PRELIMINARY SITE INVESTIGATION

Leach Residue Storage Facility

Prepared for:

Department of Mines, Industry Regulation and Safety
100 Plain Street
East Perth
Western Australia 6004

SLR Ref: 675.11369.00000-R01
Version No: -v1.0
December 2018

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Department of Mines, Industry Regulation and Safety (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
675.11369.00000-R01-v1.0	19 December 2018	Greg Forster	Ned Connolly	Ruairi Hanly

ABBREVIATIONS

ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australian and New Zealand Governments
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ASC NEPM	National Environment Protection Council (1999, 2013 revision), National Environment Protection (Assessment of Site Contamination) Measure
ASLP	Australian Standard Leaching Procedure
ASS	Acid Sulphate Soils
DMIRS	Department of Mines, Industry Regulation and Safety
EIL	Ecological investigation levels
EPBC	Environmental Protection and Biodiversity Conversation
Eurofins	Eurofins Environment Testing Australia Pty Ltd
GIL	Groundwater Investigation Levels
ha	Hectare
HIL	Health-based Investigation Levels
IL	Investigation Level
km	Kilometres
LRSF	Leach Residue Storage Facility
LOR	Limit of Reporting
mbgs	Metres below ground surface
PSI	Preliminary Site Investigation
QA	Quality Assurance
QC	Quality Control
SLR	SLR Consulting Australia Pty Ltd
UXO	Unexploded Ordnance

EXECUTIVE SUMMARY

Department of Mines, Industry Regulation and Safety (DMIRS) commissioned SLR Consulting Australia Pty Ltd (SLR) to undertake a Preliminary Site Investigation (PSI) for the project area commonly referred to as Bulong (herein referred to as the "site"). The site was located within the dead mining tenement M25/97, approximately 40 kilometres (km) east of Kalgoorlie on the western shoreline of Lake Yindarlgooda.

An approval for mining Nickel / cobalt was issued in July 1996. The mining operations was carried out over several open pits, and ore was transferred to associated processing plant for high pressure acid leaching, solvent extraction and electrowinning. The tenement holders became insolvent in 2005, when mining ceased. The tenement expired in 2013 and the bond was called in during 2014. The project area was then selected by the Department of Mines, Industrial Regulation and Safety as one of four pilot sites to manage and / or rehabilitate in-line with the Abandoned Mines Policy.

SLR understands the objective of this PSI was to assess the site for potential sources of contamination and contaminants of concern, the receptors that may be exposed to contamination and the relevant pathways of contamination migration.

Two Areas of Interest (AoI) on the site were identified with the potential to contaminate soil and groundwater. Leach Residual Storage Facility (LRSF) and evaporation pond were identified as the likely sources of impact to the surrounding environment on site.

Fieldwork was undertaken on 6–7 November 2018 by experienced SLR representatives to validate any anecdotal and historical information and allow for the identification of any additional evidence of potential contamination. A total of 72 soil samples (including QC samples) were collected and analysed as part of this investigation. A further ten groundwater samples were collected with eight analysed.

Following a review of the analysis the main areas with elevated soil concentrations of Chromium and Nickel above the investigation levels (excluding samples taken from with both the LRSF and evaporation ponds) were mainly located to the East, South and South West of the LRSF, while the evaporation pond had exceedances all around the boundary. Concentrations of analytes in these areas were equivalent to concentrations of samples taken from both the LRSF and Evaporation Pond.

Analytical results for groundwater show elevated Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Zinc, Ammonia (as N), and Cyanide (total) all above associated IL's. Concentrations of each analyte varies across the site, while concentration within BMH06 located in the Evaporation Pond area has the highest concentrations of Ammonia, Cadmium, Cobalt, Copper, Lead, Nickel and Zinc.

The investigation also indicated that the materials in both areas (LRSF and Evaporation Ponds) are unsuitable for supporting vegetation. This is due to very high salinity levels (LRSF conductivity 4,300 to 15,000 uS/cm and Evaporation Ponds 11,000 to 18,000 uS/cm), very high sodicity (LRSF Exchangeable Na 15% to 46% and Evaporation Ponds 54% to 81%) and very low organic carbon (LRSF < 0.4% and Evaporation Ponds < 0.2%). Also, the materials have a very coarse texture (low clay content).

The concentration of analytes identified a number of potential complete exposure pathways. They were:

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- As dust deposition is evident across the site, the potential for this dust to migrate and potentially impact on / off site recreational users via inhalation is seen as a potential complete exposure pathway. This pathway will require further airborne dust deposition assessment to assess the impact of this potential exposure pathway.
- Dust deposition has also the potential to impact the marine water ecosystems of Lake Yindarlgooda and on / off-site environmental receptors (vegetation and livestock) through bioaccumulation (including biomagnification and/or bioconcentration), thus completing a potential exposure pathway.
- Dermal contact and incidental ingestion resulting in potential exposure to Chromium and Nickel detected within the soil across the site was considered a potentially complete exposure pathway. In its current state, Chromium and Nickel containing soil material has the potential to pose an unacceptable risk to users of the area as public open space / recreational use.
- Absorption of metal contaminants (Chromium and Nickel in exceedance of the derived EILs) by current and future on-site vegetation was considered a potentially complete exposure pathway. A potentially complete exposure pathway between possible leachable material and current / future vegetation. Furthermore, off-site migration of impacted soils and ore material (via surficial hydraulic flow) has the potential to allow for the absorption of these metal contaminants to adversely impact off-site terrestrial vegetation.
- Chromium and Nickel impacted soil has the potential to pose an unacceptable risk to the nearby marine environment should surface water migration create a potentially complete exposure pathway. Given the widespread nature of the Chromium and Nickel impacted soil, surface water flow across site should be controlled and monitored for sediment loading during any future development works.
- The bioaccumulation and bioconcentration of dissolved metal contaminants within marine biota is considered a potentially complete exposure pathway. Given the widespread nature of the groundwater impact and the proximity of impacted monitoring wells to the surrounding marine environment, migration of impacted groundwater to said marine environment was considered plausible.

Note that should site conditions change or further information pertaining to the contamination status of the site be identified, then review of this CSM would be warranted.

From the soil and groundwater assessment undertaken it appears that both the redundant LRSF and Evaporation ponds have impacted the surrounding environment through migration of the tailings via dust deposition, sedimentation and groundwater migration. As a result of these impacts the following is recommended;

- Secure site to limit access to inducted personnel.
- A groundwater monitoring event on all wells onsite should be carried out. This should include an investigation into the integrity of the wells to ensure that the wells are undamaged, and suitable for continued monitoring.
- Airborne dust deposition assessment to assess the impact of dust arising from the LRSF and Evaporation Ponds.

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- Discuss findings with Department of Environment Regulation to investigate if the site should be placed on the Contaminated Sites Register.

This Preliminary Site Investigation report must not be reproduced except in full and must be read in conjunction with the Limitations outlined in Section 8 of this report. This report was also prepared using a scope that was developed in conjunction with DMIRS including the scope of the PSI, soil / groundwater assessment and identification of contaminants of concern.

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1 Introduction

Department of Mines, Industry Regulation and Safety (DMIRS) commissioned SLR Consulting Australia Pty Ltd (SLR) to undertake a Preliminary Site Investigation (PSI) incorporating a limited soil and groundwater investigation for the project area commonly referred to as Bulong (herein referred to as the "site"). The site was located within the dead mining tenement M25/97, approximately 40 kilometres (km) east of Kalgoorlie on the western shoreline of Lake Yindarlgooda (Refer to **Figure 01** in **Appendix A**). The site included approximately 840 hectares (ha) of land that had been chosen by DMIRS to be rehabilitated and/or managed as part of the departments Abandoned Mines Program.

SLR understands the site was previously a component of shallow open pit mining and processing of nickel/cobalt undertaken by Bulong Nickel Operations Pty Ltd and Bulong Nickel Pty Ltd. The processing component of the operation utilised sulphuric acid, ammonia, hydrochloric acid and quicklime to extract a saleable product, before a leach residual waste was transferred to the sites Leach Residue Storage Facility (LRSF) and evaporation pond on the shoreline of Lake Yindarlgooda. SLR also understands that previous laboratory testing of process water returned elevated levels of magnesium, sulphate and nickel (compared to ambient groundwater), and that a controlled release into Lake Yindarlgooda was approved on at least one occasion.

The Bulong Project Plan (DMIRS, 2018b) provided a summary of activities that led to the sites inclusion in the DMIRS Abandoned Mine Program and included the following.

- 1992- Mining lease approved under the Mining Act 1978;
- 1999- Bulong Nickel Operations Pty. Ltd. and Bulong Nickel Pty. Ltd acquire project and commence mining;
- 2003- Temporary closure plan issued to site;
- 2005- Tenement holders became insolvent;
- 2010- Direction to Modify issued in relation to 'dusting of the environment';
- 2013- Expiration of Mining Lease; and
- 2014- Tenancy bond called.

Based on the above, it is understood that the rehabilitation associated with the Bulong project area was considered a State liability by DMIRS, and the tenement bond was not expected to cover the entire expense of full site closure. It was understood that DMIRS required a management and remediation plan for site with the aim of enhancing the potential for future beneficial land use at the site. At this stage, a PSI will assist the project by filling the high-level knowledge gaps that were identified during a previous risk assessment of the projects potential environmental and safety hazards.

1.1 Objectives

The objective of this PSI was to assess the site for potential sources of contamination and contaminants of concern, the receptors that may be exposed to contamination and the relevant pathways of contamination migration.

1.2 Scope of Works

The following scope of work undertaken at the Bulong project area is in general accordance with the National Environment Protection Council (2013) National Environment Protection (Assessment of Site Contamination) Amendment Measure and the Standards Australia (AS4482:2005) Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil.

1.2.1 Preliminary Site Investigation

The Preliminary Site Investigation (PSI) provides background searches to assess historical land use and the potential for those land uses to have resulted in contamination. The PSI included the following.

Records review, comprising a review of the following information where it was available publicly:

- historical aerial photographs;
- site layout plans and previous investigation reports (where available);
- service plans ("dial before you dig" search);
- State groundwater database; and
- publicly available topographic, geological and hydrogeological maps.

A site walk over and physical inspection, comprised of the following:

- confirmation of current site layout and uses of the property;
- identification of current and historical (where possible) uses of adjoining properties and potentially sensitive receptors nearby; and
- check for visual signs of ground contamination.

1.2.2 Limited Soil and Groundwater Investigation

The limited soil and groundwater investigation included a judgemental sampling program that targeted areas with the highest potential for contamination that were identified as part of the PSI. The limited sampling program will aim to identify if contamination is present at the site.

