3	0.9	115.32	1.66
0003 DR-050	0.07	1.59	0.5	0.9	67.12	2.43
0004 DR-051	0.05	8.89	1.5	0.9	103.32	1.99
0005 DR-052	0.05	2.27	0.4	1.1	67.73	3.63
0006 DR-053	0.07	16.18	1.3	1.0	93.58	2.01
0007 MCPTST-01	0.25	1.83	7.9	0.4	161.10	0.75
0008 MCPTST-02	0.27	1.97	9.6	0.3	152.25	0.70
0009 MCPTST-03	0.30	1.93	6.1	0.3	125.88	0.67
0010 MCPTST-04	0.28	2.09	6.8	0.5	176.25	0.72
0011 MCPTST-05	0.26	2.19	7.5	0.3	172.86	0.62
CHECKS						
0001 DR-051	0.06	9.05	1.7	0.9	108.02	2.01
STANDARDS						
0001 AMIS0147						
0002 ANC-3						
0003 NAG Std 3						
0004 OREAS 45e						
0005 PD-1	4.29					
0006 OREAS 921		0.68	0.5	1.4	16.88	16.14
BLANKS						
0001 Control Blank	X	X	X	X	X	X

ELEMENTS	Ti	Tl	U	V	Zn	Zn-Rp1
UNITS	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION LIMIT	5	0.01	0.01	1	1	50
DIGEST	AR005/	AR005/	AR005/	AR005/	AR005/	4AH/
ANALYTICAL FINISH	OE	MS	MS	OE	OE	OE
SAMPLE NUMBERS						
0001 DR-048	1230	0.10	1.50	107	229	
0002 DR-049	981	0.28	0.60	123	125	
0003 DR-050	1893	0.06	0.97	130	164	
0004 DR-051	1189	0.13	0.87	106	196	
0005 DR-052	1992	0.35	1.33	92	96	
0006 DR-053	941	0.16	0.90	118	51	
0007 MCPTST-01	159	0.23	0.34	68	>2000	2354
0008 MCPTST-02	169	0.19	0.32	66	366	
0009 MCPTST-03	393	0.25	0.28	61	104	
0010 MCPTST-04	170	0.18	0.26	42	95	
0011 MCPTST-05	179	0.17	0.27	48	85	
CHECKS						
0001 DR-051	1227	0.12	0.90	108	202	
STANDARDS						
0001 AMIS0147						29.67%
0002 ANC-3						
0003 NAG Std 3						
0004 OREAS 45e						
0005 PD-1						
0006 OREAS 921	1068	0.15	2.12	25	125	
BLANKS						
0001 Control Blank	X	X	X	X	X	

METHOD CODE DESCRIPTION

Method Code	Analysing Laboratory NATA Laboratory Accreditation	NATA Scope of Accreditation
/CALC	Intertek Genalysis Perth **3244 3237** No digestion or other pre-treatment undertaken. Results Determined by calculation from other reported data.	
/CSA	Intertek Genalysis Perth **3244 3237** Induction Furnace Analysed by Infrared Spectrometry	**MPL_W043, CSA : MPL_W043**
4AH/OE	Intertek Genalysis Perth **3244 3237** Modified (for higher precision) multi-acid digest including Hydrofluoric, Nitric, Perchloric and Hydrochloric acids. Analysed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry.	**4AH/ : MPL_W003, OE : ICP_W004**
ANCx/MTR	Intertek Genalysis Perth **3244 3237** Acid Neutralizing Capacity Digestion Procedure. Analysed with Electronic Meter Measurement	
ANCx/QUAL	Intertek Genalysis Perth **3244 3237** Acid Neutralizing Capacity Digestion Procedure. Analysed by Qualitative Inspection	
ANCx/VOL	Intertek Genalysis Perth **3244 3237** Acid Neutralizing Capacity Digestion Procedure. Analysed by Volumetric Technique.	
AR005/MS	Intertek Genalysis Perth **3244 3237** 0.5 gram mini Aqua-Regia digest. Analysed by Inductively Coupled Plasma Mass Spectrometry.	
AR005/OE	Intertek Genalysis Perth **3244 3237** 0.5 gram mini Aqua-Regia digest. Analysed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry.	