A judgemental sampling pattern (Section 6.4.4 of AS4482) was employed by utilising existing site background information and site inspection results to target areas with the highest potential for contamination. A total of 39 sampling locations were targeted to assess for potential contamination.

2 Background Information

2.1 Site identification

The site was located on the western shoreline Lake Yindarlgooda and approximately 5 km east of the decommissioned Bulong Nickel processing plant (refer to **Figure 01** in **Appendix A**). The site existed as part of the dead tenement M25/97 and was identified by the City of Kalgoorlie-Boulder to exist within a rural land zone (City of Kalgoorlie-Boulder, 2018).

As of November 2018, the southern section of the site was the within the ephemeral basin of Lake Yindarlgooda. The northern section of site included the LRSF (approximately 48 ha) and evaporation pond (approximately 20 ha) that were residual features of the decommissioned Bulong Nickel operation (Kinhill Engineers, 1996b).

A summary of the property identification information is detailed below in **Table 1**.

Table 1 Summary of property information

Site Information	Details	
Site Address	Bulong Road, Bulong	
Lot Plan Number	N049710	
Site Area	Approximately 840 ha	
Current Land Use	Dead Mining Lease M25/97	
Current Zoning	Rural	
Local Government	City of Kalgoorlie-Boulder	
Central GPS Coordinates (Geocentric Datum of Australia 1994)	Latitude: -30.700915° Longitude: 121.880522°	Zone: 51J Easting: 392792.46 Northing: 6603008.66

2.1.1 Proposed Future Land Use

In the local planning scheme of the City of Kalgoorlie-Boulder Scheme No.1 it is designated as Rural. Following a review of the City of Kalgoorlie-Boulder Local Planning Scheme No.1, rural is defined as:

a. To provide for the development of rural activity as appropriate.

b. To provide for the development of mining activity as appropriate.

c. To protect land from urban uses that may jeopardise the future use of that land for priority mining and rural uses.

d. To accommodate the development of isolated communities including Aboriginal and railway settlements.

At the time of this investigation, information relating to proposed future land use of site was unavailable. It was assumed that future land use proposals will be reliant on the results of this PSI and future detailed site investigation, site management or remedial works (if required).

2.1.2 Surface and Subsurface Infrastructure

At the time of this investigation, the following surface infrastructure was observed on site:

- LRSF.
- Tailings spigot discharge system.
- Evaporation Ponds.
- Decant structure.
- Underdrainage solution pond.
- Toe drain.
- Access Track.

Descriptions have been compiled with reference to previous investigations (Soilwater Consultants, 2017). Refer to **Table 2** for a summation of surface infrastructure and **Appendix C** for the site photography log. The layout of the surface infrastructure is shown in **Figure 2**.

Table 2 Summary of site surface infrastructure

Infrastructure	Location	Description
Leach Residue Storage Facility (LRSF)	Tenement M25/97. East of the Bulong processing plant.	Single cell storage facility. Construction of LRSF walls involved multiple lifts using stony scree and lake sediments. The embankment wall varies in height; <1 m along the north western section and up to approximately 8 m along the south eastern section. Total LRSF area of approximately 48 ha, while the tailings surface was approximately 42 ha. The LRSF floor follows local topography sloping from the northwest to the southeast.
Tailings spigot discharge system	Pipework along the Internal banks of LRSF.	Approximately 300 mm diameter poly pipe. Leach residue was discharged from the pipes into the LRSF. The pipes were regularly cycled around the storage facility to develop even beaches that slope towards the centre of the LRSF.
Decant structure	Approximately 50 m along the LRSF pontoon that extends from the west wall of the LRSF.	Raised cement structure, approximately 2 m in diameter and 1 m from ground level. Water from LRSF flowed into the decant tower/internal riser and through an outfall pipe to the external settling pond. From there the water was pumped to the evaporation pond.
Underdrainage solution pond	Along the southern embankment of LRSF.	The underdrainage solution pond was poly lined and fenced. The inlet was located on the northern bank of pond. Approximate total area of 0.02 ha.
Toe Drain	Perimeter of LRSF at base of external embankment walls.	Drainage network around perimeter of LRSF.
Access track	Southwest to northeast orientation of main track. Additional tracks appear to run south towards the evaporation ponds.	Tracks appear graded but unsealed.

A review of the Dial Before You Dig (DBYD) service plans was conducted to identify underground services on site. Refer to **Table 3** for a summary of the DBYD search results and **Appendix D** for the service owner reports. It must be noted that site based underground service schematics were not available at the time of this assessment.

Table 3 Summary of Dial Before You Dig search results

Service Owner	Service	Description
Water Corporation	Underground water pipelines	No underground pipes were identified. The owner stated although the search returned no results, pipes may still exist in the work area.
Western Power	Underground and overhead network assets	No assets in the vicinity of the scope of enquiry. Private assets not included in results.
Telstra	Telecommunications infrastructure	No assets identified. Note that the actual location of any network assets may differ significantly from the position shown on plans provided by owner.

2.2 Surrounding Environment

2.2.1 Surrounding Land Uses and Activities

A summary of the properties adjacent to the site at the time of this assessment is detailed in **Table 4**.

Table 4 Summary of surrounding land uses

Direction	Description
North	The landscape to the north of site appears to be a sparsely vegetated plateau that borders the shoreline of Lake Yindarlgooda. A drainage line is located approximately 2 km to the north of site. An access track can be observed approximately 7 km away from site that is orientated approximately southwest to northeast direction. The track appears to connect an area cleared of vegetation (approximately 12 km to the north) to the ore processing facility east of site.
South	Lake Yindarlgooda extends to the south of site.
East	Lake Yindarlgooda extends to the east of site.
West	The mining industrial area of the Bulong operation is located approximately 5km to the west of site. What appears to be a sparsely vegetated plateau intersected by drainage lines can be observed further west of the mining industrial area.

2.2.2 Regional Geology

A review of *AUSGIN Interactive Geological Units Map* (Geoscience Australia, 2018) indicated that the strata that underlays site consisted of the following lithostratigraphic units:

- The northern section of site was underlain by metamorphosed felsic igneous rocks from the Mesoarchean era. The formation is described as metamorphosed feldspar porphyry and undifferentiated felsic volcanic rocks that consist of quartz-feldspar schist and quartz-muscovite schist derived from felsic volcanic rock or granite.
- The southern section of site was underlain by lake and swamp deposits from the Quaternary period of the Cenozoic era. The lake deposits are comprised of mud, silt, evaporites, limestone, minor sand, and peat.

Furthermore, with reference to the *Characteristic Soils of Western Australia Map* (Department of Agriculture and Food, 2003), the soil landscape of the site was characterised by shallow calcareous loams (and calcareous loamy earths).

2.2.3 Region Hydrogeology

A review of the *Hydrogeology of the Kurnalpi 1:250 000 Sheet* and *Explanatory Notes* (Kern, A. M., 1996) indicated that the site and its immediate surrounds are part of the Kurnalpi region of Western Australia. The Kurnalpi region was described as generally underlain by weathered and fractured Archaean bedrock overlain by paleochannel deposits and widespread alluvium and lake deposits (Kern, A. M., 1996). Groundwater levels across the region were reported to range between 1–50 meters below ground surface (mbgs) with a tendency to flow towards locations characterised by shallow groundwater tables such as palaeo-drainage channels and modern playa lakes. It is therefore inferred that the groundwater at site would be shallow, with a easterly flow towards Lake Yindarlgooda.

2.2.4 Regional Hydrology

The Bulong region was located in the Raeside-Ponton catchment of the Salt Lake Basin (1204) and Western Plateau Division (DPIRD, 2018). The Karlgoolie-Boulder airport recorded average yearly rain of 267 mm, however totals were unpredictable with yearly maximums ranging from 74 mm- 308 mm/yr (Bureau of Meteorology, 2018).

The surface hydrology of the site was characterised by Lake Yindarlgooda, isolated creek lines, and diffuse ephemeral drainage lines (Soil and Rock Engineering, 2002). Lake Yindarlgooda extended west from the site over approximately 338 km^2 and forms a drainage basin for the undulating landscape that surrounds the lake (Soil and Rock Engineering, 2002). A review of aerial imagery (Google, 2018) also indicated four apparent ephemeral drainage lines entering Lake Yindarlgooda within approximately 3 km of the LRSF on site.

2.2.5 Regional Topography

The site was located on the west bank of Lake Yindargooda, approximately 5 km east of the Bulong mining industrial area. A review of the topographic and drainage map provided within the *Hydrogeology of the Kurnalpi 1:250 000 Sheet* and *Explanatory Notes* (Kern, A. M., 1996) indicated the site topography ranged from 300–350 metres Australian Height Datum (mAHD). The LRSF was located on a section of land with a low relief that sloped between 1–5 degrees towards the shoreline of Lake Yindargooda (Kinhill Engineers, 1996b).

2.2.6 Registered Groundwater Bore Information

A review of the GeoView Drillhole Database (DMIRS, 2018c) was undertaken to identify bores within approximately 2 km of the site. The search identified numerous mineral exploration bores however bore logs that described subsurface conditions were unavailable.

2.2.7 Acid Sulphate Soils

Acid Sulphate Soils (ASS) are a characteristic natural feature of lowland coastal environments in Western Australia, particularly where landform elevations are below 5 mAHD. ASS contains highly reactive iron sulphides generally in the form of framboidal pyrite. ASSs are benign when in a waterlogged state. However, when these soils are drained or excavated, oxygen from the atmosphere reacts with the iron sulphides in the soil resulting in the production of sulphuric acid and the potential release of metal compounds from disturbed soils.

A review of the Natural Resources Information Interactive Map (DMIRS, 2018c) indicated that the site and its immediate surrounds were not at risk of being impacted by ASS.

2.2.8 Environmental Values

The immediate surrounds of the site support pastoral land adjacent to Lake Yindarlgooda. Lake Yindarlgooda is an ephemeral salt lake. The site may be considered to support biodiversity value due its location within and across the boarder of the Great Western Woodlands (GWW). The GWW currently does not support a significant conservation status, however is under consideration for listing for conservation status under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act). The former Department of Parks and Wildlife (DPAW), now Department of Biodiversity Conservation and Attractions (DBCA), released the Biodiversity and Cultural Conservation Strategy for the GWW in 2010 delineating the GWW area including a portion of the site.

A review of the *Protected Matters Search Tool* (Department of Environment and Energy, 2018) confirmed Matters of National Environmental Significance (MNES) relevant to the site as defined under the EPBC Act. The Protected Matters Report (Appendix E) was reviewed to summarise (**Table 5**) the MNES occurring on, or related to site and its surrounds.

Table 5 MNES within 10 km radius from the site.

Details	May occur	Likely to occur	Known to occur	Total
Threatened Species	3	2	1 (Bead Glasswort)	6
Migratory Species	6	1	0	7
Marine Species	8	3	1 (Hooded Plover)	12
Total	17	6	2	25

Western Australian biodiversity values known to DBCA relevant to the *Wildlife Conservation Act* 1950 and *Biodiversity Conservation Act* 2016 (WA) (BC Act) are recorded in Nature Map, a data warehouse publicaly available. A NatureMap search conducted on 16 January 2019 (Appendix E) identified the following two conservation significant species within a 5 km radius of the site:

- One Priority 1 flora (Tecticornia flabelliformis), 4km south of site
- One Priority 4 fauna (Hooded Plover, Hooded Dotterel) adjacent to the site.

No recognised Threatened or Priority Ecological Communities are within 15 km of the site. No defined Environmental Sensitive Areas are located within 20 km. One DBCA tenure site Bullet Hole (14km to North) and a timber reserve DBCA managed state forest 40 km south.

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3 Site History

3.1 Nickel/Cobalt Mining at the Site

An approval for mining Nickel / cobalt was issued in July 1996. The mining operations was carried out over several open pits, and ore was transferred to associated processing plant for high pressure acid leaching, solvent extraction and electrowinning. The tenement holders became insolvent in 2005, when mining ceased. The tenement expired in 2013 and the bond was called in during 2014. The project area was then selected by the Department of Mines, Industrial Regulation and Safety as one of four pilot sites to manage and / or rehabilitate in-line with the Abandoned Mines Policy.

3.2 Contaminated Site Database

A review of the Department of Water and Environmental Regulation *Contaminated Sites Database* (DWER, 2018) was undertaken on 2 October 2018 and indicated the site was not listed as a known contaminated site. It should be noted the *Bulong Project Plan* states the site was listed on the Contaminated Sites Database as 'awaiting classification' (DMIRS, 2018b). Refer to **Appendix F** for a copy of the *Contaminated Sites Database* search results.

3.3 Cultural Heritage

A review of the *Aboriginal Heritage Inquiry System* (DPLH, 2018) indicated that 14 registered Aboriginal sites were located within approximately 15km of site. Refer to **Appendix G** for the details of areas of Aboriginal Heritage significance on and surrounding the site.

An archaeological survey of the site was also undertaken by Quartermaine Consultants in December 1996. Three sites of archaeological significance were identified in proximity to the LRSF, whilst another 13 sites were located near the evaporation ponds (Quartermaine Consultants, 1996). As reported with the *Bulong Project Plan* (DMIRS, 2018b), the Maduwongga people registered a native title claim in August 2017.

3.4 Historical Aerial Photographs and Satellite Imagery

A review of *Google Earth* historical aerial imagery (Google, 2018) was undertaken to provide supporting evidence of past and present land uses and activities undertaken on and surrounding site. **Table 6** below provides a summary of the historical aerial and satellite imagery review. Refer to **Appendix H** for the aerial photographs referenced below.

Table 6 Summary of historical and aerial imagery review

Year	Description of Site	Description of Surrounding Land
1984	The area where the LRSF and evaporation ponds were to be constructed appeared undisturbed. White surface colouration was observed along the western shoreline of Lake Yindarlgooda.	The land that surrounded site appeared undisturbed. Access tracks were observed to the southwest and northwest of site. Green and brown colouration was also observed on the surface of Lake Yindarlgooda to the east of site.

Year	Description of Site	Description of Surrounding Land
1994	The area where the LRSF and evaporation ponds were to be constructed appeared undisturbed. White surface colouration had increased along the western shoreline of Lake Yindarlgooda. Areas of green surface colouration were no longer observable.	No significant change from previous imagery except the construction of additional access tracks located southwest of site.
1997	The area where the LRSF and evaporation ponds were to be constructed appears undisturbed. The white colouration within Lake Yindarlgooda appeared to have dissipated. Excluding the surface characteristics of Lake Yindarlgooda, there was no significant change from previous imagery.	Land clearance was observed at the location where the mining industrial area/processing plant will be constructed. Additional access tracks were constructed.
1999	The LRSF and evaporation pond was constructed on the shoreline of Lake Yindarlgooda. Surface water was observed within the LRSF and evaporation pond. An access track connected the LRSF to operation facilities to the west. Brown surface colouration was observed to spread from the south east corner of the LRSF into Lake Yindarlgooda. Green surface colouration was observed along the west shoreline of Lake Yindarlgooda, extending approximately 6km to the east and south of the LRSF. The LRSF appeared to be the central point to the green colouration.	Further land clearance was observed at the location of the mining industrial area/processing plant (west of site). Infrastructure was also constructed. Access tracks extended to the north, east, and south of this location.
2001	Surface water was observable in the LRSF and the evaporation ponds. The north west corner of the LRSF appeared to have been extended and an additional cell was added to the evaporation ponds. Brown surface colouration was observed to spread from the south east corner of the LRSF. This appeared to be surface run-off into Lake Yindarlgooda. The white surface colouration was observed to extend south along the western shoreline of Lake Yindarlgooda for approximately 3km.	Further land clearance was observed at the location of the mining industrial area/processing plant (west of site). Additional access tracks were constructed that connected the newly cleared land to existing infrastructure.
2003	Surface water was observed in the northern cell of the evaporation ponds. White surface colouration was observed to spread from the LRSF and around the evaporation ponds and extended over the west shoreline of Lake Yindarlgooda to approximately 3km south of the LRSF.	Further clearance of land in the general region of the mining industrial area/processing plant (west of site) and additional installation of infrastructure was observed. The site that is south of the main processing plant appeared to be storing surface water.
2005	The LRSF appeared dry. The brown surface colouration was no longer observed to extend south-east from the LRSF. The area of white surface colouration that was observed around the evaporation ponds and over the west shoreline of Lake Yindarlgooda in 2003 appeared to be retreating to the east. The evaporation pond's surface appeared to be a white colour that was consistent with the colouration observed in previous years along the west shoreline of Lake Yindarlgooda.	No significant change to the mining industrial area/processing plant was observed. Surface water was no longer observed at the site to the south of the processing plant.
2007	An area of white surface colouration appeared to occupy the outer boundary of the south west corner of the LRSF. Slight red / brown discolouration towards the south east corner of the LRSF, likely linked to dust deposition / sediment erosion from the LRSF. The white surface colouration to the south east of the evaporation ponds continued to retreat to the east, away from the evaporation ponds and the west shoreline of Lake Yindarlgooda.	No significant change to the mining industrial area/processing plant or surrounding landscape was observed.

Year	Description of Site	Description of Surrounding Land
2009	The white surface colouration at the south west corner of the LRSF had dissipated. The southern cell of the evaporation ponds was no longer characterised by white surface colouration. The continued easterly retreat of the white surface colouration was observed, away from the evaporation ponds and the west shoreline of the Lake Yindarlgooda.	No significant change to the mining industrial area/processing plant or surrounding landscape was observed.
2011	No significant change to the evaporation ponds or the LRSF was observed. Slight red / brown discolouration towards the south east corner of the LRSF and east of the evaporation ponds, likely linked to dust deposition / sediment erosion from the LRSF. The complete retreat of the white surface colouration that was observed to the south east of the evaporation ponds in previous years was apparent.	No significant change to the mining industrial area/processing plant or surrounding landscape was observed.
2015	No significant change to the LRSF was observed. The surface of the evaporation ponds appeared to be transitioning from the white colour observed in 2011. The surface of Lake Yindarlgooda immediately south east of the evaporation ponds appeared to be transitioning back to white colouration.	No significant change to the mining industrial area/processing plant or surrounding landscape was observed.
2018	Slight red / brown discolouration towards the south east corner of the LRSF and east of the evaporation ponds, likely linked to dust deposition / sediment erosion from the LRSF. No significant additional changes were observed.	No significant change was observed.

3.5 Unexploded Ordnance Records

A review of the Australian Department of Defence *Unexploded Ordnance (UXO) Register* (DoD, 2018) was undertaken to identify the potential risk from unexploded military ammunition. Results of the search indicated that two areas of potential risk were located in general proximity to the site. Refer to **Table 7** below for a summary of the UXO search results.

Table 7 Summary of UXO search results

UXO Area	ID	Location	Description
Kalgoorlie Area [WA]	1006	East of site	Mortar and grenades practices in 1943. Possibly also used post WWII for army live firing exercises.
Kalgoorlie Air Gunnery Range [WA]	1005	East of site	Aerial gunnery and bombing from 1944 with ordnance thought to include Possible use by Army between 1940-1992 as a high explosive firing range.

3.6 Previous Environmental Investigations

Information provided to SLR at the time of this investigation indicated that numerous previous environmental investigations/assessments were conducted on site. An overview of the previous environmental investigations undertaken is detailed below in **Table 8**.