METHOD CODE DESCRIPTION

Method Code	Analysing Laboratory NATA Laboratory Accreditation	NATA Scope of Accreditation
NAGx/MTR	Intertek Genalysis Perth **3244 3237**	Net Acid Generation Extraction of samples with H2O2 Analysed with Electronic Meter Measurement
NAGx/VOL	Intertek Genalysis Perth **3244 3237**	Net Acid Generation Extraction of samples with H2O2 Analysed by Volumetric Technique.
S71/OE	Intertek Genalysis Perth **3244 3237**	Digestion to eliminate sulphides. Analysed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry.
Ws/MTR	Intertek Genalysis Perth **3244 3237**	Water Extraction using a sample:water ratio of 1:5 or to client request. Analysed with Electronic Meter Measurement

MINERALS
TEST REPORT

CLIENT

REGIS RESOURCES LTD
PO Box 862
SUBIACO, W.A. 6904
AUSTRALIA

JOB INFORMATION

JOB CODE	: 1485.0/1819026
NO. SAMPLES	: 11
NO. ELEMENTS	: 45
CLIENT ORDER NO.	: R. STAINES (Job 1 of 1)
SAMPLE SUBMISSION NO.	:
PROJECT	: 0898 MP - 0899 MP
SAMPLE TYPE	: Solutions
DATE RECEIVED	: 11/12/2018
DATE REPORTED	: 17/01/2019
DATE PRINTED	: 17/01/2019

REPORT NOTES

TESTED BY

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	DTF	= Result still to come	+	= Extra Sample Received Not Listed
	IS	= Insufficient Sample for Analysis		

ELEMENTS	Acidy	Ag	Al	As	B	Ba
UNITS	mgCaCO3/L	ug/l	mg/l	ug/l	mg/l	ug/l
DETECTION LIMIT	0.2	0.1	0.1	1	0.1	0.5
DIGEST						
ANALYTICAL FINISH	/VOL	/MS	/OE	/MS	/OE	/MS
SAMPLE NUMBERS						
0001 DR MET 048	X	X	0.1	627	X	112.6
0002 DR MET 049	X	X	0.1	6090	X	99.4
0003 DR MET 050	X	X	0.2	359	X	139.1
0004 DR MET 051	X	0.2	0.2	4702	X	120.3
0005 DR MET 052	X	0.1	0.2	151	X	145.7
0006 DR MET 053	X	X	0.1	14666	X	105.7
0007 MCPTST01	4.2	0.2	0.3	10	X	88.7
0008 MCPTST02	X	0.2	0.5	15	0.1	131.5
0009 MCPTST03	X	0.2	0.3	2	X	87.5
0010 MCPTST04	9.6	X	0.4	3	X	82.4
0011 MCPTST05	X	X	0.3	76	X	77.0
CHECKS						
0001 DR MET 053	X	X	0.3	14904	X	106.9
STANDARDS						
0001 GWS-2						
0002 Acidity Std 2	X					
0003 No Standard found!!!						
0004 GWS-2						
0005 TMDW		2.0		82		51.2
0006 UNI 1			24.7		5.2	
0007 GLS-Brine1						
BLANKS						
0001 Control Blank	1.4	X	X	X	X	X