Table 8 Summary of previous environmental investigations

Date	Investigation Summary
Jun-2018	**AMP – Bulong Site Inspection – 13 June 2018** (DMIRS, 2018) Key observations from a site inspection with the objective of assessing the Leach Residue Storage Facility, evaporation ponds, and underdrainage dam to inform the scope of works being prepared for this Preliminary Site Investigation. The document summarises the project area, site history, and previous site investigations.
Jun-2017	**Bulong Tailings Storage Facility (TSF) – Preliminary Site Assessment** (Soilwater Consultants, 2017) Soil Water Consultants undertook a Preliminary Site Assessment of the Tailings Storage Facility at the abandoned Bulong Nickel Project. Investigation results included details pertaining to the current status of the facility, the associated environmental risks, further work required to quantify environmental risk and impact, and identification of the work required to prevent further impact. The report concluded the facility was structurally stable and the sediment observed in Lake Yindargooda was due to surface erosion of the outer southern embankment. Rehabilitation works were recommended for the southern embankment including a decrease in embankment slope by building out with rocky scree, applying 10cm (max) of topsoil, and seeding the reshaped embankment wall.
Nov-2003	**Temporary Closure Plan** (Bulong Operations & Bulong Nickel, 2003) Relevant environmental information was detailed within *Chapter 6* of the Closure Plan and included topics such as past environmental impact assessments and approvals, license details (e.g. EPA license 7274/6, license to take water no.GWL61047, operating tenements), the environmental management approach to closure, and residue management information (status and fill levels of the TSG and EP at the time of the report).
Aug-2003	**Annual Environmental Review Bulong Nickel Operations** (DIR, 2003) Inspection report of mining operations at Bulong as of June 2003. The report stated that hydrocarbon and process chemical management and domestic/industrial waste disposal were generally unsatisfactory. Wetting/discolouration observed midway up the north and east embankments of the LRSF. Tailings were observed in evaporation pond 2, which was an unlicensed structure for the storage of tailings.
Feb-2003	**Leach Residue Storage Facilities and Evaporation Facilities Audit Report – 2002 Bulong Nickel Operation** (Soil & Rock Engineering, 2003) Operational audit report that provided the results of an inspection and review of the Leach Residue Storage Facility and Evaporation Pond Facility at Bulong Nickel Operations during 2003. Results indicated that at the time of the report the LSF and evaporation ponds were being operated in accordance with the intent of design. Groundwater and water quality monitoring indicated that background levels had been exceeded.
Sep-2002	**Inpit Leach Residue Storage Federal Pit Bulong Nickel Project Notice of Intent** (Soil & Rock Engineering, 2002) Notice of Intent regarding a proposal to use the Federal Pit for leach residue storage to supplement the existing Leach Residue Storage Facility. The location for the proposed storage was 2.5 km south of the plant site (M25/76). Leach residue properties were reported to be precipitated residues from the leach process and were composed largely of jarosite, hydroxides, and oxides of iron with lesser amounts of alunite and gypsum. Five monitoring bores were proposed adjacent to the Federal Pit, with four (MB01–FMB04) to a depth off 45mbgs and one (FMB05) to a depth of 75mbgs.
Oct-2001	**Addendum to Notice of Intent Leach Residue Storage Facility Stage III Embankment Raising Bulong Nickel Project** (Soil & Rock Engineering, 2001) Notice of Intent regarding a proposal to use the Criterion Pit for leach residue storage to supplement the existing Leach Residue Storage Facility. The proposed leach residue storage was approximately 500m south east of the plant site (predominantly on lease number M25/77). Leach residue properties were reported in Section 3 and are consistent with the properties recorded in 2002. A report was attached to the notice which pertained to a geotechnical investigation carried out as part of the Stage 3 raise of the Leach Residue Storage Facility. Field work involved the excavation of 16 test pits to depths between 0.25mbgs and 2.2mbgs. Groundwater was not encountered in any of the test pits. Particle size distribution tests indicated that the samples were medium plasticity sandy clays and clayey sands. General construction recommendations were provided based on the results of the geotechnical investigation.

Date	Investigation Summary
Jul-2001	Communication between Bulong Operations and various stakeholders. Subject of communication included the following. • Letter of Intent – Disposal of Solvent Extraction Waste Material into the Leach Residue Storage Facility. • Approval to expand TSF (9 February 2001). • Monthly update on disposal of wastewater (10 Jul 2000). • Location of groundwater monitoring bores.
Oct-2000	**Proposed Evaporation Pond on Lake Yindarlgooda, Bulong Nickel Project** (URS, 2000) Notice of Intent regarding the proposal installation of a new evaporation pond. The proposed location was on Lake Yindarlgooda and the proposed project included two cells with an evaporation area of approximately 50ha each. The report included the strategy for disposal of process residue and evaporite management information.
Mar-2000	**Evaporation Pond and Tailings Storage Facility Inspection on 28 March 2000** (DME, 2000) Communications from March 2000 regarding the status of the tailings storage facility and evaporation pond. The following issues were noted during the inspection. • A large volume of water was observed within the evaporation pond, with an estimated maximum depth of six metres. • Repair works to the external toe of the south-western embankment of the evaporation pond was completed. Minor seepage was identified along the south-western embankment. Daily inspections of the embankment were recommended. • Seepage was observed through a section of the north-eastern embankment of the evaporation pond. The probable cause of this seepage was assumed to be a high-water level in the evaporation pond and the lack of an effective cut-off system in the embankment foundation.
Feb-2000	**1999 Annual Report to the W.A. Department of Environmental Protection** (Bulong Operations, 2000) Site based annual environmental report which included environmental monitoring data pertaining to site operations in 1999. The report included details regarding annual operational data, environmental management at site, and compliance with *Minister Statement no.428*. Groundwater monitoring bore locations, depths, and assay data were also documented within the annual report.
May-1999	**Residue Disposal** (DME, 1999) Communication regarding a site inspection of the residue disposal process and structures. The visit was a result of concerns about previous test results from residue. The residue was identified as different to 'normal' tailings discharge in Western Australia due to the *aggressive first stage of processing* of the mining process. The results of the inspected indicated the disposal process and structures were performing above expectations.
Mar-1997	**Bulong Nickel Project Feasibility Study Leach Residue Storage Facility North of Lake Yindarlgooda** (Knight Piesold, 1997) Feasibility design for the disposal of leach residue from the operation at Bulong Nickel Mine. The report presented the feasibility design arrangement and water management for the residue storage facility. The results of the laboratory test work and site investigations were also presented.
Oct-1996	**Biological Assessment Survey of Leases M25/78, M27/189, L27/55 and L27/56** (Kinhill Engineers, 1996a) A biological survey was conducted on 5 November 1996 on a portion of Lease M25/97 to determine the extent and importance of flora and fauna which may be affected by operations. Seven main vegetation associations were identified within the study area. A total of fifty-seven vascular plant species from nineteen families and thirty-seven genera were recorded in the residue storage area. Four separate fauna habitats were recognised however the habitat dominating the study area was a low chenopod shrubland. Eight bird species, four mammal species, and one reptile species were observed during the fauna survey.
Mar-1996	**Archaeological Survey at the Bulong Nickel-Cobalt Project, Kalgoorlie** (Quartermaine Consultants, 1996) Archaeological Survey of the Bulong Nickel-Cobalt Project site. Nine areas were designated for the survey with twenty-one archaeological sites were discovered and recorded in the course of the survey. Only three of these were within areas that might be impacted by development.

Date	Investigation Summary
Feb-1996	**Resolute Resources Limited Bulong Nickel Laterite Project Consultative Environmental Review** (Kinhill Engineers, 1996b) Environmental assessment for the proposed development of the Bulong Nickel Laterite Project. The report provided a detailed analysis of potential environmental impacts, a description of the receiving environment, key environmental topics, and an outline of the environmental management plan.

3.7 Site Inspection and Field Observations

A site inspection was undertaken on 6–7 November 2018 by an experienced SLR representative to validate any anecdotal and historical information and allow for the identification of any additional evidence of potential contamination. Refer to **Appendix C** for a copy of the Photography Log pertaining to the site inspection and limited site assessment. The following observations pertaining to potential contamination were noted during the site inspection and limited site assessment undertaken as part of this PSI.

- Upon turning off Bulong Road to site, access to get to the project site was easily accessible and there were no barriers to stop the public gaining access to the site, which would pose a Health and Safety concern, due to the ease of access to the site. Tracks were noted onsite which were likely linked to exploration activities, however may be linked to recreational activities (four wheel driving, motor biking, etc.).
- Visual signs of wind erosion of the tailings dam material were predominately observed to the south, south-east, and increased in extent to the east further than the aerial photography suggested. Soil sample SP12 was taken as the first indication of visual reduction in red material onto the vegetation itself to the east.
- From the visual signs of erosion / dust deposition around the LRSF and the Evaporation Pond, it is appears that these facilities are the sources of elevated metals concentrations in the soil / sediment.
- Samples were taken at sites which were indicative and accessible to the visual field of apparent contamination.
- A spread of samples was taken within the tailings and on/within close proximity to the embankments, allowing for an assessment of potential water and wind erosion. Most samples were taken with the presumption of contamination for characterisation purposes.
- Surficial soil samples predominantly comprised of disturbed potentially contaminated soil which consisted of apparent clay / clay-loam material.
- Surface geology to the south of the tailings dam embankment primarily consisted of apparent salt lake soil (*WA Soil classification*) / hypersalic hydrosol (*Australian Soil classification*). Excluding the embankment of built up material, soils consisted of clay with a green clay hardpan which in some cases impinged on gleaning a 30cm sample. It was assumed that high salinity and potential and waterlogging would render this soil unsuitable for vegetation (except halophytes).
- Collection of samples to the further south and east of site would have encroached into salt lake soils, which were moist at the time of the site visit, creating a potential safety concern. Given the waterlogged soil, any sampling to the further south and east should only be undertaken during dryer months.

The following provides a correlation between the collected samples and observed soil profiles identified on site.

- SP20 was considered a good indication of downward flow, was visually a dark red and exhibited a clay hardpan showing the salt lake soil composition.
- REF01 was considered a representative sample of the background soil qualities.
- SP18 was considered indicative of the red tailings material within the evaporation pond to its southern extent.
- SP29 and BMH08 was collected from within an area affected by any evaporation pond contamination and out of the path of predicted wind-blown tailings material.
- SP23 was collected from as far south from the access roads into the salt lake soil that was possible without submersion.
- Five samples were collected in the tailings Storage Facility (SP2, SP4, SP33, SP34 and SP35), and two collected from the Evaporation Pond (SP18 and SP25).

3.8 Potential for Contamination Identified

Nickel extraction from sulfidic ores is typically a pyrometallurgy / hydrometallurgical metallurgical extraction to generate a matte-ore (pyro is older hydro is a newer process). Pyrometallurgy involves the roasting / melting of material and burning off hydrogen sulfides followed by selective floatation (as melting and separation based on density and melting point) which is then used to separate nickel and cobalt[1]. hydrometallurgical involves high pressure acid leaching of nickel and cobalt using sulphuric acid, hydrogen sulphide and nitrogen are also added down the line to the acid leached solution to improve purity. The (pyro and hydro) product is typically refined using solvent extractants to separate nickel and cobalt.

Another form of refinement involves hydrometallurgy of nickel from a generally refined ore and winning back the leached nickel using electrolysis separating it from copper.

From reviewing the above process, discussions with DMIRS and identifying the two Areas of Interest (AoI) the Compounds of Potential Concern (CoPC) identified on-site included the following:

- Metals (Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, K, Hg, Mg, Mn, Mo, Ni, Pb, P, Se, Si, Ag, Na, S, Sn, Tl, Ti, U, V, Zn).
- Cyanide.
- ASS.
- Total Nitrogen, Ammonia, Nitrate, Nitrite and Sulphate.

Table 9 Contaminants of Potential Concern Identified on the Site

Location	Area of Interest	Potentially Contaminating Infrastructure / Activity	Contaminants of Potential Concern (CoPC) Identified	Comment
Onsite Sources	AoI-1	LRSF	Metals (Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, K, Hg, Mg, Mn, Mo, Ni, Pb, P, Se, Si, Ag, Na, S, Sn, Tl, Ti, U, V, Zn). Cyanide. ASS. Total Nitrogen, Ammonia, Nitrate, Nitrite and Sulphate.	• Potential exists to impact natural soils and groundwater at the site. • Potential exists for material in the LRSF and evaporation ponds to migrate across the site by dust deposition. • Potential exists to impact ecological receptors.
	AoI-2	Evaporation Pond		

[1] It is noted that as nickel has a melting point of 1,455 ^{o}C and cobalt has a melting point of 1,485 ^{o}C they are difficult to separate initially

4 Limited Soil and Groundwater Assessment

4.1 Methodology

Works undertaken as part of this limited soil and groundwater investigation were completed in general accordance with the following guidelines and standards.

- National Environment Protection Council (1999, 2013 revision), National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM).
- AS 4482.1-2005, Guide to the Sampling and Investigation of Potentially Contaminated Soil. Part 1: Non-volatile and semi-volatile compounds.
- AS/NZS 5667.1:1998, Water Quality-Sampling. Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.

In addition, SLR's Standard Operating Procedures (SOPs) were followed to ensure integrity was maintained and sampling procedures were completed in accordance with the relevant guidelines and standards.

4.1.1 Soil Sampling Methodology

Soil samples were collected in accordance with the following methodology outlined below in **Table 10**. Sample locations are shown in **Figure 02** in **Appendix A**.

Table 10 Summary of soil sampling methodology

Activity	Detail / Comment
Soil sampling	Samples were collected from nominal depths of 250–300mm below ground surface using a hand auger. Additional samples were also collected where visual or olfactory indicators of contamination were observed.
Sample collection	Sample collection was undertaken in general accordance with AS4482.1-2005 and SLR SOPs. Dedicated disposable nitrile gloves and laboratory supplied sample containers were used for soil sample collection. Soil samples were placed in laboratory provided glass and plastic jars and plastic sample bags and appropriately sealed.
Sample preservation	Samples were placed in laboratory supplied jars and were stored as close to 4°C as practicable, in insulated chilled containers while on site and in transit to the laboratory.
Sample submission	Chain of custody (COC) documentation was completed at the time of sample collection and accompanied the samples to the laboratory.
Sample analysis	All samples were submitted to a NATA accredited laboratory for selected analysis (Eurofins Environment Testing Australia Pty Ltd (Eurofins)). Selected soil samples were analysed for the following contaminants of potential concern. • Metals (Al, Ag, As, B, Ba, Be, Bi, Cd, Co, Cr, Cu, Fe, Hg, Mn, Mo, Ni, Pb, Se, Sr, Sb, Sn, Ti, Tm, U, V, and Zn); • Total Sulphur; • Cations and Anions; • Particle Size Distribution; • Chromium reducible sulphur suite; • Net Acid Generation and Net Acid Production Potential; • ASC NEPM screen for soil classification; • Free Cyanide • pH

4.1.2 Groundwater Sampling Methodology

Groundwater samples were collected in accordance with the following methodology outlined below in **Table 11**. Well locations are shown in **Figure 02** in **Appendix A**

Table 11 Summary of groundwater sampling methodology

Activity	Detail / Comment
Well gauging	Monitoring wells were gauged using an oil/water IP. The IP was decontaminated between each measurement with by triple washing with deionised water between wells.
Water quality parameters measurement	The following in-situ water quality parameters were measured using a calibrated water quality meter. • Dissolved oxygen; • Electrical conductivity; • Oxidation-reduction (redox) potential; • Temperature; and • pH.
Sample collection	Groundwater samples were collected using Hydrasleeve sampling methodology. Note that Hydrasleeve sampling is considered to be a passive sampling method that does not disturb the water column and as such, is a preferred sampling method for volatile contaminants as outlined in the ASC NEPM.
Sample preservation	Samples were placed in laboratory supplied sampling containers and stored as close to 4°C as practicable, in insulated chilled containers while on site and in transit to the laboratory.
Sample submission	COC documentation was completed at the time of sample collection and accompanied the samples to the laboratory.
Sample analysis	All groundwater samples were submitted to NATA accredited laboratories for analysis. Groundwater samples were analysed for the following contaminants of concern. • Metals (Al, Ag, As, B, Ba, Be, Bi, Cd, Co, Cr, Cu, Fe, Hg, Mn, Mo, Ni, Pb, Se, Sr, Sb, Sn, Ti, Tm, U, V, and Zn); • Free Cyanide; • Chloride; and • Total Nitrogen, Ammonia, Nitrate, Nitrite and Sulphate.

4.1.3 Quality Assurance and Quality Control Programme

4.1.3.1 Field QA/QC

For quality assurance and quality control (QA/QC) purposes, one duplicate and split soil sample was collected at a rate below 1:20 as per AS4482.1-2005. This was due to the preliminary assessment of the project and budgetary requirements.

The duplicate sample was used to assess the reproducibility of the sampling and analytical methods used. The split samples were submitted to assess the analytical proficiency of the primary laboratory. Quality control samples were labelled with no reference to the parent sample (i.e., “blind” duplicate) on the sample container or chain of custody to ensure analytical results are not biased by the laboratory.

4.1.3.2 Laboratory QA/QC

The accuracy and precision of laboratory QC results are measured by percentage recovery, relative percentage difference (RPD), method blank value, duplicate, laboratory control, matrix spike, and surrogate recovery. Definitions and acceptance targets for these measures are detailed in the laboratory reports contained in **Appendix I**.

4.2 Nominated Investigation Levels

The nominated investigation levels (ILs) adopted for the limited soil and groundwater investigation have been selected to assess the potential risks posed to current on and off-site sensitive receptors. At the time of this investigation, SLR defined the site as a publicly accessible open space, with a sensitive marine ecosystem to the east and south of the site.

4.2.1 Soil Investigation Levels

The nominated ILs for the assessment of soil were selected from the following based on anticipated future use of the site, i.e. as an open area easily accessed by the general public, and the site is located adjacent Lake Yindarlgooda considered an Area of Ecological Significance (AES). ILs can be found in **Tables 01–03** in **Appendix B**.

- ASC NEPM Health-based Investigation Levels (HIL), public open space (IL01);
- ASC NEPM Ecological investigation levels (EIL) for urban residential and public open space, aged soil (IL02); and
- ASC NEPM EIL for national parks and areas of high conservation value, aged soil (IL03).

Site-specific EILs were developed using the ASC NEPM *Ecological Investigation Level Calculation Spreadsheet*. To facilitate the development of the site-specific EILs, the required physicochemical inputs were determined by averaging site-specific analytical results from samples collected on site.

4.2.2 Groundwater Investigation Levels

The nominated ILs for the assessment of groundwater were selected from the following and can be found in **Table 05** in **Appendix B**.

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Governments (ANZG, 2018) Default Guideline values, Marine Water Ecosystem 95% species protection – slightly to moderately disturbed ecosystems; and
- ASC NEPM Groundwater Investigation Levels (GILs), Marine water ecosystem.

The above IL's were selected for this assessment as it is considered that there are no groundwater extraction points on the project site, and the main receptor for the groundwater is ecosystem in the neighbouring lake.

4.3 Results

4.3.1 Soil Results

4.3.1.1 Soil Analytical Results

A total of 72 soil samples (including QC samples) were analysed as part of this investigation. Refer to **Tables 01–03** in **Appendix B** for the analytical results of the soil samples and **Figure 02** in **Appendix A** for the sample locations. Certified laboratory reports are included within **Appendix I**. Refer to **Table 12** below for a summary of the analytical soil results above IL's.

Table 12 Summary of soil analytical results above IL's

Analytes	Investigation Levels (IL) (mg/kg)			Range of Results (mg/kg)	The Number of Samples Exceeding ILs
	HIL-C	EIL-UR/POS	EIL-AES		
Arsenic	300	100	40	<LOR – 40	1 (SP6_0-0.1)
Chromium	300	410	140	30 – 4,500	Refer to **Appendix B** for locations
Nickel	1,200	660	120	<LOR – 1,900	Refer to **Appendix B** for locations

nil = no investigation level exceedance

LOR = Limit of Reporting

4.3.1.2 Soil Results Discussion

The soil analysis indicates all soil samples with the exception of four (SP18_0.3, SP27_0.3, SP29_0.3 and SP36_0.3) had elevated concentrations above at least one nominated investigation levels. It should also be noted that all these samples have been taken at depth, where the corresponding surface sample also contains concentrations above nominated investigation levels. All exceedances are related to Chromium and Nickel, however there is one Arsenic sample that is equal to the nominated investigation level (NEPM EIL Areas of Ecological Significance). Please note that the Chromium analytical results are reported as total Chromium and are not speciated. Concentrations are demonstrated to decrease with increasing distance in an eastern direction from the LRSF. The decreasing concentration are evident in samples SP39 and SP12. Whereas consistent concentrations of Chromium and Nickel are observed continuing in a south east direction away from the LRSF and adjacent to the evaporation ponds (SP19 to SP21).

A single background sample soil sample (REF1) collected at the northerly boundary of the project area, also contained concentrations of Chromium and Nickel above investigation levels. Further background samples are required to be collected (in undisturbed areas and away from likely dust deposition / sediment impact) to obtain an accurate understanding of background concentrations.

All samples analysed for Acid Sulfate Soil (ASS) also indicate that the required liming rate is below limit of detection (<1 kg $CaCO_3$/t). It is therefore considered the risk of ASS in the assessment area is low.

The investigation also indicated that the materials in both areas (LRSF and Evaporation Ponds) are unsuitable for supporting vegetation. This is due to very high salinity levels (LRSF conductivity 4,300 to 15,000 uS/cm and Evaporation Ponds 11,000 to 18,000 uS/cm), very high sodicity (LRSF Exchangeable Na 15% to 46% and Evaporation Ponds 54% to 81%) and very low organic carbon (LRSF < 0.4% and Evaporation Ponds < 0.2%). Also, the materials have a very coarse texture (low clay content).
Following a review of the analysis the main areas with elevated soil concentrations of Nickel and Chromium above the IL's (excluding samples taken from with both the LRSF and evaporation ponds) were mainly located

to the East, South and South West of the LRSF, while the evaporation pond had exceedances all around the boundary. Concentrations of analytes in these areas were equivalent to concentrations of samples taken from both the LRSF and Evaporation Pond.

4.3.2 Groundwater Results

4.3.2.1 Groundwater Gauging and Water Quality Parameters

In-situ groundwater quality parameters were measured on 7 November 2018 prior to groundwater sampling of each monitoring well. Field measurements are presented in **Table 04** of **Appendix B** and are summarised below in **Table 13**.