ELEMENTS	Be	Bi	CO3	Ca	Cd	Cl
UNITS	ug/l	ug/l	mgCaCO3/L	mg/l	ug/l	mg/l
DETECTION LIMIT	1	0.05	1	0.1	0.2	2
DIGEST						
ANALYTICAL FINISH	/MS	/MS	/VOL	/OE	/MS	/COL
SAMPLE NUMBERS						
0001 DR MET 048	X	X	32	141.6	X	265
0002 DR MET 049	X	X	X	154.1	X	269
0003 DR MET 050	X	X	14	219.2	X	307
0004 DR MET 051	X	0.13	37	268.5	X	321
0005 DR MET 052	X	0.08	19	190.1	X	272
0006 DR MET 053	X	X	36	223.5	X	318
0007 MCPTST01	X	X	X	496.2	X	305
0008 MCPTST02	X	0.13	13	496.8	X	1321
0009 MCPTST03	X	X	X	505.3	X	312
0010 MCPTST04	X	X	X	631.2	X	353
0011 MCPTST05	X	0.06	4	465.9	X	335
CHECKS						
0001 DR MET 053	X	X	36	225.4	X	
STANDARDS						
0001 GWS-2						
0002 Acidity Std 2			X			
0003 No Standard found!!!						
0004 GWS-2						
0005 TMDW	20	9.87			10.6	
0006 UNI 1				25.1		
0007 GLS-Brine1						119008
BLANKS						
0001 Control Blank	X	X	X	X	X	X

ELEMENTS	Co	Cr	Cu	EC	F	Fe-Sol
UNITS	ug/l	mg/l	mg/l	uS/cm	mg/l	mg/l
DETECTION LIMIT	1	0.1	0.1	10	0.1	0.1
DIGEST						
ANALYTICAL FINISH	/MS	/OE	/OE	/MTR	/SIE	/OE
SAMPLE NUMBERS						
0001 DR MET 048	55	X	0.5	2333	1.0	X
0002 DR MET 049	30	X	0.1	2830	1.4	X
0003 DR MET 050	96	X	X	3110	1.2	X
0004 DR MET 051	48	X	0.4	3360	1.1	X
0005 DR MET 052	30	X	1.7	2730	1.1	X
0006 DR MET 053	43	X	0.2	3310	1.3	X
0007 MCPTST01	63	X	X	4080	2.2	X
0008 MCPTST02	163	X	X	9490	3.9	X
0009 MCPTST03	41	X	X	4050	1.1	0.7
0010 MCPTST04	48	X	X	4370	1.0	X
0011 MCPTST05	45	X	0.1	4330	1.1	X
CHECKS						
0001 DR MET 053	45	X	0.2	3310	1.3	X
STANDARDS						
0001 GWS-2				331		
0002 Acidity Std 2						
0003 No Standard found!!!						
0004 GWS-2					0.6	
0005 TMDW	26					
0006 UNI 1		24.9	10.2			250.2
0007 GLS-Brine1						
BLANKS						
0001 Control Blank	X	X	X	X	X	X

ELEMENTS	HCO3	Hg	IonBal	K	Mg	Mn
UNITS	mgCaCO3/L	ug/l	%	mg/l	mg/l	mg/l
DETECTION LIMIT	5	1	0.01	1	0.1	0.1
DIGEST						
ANALYTICAL FINISH	/VOL	/MS	/CALC	/OE	/OE	/OE
SAMPLE NUMBERS						
0001 DR MET 048	98	X	18.75	38	15.5	X
0002 DR MET 049	134	X	14.62	47	13.8	X
0003 DR MET 050	128	X	15.54	47	17.0	X
0004 DR MET 051	142	X	13.86	58	10.8	X
0005 DR MET 052	112	X	18.15	43	13.1	X
0006 DR MET 053	163	X	15.99	58	13.9	X
0007 MCPTST01	195	X	8.91	78	28.5	0.3
0008 MCPTST02	399	X	12.48	304	142.4	0.4
0009 MCPTST03	156	X	7.53	74	25.9	0.4
0010 MCPTST04	149	X	7.67	98	40.5	0.5
0011 MCPTST05	174	X	8.67	110	32.5	0.3
CHECKS						
0001 DR MET 053	163	X	16.01	59	13.8	X
STANDARDS						
0001 GWS-2			0.00			
0002 Acidity Std 2	98		-100.00			
0003 No Standard found!!!			0.00			
0004 GWS-2			-100.00			
0005 TMDW		X	97.91			
0006 UNI 1			86.89	26	24.9	10.0
0007 GLS-Brine1			0.00			
BLANKS						
0001 Control Blank	X	X	-90.91	X	X	X