Table 13 Summary of in-situ groundwater quality parameters

Parameter	Measurement
Static Water Level (shallow monitoring wells)	1.03 – 9.64 mbTOC
Static Water Level (deep monitoring wells)	1.13 – 12.38 mbTOC
Dissolved Oxygen	0.04 – 3.08 mg/L
Redox Potential (E_h)	280.20 – 400.20 mV
Total Dissolved Solids	62,010 – 135,655 mg/L
pH	5.74 – 7.36
Temperature	20.30 – 23.80°C

mbTOC = metres below top of casing mg/L = milligrams per litre mV = millivolts
°C = degrees Celsius

4.3.2.2 Groundwater Analytical Results

A total of eight (8) groundwater samples were collected analysed from monitoring wells around site with sufficient water volumes as part of this PSI. Refer to **Table 05** in **Appendix B** for the analytical results of the groundwater samples and **Figure 02** in **Appendix A** for the monitoring well locations. Certified laboratory reports are included within **Appendix I**. Refer to **Table 14** below for a summary of the analytical groundwater results detected at concentrations exceeding the nominated ILs.

Table 14 Summary of groundwater analytical results

Analyte	Investigation Levels (mg/L)		Range of Results (mg/L)	Samples Exceeding ILs
	ANZG 95%	GIL / Marine		
Cadmium	0.0055	0.0007	0.0019 – 0.0096	All samples
Chromium	0.0044	0.0044	<LOR – 0.052	BMH04, BMH08
Cobalt	0.001	0.001	<LOR – 1.9	BMH06, BMH09, BMH11, BMH12
Copper	0.0013	0.0013	<LOR – 0.049	BMH06, BMH11
Lead	0.0044	0.0044	<LOR – 0.063	BMH04, BMH06, BMH08
Nickel	0.07	0.007	0.006 – 51	BMH02, BMH04, BMH06, BMH09, BMH11, BMH12
Zinc	0.015	0.015	0.06 – 0.34	All samples

Analyte	Investigation Levels (mg/L)		Range of Results	Samples Exceeding ILs
Ammonia (as N)	0.91	0.91	<LOR – 14,000	BMH02, BMH06, BMH09, BMH10, BMH11, BMH12
Cyanide (total)	0.004	0.004	<LOR – 0.1	BMH02, BMH09, BMH10, BMH11, BMH12

LOR = Limit of Reporting

4.3.2.3 Groundwater Results Discussion

The water quality parameters taken during the groundwater monitoring event indicate the following:

- The groundwater is highly saline (high electro conductivity and total dissolved solids), with an acidic to neutral pH.
- Low redox potential and dissolved oxygen indicates an anaerobic environment.

Analytical results show elevated Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Zinc, Ammonia (as N), and Cyanide (total) all above associated IL's. Concentrations of each analyte is sporadic across the site, while concentration within BMH06 located in the Evaporation Pond area has the highest concentrations of Ammonia, Cadmium, Cobalt, Copper, Lead, Nickel and Zinc.

No background groundwater samples were collected as all wells in the project area are located to target effects from the infrastructure in the project area. As a result, the background groundwater quality characteristics are unable to be accurately confirmed and require further investigation.

4.3.3 QA/QC Analytical Results

4.3.3.1 Field QA/QC

Due to the preliminary nature of the assessment, and to increase the number of primary location assessed no groundwater QA/QC was collected and one QA / QC sample was collected and analysed. One duplicate (QC1) and split (QC1A) sample was collected from parent soil sample SP1_0-0.3 and submitted for laboratory analysis as part of this PSI. With the exception of the analytes listed below in **Table 15**, the remaining RPDs were considered acceptable for the primary and duplicate/split sample. As per the ASC NEPM and for the purpose of this investigation, a 30% RPD acceptance criteria has been adopted.

Table 15 Summary of RPDs exceeding the acceptable limit

Parent Sample	Sample Date	Duplicate / Split	Analyte	RPD %
SP1_0-0.3	06-Nov-2018	QC1	Calcium	38.60%
			Magnesium	41.76%
			Boron	57.14%
			Cobalt	32.56%
			Manganese	35.90%
			Nickel	34.15%
			Strontium	53.06%
			Nitrate (as N)	45.71%
			Sulphate (as SO4)	96.63%
			Total Organic Carbon	40.00%
			Cation Exchange Capacity	54.78%

Parent Sample	Sample Date	Duplicate / Split	Analyte	RPD %
		QC1A	Calcium	56.25%
			Magnesium	80.99%
			Potassium	36.29%
			Sodium	48.65%
			Boron	62.75%
			Cobalt	53.06%
			Iron	31.58%
			Manganese	56.18%
			Nickel	48.89%
			Strontium	66.77%
			Titanium	30.30%
			Zinc	43.48%
			% Clay	56.41%
			Chloride	42.62%
			Nitrate (as N)	38.81%
			Sulphate (as SO4)	95.45%

The exceedances of RPDs were reviewed and were considered to be a result of the heterogeneous nature of sampled material which was from both erosion of the western wall of the LRSF and the soils beneath the erosion.

4.3.3.2 Laboratory QA/QC

All laboratory RPDs and matrix spike recoveries reported to exceed the acceptable limit within the Certificate of Analyses passed the QC Acceptance Criteria as defined in the Eurofins Internal Quality Control Review. Refer to **Appendix I** for copies of the Certified Laboratory Reports.

4.3.3.3 QA/QC Conclusions

Based on the review of the field and laboratory QA/QC results, SLR recommends the analytical data is suitable for its intended purpose.

5 Conceptual Site Model

5.1 Elements of a Conceptual Site Model

This conceptual site model (CSM) has been developed in accordance with the ASC NEPM, which draws upon the ASTM E1689-95 (2014) Standard Guide for Developing Conceptual Site Models for Contaminated Sites (ASTM, 2014). The CSM has been developed to determine the presence of plausible complete exposure pathways from potential contamination sources to susceptible receptors such as humans and/or environmental values. As per ASTM E1689, definitions of the key elements of the complete exposure pathways are as follows.

- Contaminant – any substance, including any radiological material, that is potentially hazardous to human health and or the environment and is present in the environment at concentrations above it background concentrations.
- Source – the location from which a contaminant(s) has entered or may enter a physical system. A source may be of primary of secondary origin.
- Environmental Receptor – humans and other living organisms potentially exposed to and adversely affected by contaminants because they are present at the source(s) or along contamination migration pathways.
- Migration Pathway – the course through which contaminants in the environment may move away from the source(s) to potential environmental receptors.
- Exposure Route – the process by which a contaminant or physical agent in the environment comes into direction contact with the body, tissues, or exchange boundaries of an environmental receptor organism. Examples include (but are not limited to) ingestion, inhalation, dermal absorption, root uptake, and gill uptake.

Descriptions of the key elements of the CSM associated with the site and a summary of the identified potentially complete exposure pathways are outlined below in the following sections.

5.2 Source

The primary sources of contamination identified on the site are related to the former mining processes, which are:

- Main LRSF, and
- Evaporation pond.

The following secondary sources of contamination were identified to exist on site.

- Dust / sediment deposition from the residual soils within the LRSF.
- Dust / sediment deposition from the residual soils within the Evaporation Pond.
- Elevated levels of Chromium and Nickel throughout the soils onsite.
- Elevated levels of Ammonia, Cadmium, Chromium, Cobalt, Copper, Cyanide, Lead, Nickel and Zinc throughout the groundwater onsite.

5.3 Environmental Receptor

With reference to the aforementioned information, the following key site-specific potential environmental receptors were considered relevant.

- On and off-site recreational land users.
- On and off site ecological receptors.
- Marine water ecosystems of Lake Yindarlgooda.

Note that other receptors may also be present at the site on a circumstantial basis. This CSM has not considered exposure to occasional visitors within and adjacent to the site, as chronic daily exposures are generally considered to represent more significant exposures. On the basis of exposure frequency and duration, the receptors litsed above are considered to present the highest chronic exposure.

5.4 Potential migration Pathway and Exposure Routes

The primary feasible migration pathways that have been identified include the following.

- Migration of surface contaminants, impacted soil, or leachable contaminants via hydraulic surface flow during periods of inclement weather.
- Aerial dispersion and distribution contaminants (e.g. wind-blown soils).
- Groundwater migration off site.

For the identified migration pathways, the following potential exposure routes have been identified.

- Direct contact (dermal) with contaminated material (soil).
- Inhalation of contaminated material, such as vapour or dust, via earthworks disturbance.
- Incidental ingestion of contaminated material (all media).
- Bioaccumulation (including biomagnification and/or bioconcentration) in organisms.

5.5 Potentially Complete Exposure Pathways

For a risk to the environment or human health to exist there must a contaminant source and a migration pathway and exposure route to the receptor. The potentially complete exposure pathways present in relation to the site's contamination status at the time of this investigation are presented below in **Table 16**.

Table 16 Summary of potentially complete exposure pathways

Source	Exposure Route	Environmental Receptor	Complete Exposure Pathways
Dust deposition from the residual soils within the LRSF / Evaporation Ponds across the site	Inhalation via aerial dispersion	On / Off-site recreational land users	✓
	Bioaccumulation via dust deposition	Marine water ecosystems of Lake Yindarlgooda.	✓
		On / Off-site environmental receptors (vegetation and livestock)	✓
Metal Impacted surface soils / sediments	Dermal Contact and ingestion	On / Off-site recreational land users	✓
	Adsorption	On / Off-site environmental receptors (vegetation and livestock)	✓
	Bioaccumulation via surface water migration	Marine water ecosystems of Lake Yindarlgooda.	✓
Dissolved metals impacted Groundwater	Bioaccumulation via groundwater migration	Marine water ecosystems of Lake Yindarlgooda.	✓

✓ = Pathway Potentially Complete – a migration pathway and exposure route exist from the source to the potential receptor

× = Pathway Insignificant - a migration pathway potentially exists however the exposure is considered unlikely to present an unacceptable risk to the potential receptor;

×× = Pathway Incomplete - no transport mechanism or exposure route exists to the potential receptor

With reference to, analysis of the potentially complete exposure pathways identified the following.

- As dust deposition is evident across the site, the potential for this dust to migrate and potentially impact on / off site recreational users via inhalation is seen as a potential complete exposure pathway. This pathway will require further airborne dust deposition assessment to assess the impact of this potential exposure pathway.
- Dust deposition has also the potential to impact the marine water ecosystems of Lake Yindarlgooda and on / off-site environmental receptors (vegetation and livestock) through bioaccumulation (including biomagnification and/or bioconcentration), thus completing a potential exposure pathway.
- Dermal contact and incidental ingestion resulting in potential exposure to Chromium and Nickel detected within the soil across the site was considered a potentially complete exposure pathway. In its current state, Chromium and Nickel containing soil material has the potential to pose an unacceptable risk to users of the area as public open space / recreational use.
- Absorption of metal contaminants (Chromium and Nickel in exceedance of the derived EILs) by current and future on-site vegetation was considered a potentially complete exposure pathway. A potentially complete exposure pathway between possible leachable material and current / future vegetation. Furthermore, off-site migration of impacted soils and ore material (via surficial hydraulic flow) has the potential to allow for the absorption of these metal contaminants to adversely impact off-site terrestrial vegetation.

- Chromium and Nickel impacted soil has the potential to pose an unacceptable risk to the nearby marine environment should surface water migration create a potentially complete exposure pathway. Given the widespread nature of the Chromium and Nickel impacted soil, surface water flow across site should be controlled and monitored for sediment loading during any future development works.
- The bioaccumulation and bioconcentration of dissolved metal contaminants within marine biota is considered a potentially complete exposure pathway. Given the widespread nature of the groundwater impact and the proximity of impacted monitoring wells to the surrounding marine environment, migration of impacted groundwater to said marine environment was considered plausible.

Note that should site conditions change or further information pertaining to the contamination status of the site be identified, then review of this CSM would be warranted.

6 Summary, Conclusions, and Recommendations

Department of Mines, Industry Regulation and Safety (DMIRS) commissioned SLR Consulting Australia Pty Ltd (SLR) to undertake a Preliminary Site Investigation (PSI) for the project area commonly referred to as Bulong (herein referred to as the "site"). The site was located within the dead mining tenement M25/97, approximately 40 kilometres (km) east of Kalgoorlie on the western shoreline of Lake Yindarlgooda.

SLR understands the objective of this PSI was to assess the site for potential sources of contamination and contaminants of concern, the receptors that may be exposed to contamination and the relevant pathways of contamination migration.

Fieldwork was undertaken on 6–7 November 2018 by experienced SLR representatives to validate any anecdotal and historical information and allow for the identification of any additional evidence of potential contamination. During this period, total of 72 soil samples (including QC samples) were collected and analysed as part of this investigation. A further ten groundwater samples were collected with eight analysed.

Following a review of the analysis the main areas with elevated soil concentrations of Nickel and Chromium above the IL's (excluding samples taken from with both the LRSF and evaporation ponds) were mainly located to the East, South and South West of the LRSF, while the evaporation pond had exceedances all around the boundary. Concentrations of analytes in these areas were equivalent to concentrations of samples taken from both the LRSF and Evaporation Pond.

Analytical results for groundwater show elevated Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Zinc, Ammonia (as N), and Cyanide (total) all above associated IL's. Concentrations of each analyte varies across the site, while concentration within BMH06 located in the Evaporation Pond area has the highest concentrations of Ammonia, Cadmium, Cobalt, Copper, Lead, Nickel and Zinc.

The investigation also indicated that the materials in both areas (LRSF and Evaporation Ponds) are unsuitable for supporting vegetation. This is due to very high salinity levels (LRSF conductivity 4,300 to 15,000 uS/cm and Evaporation Ponds 11,000 to 18,000 uS/cm), very high sodicity (LRSF Exchangeable Na 15% to 46% and Evaporation Ponds 54% to 81%) and very low organic carbon (LRSF < 0.4% and Evaporation Ponds < 0.2%). Also, the materials have a very coarse texture (low clay content).

From the soil and groundwater assessment undertaken it appears that both the redundant LRSF and Evaporation ponds have impacted the surrounding environment through migration of the tailings via dust deposition, sedimentation and groundwater migration. As a result of these impacts the following is recommended;

- Secure site to limit access to inducted personnel.
- A groundwater monitoring event on all wells onsite should be carried out. This should include an investigation into the integrity of the wells to ensure that the wells are undamaged, and suitable for continued monitoring.
- Airbourne dust deposition assessment to assess the impact of dust arising from the LRSF and Evaporation Ponds.

The site investigation was undertaken in general accordance with the Assessment and management of contaminated sites, Contaminated Sites guidelines (DWER, 2014) established under the provisions of the Contaminated Sites Act 2003 (CS Act). On the basis of the findings of this PSI and in accordance with the Contaminated sites guidelines (DWER, 2014) SLR recommend a further detailed site investigation is undertaken to establish the contamination status of the site and delineate the identified impact.

The CS Act s. 11 provides for facilitating and requiring the reporting of known or suspected contaminated sites to the Chief Executive Officer (CEO) of the DWER. DMIRS, as the agency currently responsible for managing the site, do not have a duty to report the site to the CEO DWER under the provisions of s. 11(4) on the basis that DMIRS do not meet the following criteria:

- an owner or occupier of the site;
- a person who knows, or suspects, that he or she has caused, or contributed to, the contamination;
- an auditor engaged to provide a report that is required.

CS Act s. 11 (1) provides for discretionary reporting of sites that are known or suspected to be contaminated. On this basis SLR recommend DMIRS informally consult with DWER to investigate responsible reporting approaches under s 11 (1) relating to sites with similar management structures and known contamination status.

This Preliminary Site Investigation report must not be reproduced except in full and must be read in conjunction with the Limitations outlined in Section 8 of this report. This report was also prepared using a scope that was developed in conjunction with DMIRS including the scope of the PSI, soil / groundwater assessment and identification of contaminants of concern.

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8 Limitations

The following information will assist in understanding the uncertainties relating to the interpretation of the data obtained during this investigation and the recommendations presented in the report and help with assessment and interpretation of the report.

SLR assumes no responsibility for the quality or accuracy of data obtained from external sources, or for occurrences outside the scope of works defined in this report.

All work conducted, and reports produced by SLR are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed upon between SLR and the Client. Information and/or report(s) prepared by SLR may therefore not be suitable for any use other than the intended objective.

Before passing on to a third party any information and/or report(s) prepared by SLR, the Client is to inform fully the third party of the objective and scope, and all limitations and conditions, including any other relevant information which applies to the information and/or report(s) prepared by SLR.

It is the responsibility of third parties to investigate fully to their satisfaction if any information and/or report(s) prepared by SLR, is suitable for a specific objective.

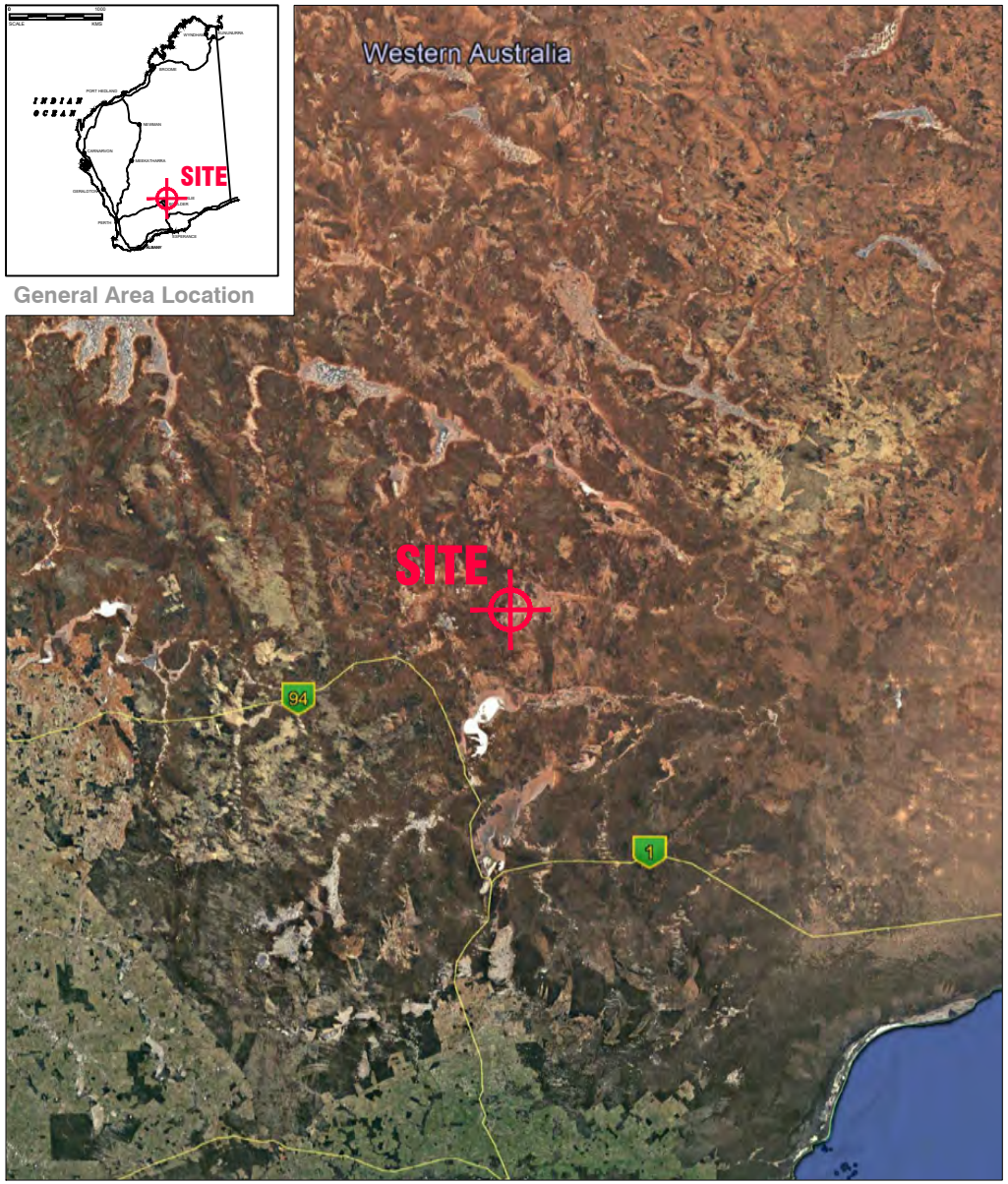
Services were conducted in a conscientious and professional manner. The nature of the task, however, and the likely disproportion between any damage or loss which might arise from the work and any report prepared as a result and the cost of our services is such that SLR cannot guarantee that all issues of concern/contamination have been identified.

The report(s) and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.