ELEMENTS	Mo	Na	Ni	OH	Pb	pH
UNITS	ug/l	mg/l	mg/l	mgCaCO3/L	ug/l	NONE
DETECTION LIMIT	0.5	1	0.1	5	5	0.1
DIGEST						
ANALYTICAL FINISH	/MS	/OE	/OE	/VOL	/MS	/MTR
SAMPLE NUMBERS						
0001 DR MET 048	6.3	381	X	X	X	8.5
0002 DR MET 049	6.7	511	X	X	X	8.3
0003 DR MET 050	9.1	539	X	X	X	8.4
0004 DR MET 051	10.7	591	X	X	X	8.7
0005 DR MET 052	6.7	474	X	X	X	8.7
0006 DR MET 053	16.5	644	X	X	X	8.8
0007 MCPTST01	12.9	698	X	X	X	8.2
0008 MCPTST02	38.7	2465	X	X	X	8.4
0009 MCPTST03	9.1	700	X	X	X	8.3
0010 MCPTST04	10.8	716	X	X	X	7.9
0011 MCPTST05	10.0	714	X	X	X	8.3
CHECKS						
0001 DR MET 053	15.7	646	X	X	X	8.8
STANDARDS						
0001 GWS-2						8.8
0002 Acidity Std 2				X		
0003 No Standard found!!!						
0004 GWS-2						
0005 TMDW	100.7				39	
0006 UNI 1		26	10.1			
0007 GLS-Brine1						
BLANKS						
0001 Control Blank	X	X	X	X	X	5.4

ELEMENTS	S	SO4	Sb	Se	Sn	Sr
UNITS	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l
DETECTION LIMIT	1	3	0.1	5	1	0.2
DIGEST						
ANALYTICAL FINISH	/OE	/CALC	/MS	/MS	/MS	/MS
SAMPLE NUMBERS						
0001 DR MET 048	243	727	11.9	22	X	959.6
0002 DR MET 049	347	1038	45.4	11	X	1145.6
0003 DR MET 050	388	1161	4.3	5	X	1060.6
0004 DR MET 051	449	1346	33.8	12	X	1492.4
0005 DR MET 052	317	949	11.0	X	X	1142.6
0006 DR MET 053	432	1295	49.9	7	X	1329.1
0007 MCPTST01	735	2201	6.3	38	X	3562.7
0008 MCPTST02	1758	5267	18.5	252	X	8590.3
0009 MCPTST03	774	2318	6.6	16	X	4195.7
0010 MCPTST04	895	2680	4.5	60	X	4919.1
0011 MCPTST05	750	2246	8.3	37	X	3804.1
CHECKS						
0001 DR MET 053	435	1302	50.1	8	X	1361.4
STANDARDS						
0001 GWS-2						
0002 Acidity Std 2						
0003 No Standard found!!!						
0004 GWS-2						
0005 TMDW			10.2	11	X	259.4
0006 UNI 1	25	76				
0007 GLS-Brine1						
BLANKS						
0001 Control Blank	X	X	X	X	X	X

ELEMENTS	Th	Ti	Tl	TotAlk	U	V
UNITS	ug/l	mg/l	ug/l	mgCaCO3/L	ug/l	mg/l
DETECTION LIMIT	0.05	0.1	0.1	5	0.05	0.1
DIGEST						
ANALYTICAL FINISH	/MS	/OE	/MS	/CALC	/MS	/OE
SAMPLE NUMBERS						
0001 DR MET 048	X	X	X	129	3.05	X
0002 DR MET 049	X	X	X	134	3.40	X
0003 DR MET 050	X	X	X	141	2.20	X
0004 DR MET 051	X	X	X	180	2.30	X
0005 DR MET 052	X	X	X	131	2.33	X
0006 DR MET 053	X	X	X	199	5.04	X
0007 MCPTST01	X	X	0.1	195	2.40	X
0008 MCPTST02	X	X	0.1	412	2.28	X
0009 MCPTST03	X	X	X	156	0.67	X
0010 MCPTST04	X	X	X	149	0.37	X
0011 MCPTST05	X	X	X	178	0.42	X
CHECKS						
0001 DR MET 053	X	X	X	199	5.10	X
STANDARDS						
0001 GWS-2						
0002 Acidity Std 2						
0003 No Standard found!!!				98		
0004 GWS-2						
0005 TMDW	X		9.8		9.83	
0006 UNI 1		9.8				10.1
0007 GLS-Brine1						
BLANKS						
0001 Control Blank	X	X	X	X	X	X

ELEMENTS	Zn	CN-Tot	CN-WAD
UNITS	mg/l	mg/l	mg/l
DETECTION LIMIT	0.1	0.5	0.5
DIGEST			
ANALYTICAL FINISH	/OE	/COL	/COL
SAMPLE NUMBERS			
0001 DR MET 048	0.5	0.8	0.8
0002 DR MET 049	0.5	0.8	0.8
0003 DR MET 050	0.3	X	X
0004 DR MET 051	X	0.6	0.6
0005 DR MET 052	0.3	1.2	1.0
0006 DR MET 053	X	0.6	0.6
0007 MCPTST01	X	0.6	0.6
0008 MCPTST02	X	0.6	0.6
0009 MCPTST03	X	1.6	X
0010 MCPTST04	X	0.8	0.8
0011 MCPTST05	X	1.0	X

CHECKS			
0001 DR MET 053	X	0.8	0.6

STANDARDS			
0001 GWS-2			
0002 Acidity Std 2			
0003 No Standard found!!!			
0004 GWS-2			
0005 TMDW			
0006 UNI 1	9.9		
0007 GLS-Brine1			

BLANKS			
0001 Control Blank	X	X	X

METHOD CODE DESCRIPTION

Method Code	Analysing Laboratory
/CALC	Intertek Genalysis Perth No digestion or other pre-treatment undertaken. Results Determined by calculation from other reported data.
/COL	Intertek Genalysis Perth No digestion or other pre-treatment undertaken. Analysed by UV-Visible Spectrometry.
/MS	Intertek Genalysis Perth No digestion or other pre-treatment undertaken. Analysed by Inductively Coupled Plasma Mass Spectrometry.
/MTR	Intertek Genalysis Perth No digestion or other pre-treatment undertaken. Analysed with Electronic Meter Measurement
/OE	Intertek Genalysis Perth Analysed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry.
/SIE	Intertek Genalysis Perth No digestion or other pre-treatment undertaken. Analysed by Specific Ion Electrode.
/VOL	Intertek Genalysis Perth No digestion or other pre-treatment undertaken. Analysed by Volumetric Technique.

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1906

COMPANY:	SRK Consulting Pty Ltd
ATTENTION:	Russell Staines
FROM:	Graeme Campbell
SUBJECT:	Gold Project (Victoria): Determination of **Oxygen-Consumption Rates (OCRs)** for Tailings-Solids Samples

NO. PAGES (including this page): 4 DATE: 15th February 2019

Russell,

The following pages document details of the OCR determinations undertaken for the six (6) samples of tailings-solids submitted for this study.

The OCR values are presented in laboratory reports at the end of this document.

Regards,

Dr GD Campbell
Director

1.0 SAMPLES

The following shows the bulk samples as-received and unpacked at GCA (Bridgetown).



2.0 PREPARATION FOR TESTING

The bulk samples had been dried at GLS (Maddington), and comprised both 'tailings-powder' and semi-hard large clumps of tailings.

The 'whole-tailings' were therefore pushed through a -2mm stainless-steel sieve. It did not take much physical effort to break-down the tailings-clumps during sieving.

3.0 MOISTURE-CONDITIONING FOR TESTING

The sieved tailings were sub-sampled and moistened using high-purity-deionised-water (HDPW) using a spray-bottle, as shown in the above photograph.

The HDPW was sprayed onto the tailings in a plastic-bowl, and the mix worked-over by hand to ensure uniform moistening. The HDPW was added in stages with hand-mixing between.

Addition of the HPDW, and hand-mixing, continued in this way until the moist tailings started to became 'just-clumpy'.

4.0 AGEING / EQUILIBRATION FOLLOWING MOISTENING

The moistened tailings samples were stored in sealed plastic-bags, and left to equilibrate for 2-3 days in a CT-room at *ca.* 20 ^{o}C.

The aged / moist tailings-solids were then placed in sealed cells in an incubator at 20.0 (+/- 0.1) ^{o}C.



5.0 RESULTS

The testwork results are presented in the attached laboratory-report.

Graeme Campbell & Associates Pty Ltd

Determination of Oxygen-Consumption Rates (OCRs)

	MCPTST-01	MCPTST-03	MCPTST-05	DR-049	DR-050	DR-052
Test Specifications and Conditions						
Moist-Solids (kg)	1.38	1.41	1.48	1.39	1.43	1.45
GWC (%)	**5.0**	**5.0**	**5.0**	**6.0**	**9.0**	**8.0**
Dry-Solids [DS] (kg)	1.31	1.34	1.41	1.31	1.31	1.34
Solids-SG	2.92	2.95	3.06	2.82	2.81	2.83
Dry-Solids Volume (L)	0.45	0.46	0.46	0.47	0.47	0.47
Pore-Fluid Volume (L)	0.07	0.07	0.07	0.08	0.12	0.11
Cell Volume (L)	1.15	1.15	1.15	1.15	1.15	1.15
Gas Volume [GV] (L)	0.63	0.63	0.62	0.61	0.57	0.57
GV/DS Ratio (L/kg)	0.48	0.47	0.44	0.46	0.43	0.42
Temperature (oC) [+/- 0.1]	**20.0**	**20.0**	**20.0**	**20.0**	**20.0**	**20.0**
Measurement with Quantek 901						
Reaction-Time (days)	**1.1**	**1.1**	**1.1**	**5.8**	**2.9**	**5.8**
Reaction-Time (hrs)	25.5	26	26	138	70	138
Measured O2-Conc. (%) [+/- 0.1]	**17.0**	**17.5**	**16.3**	**19.7**	**19.0**	**18.9**
O2-Consumption (%) [+/- 0.2]	3.9	3.4	4.6	1.2	1.9	2.0
O2-Consumption (mg O2)	32.9	28.4	37.9	9.7	14.3	15.1
OCR (kg O2/kg/s)	**2.73E-10**	**2.30E-10**	**2.93E-10**	**1.49E-11**	**4.32E-11**	**2.27E-11**

Notes:
GWC = Gravimetric-Water Content; SG = Specific-Gravity.
SG values provided by SRK.
The relative-error for the OCR value is estimated to be *ca.* 10-20 %.

Dr GD Campbell
15th February 2019

SRK Report Client Distribution Record

Project Number: REG017

Report Title: McPhillamys Gold Project: Geochemical Characterisation

Date Issued: 1 July 2019

Name/Title	Company
Wade Stephenson	Regis Resources Limited

Rev No.	Date	Revised By	Revision Details
0	20/04/2018	Russell Staines	Draft Report
1	07/06/2019	Russell Staines	Final Report
2	01/07/2019	Alex Watson	Amended Final Report

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