APPENDIX A

Figures

General Area Location



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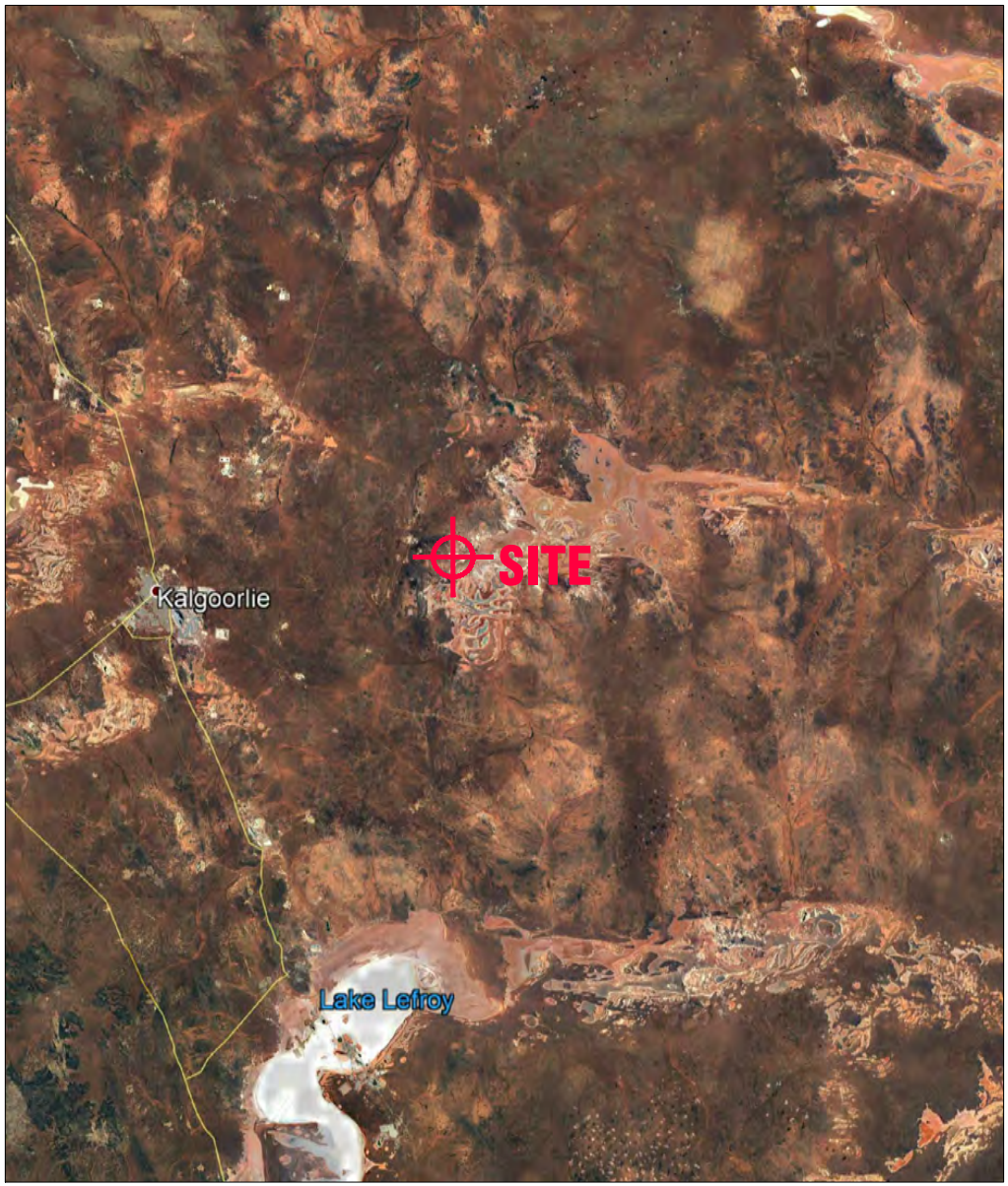
Regional Site Location



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Local Site Location

H:\Projects-SLR\620-BNE\675-PER\675.11369\CADGIS\CAD\675.11369.00000 Sample Locations.dwg

Scale: NTS
(GDA94) MGA Zone UTM

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Sheet Size: A4

Preliminary Site Investigation
Bulong Leach Residue Storage Facility
Site Location

FIGURE 01

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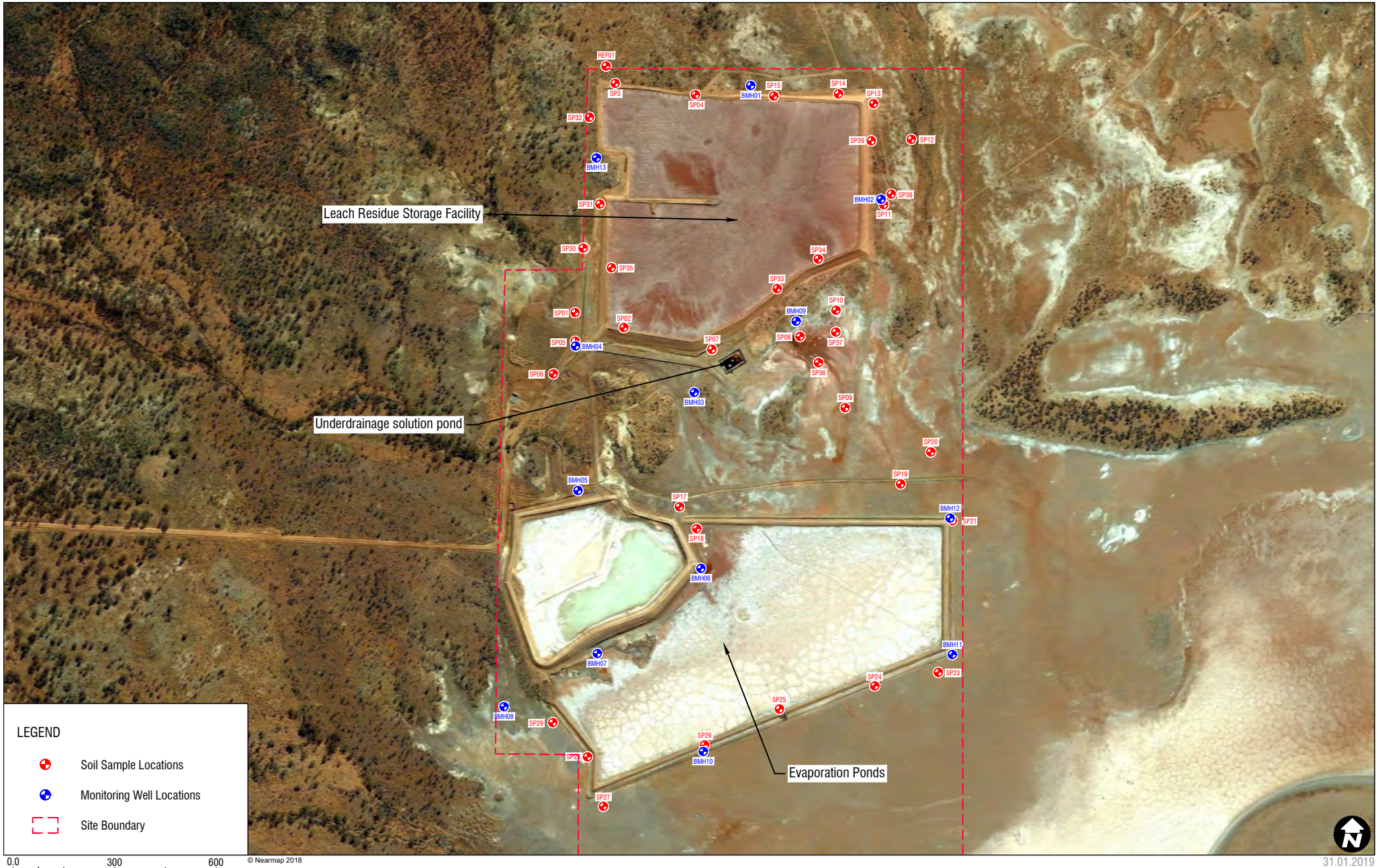

Preliminary Site Investigation
Bulong Leach Residue Storage Facility
Sample Locations

FIGURE 02

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APPENDIX B

Tables

Table 01
Soil Analytical Results
Metals
675.11369.00000

Laboratory ID						P18-No14210	P18-No14141	P18-No14142	P18-No14211	% RPD	P18-No14212	% RPD	P18-No14143	P18-No14144	P18-No14145	P18-No14146	P18-No14147	P18-No14148	P18-No14149
Sample ID						REF1 0-0.1	SP1_0-0.1	SP1_0-0.3	QC1		QC1A		SP2_0-0.1	SP2_0-0.3	SP3_0-0.1	SP3_0-0.3	SP4_0-0.1	SP4_0-0.3	SP5_0-0.1
Sample Collection Date						06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18		06-Nov-18		06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**	**IL(02)**	**IL(03)**				**Duplicate of SP1_0.3**		**Split of SP1_0.3**								
Alkali Metals																			
Calcium	5	mg/kg	NE	NE	NE	53,000	35,000	23,000	34,000	38.60%	41,000	56.25%	11,000	4,400	49,000	100,000	30,000	43,000	9,700
Magnesium	5	mg/kg	NE	NE	NE	10,000	11,000	7,200	11,000	41.76%	17,000	80.99%	2,600	1,900	10,000	16,000	8,000	23,000	11,000
Potassium	5	mg/kg	NE	NE	NE	2,700	1,200	970	1,200	21.20%	1,400	36.29%	280	150	1,900	1,800	470	580	1,100
Sodium	5	mg/kg	NE	NE	NE	990	20,000	14,000	11,000	24.00%	23,000	48.65%	7,100	5,400	4,000	5,100	15,000	12,000	9,300
Heavy Metals																			
Aluminium	10	mg/kg	NE	NE	NE	17,000	11,000	16,000	14,000	13.33%	14,000	13.33%	7,100	5,700	17,000	16,000	7,200	9,300	13,000
Antimony	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	-	< 10	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	**300**	**100**	**40**	7.1	8.3	11	10	9.52%	10	9.52%	20	7.2	6.9	8.6	21	19	16
Barium	10	mg/kg	NE	NE	NE	100	52	61	55	10.34%	81	28.17%	19	10	86	81	47	33	73
Beryllium	2	mg/kg	**90**	NE	NE	< 2	< 2	< 2	< 2	-	< 2	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	-	< 10	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Boron	10	mg/kg	**20,000**	NE	NE	16	37	35	63	57.14%	67	62.75%	25	25	21	45	31	32	14
Cadmium	0.4	mg/kg	**90**	NE	NE	< 0.4	< 0.4	< 0.4	< 0.4	-	< 0.4	-	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	**300[1]**	**410[2]**	**140[2]**	**390**	**330**	**600**	**510**	16.22%	**590**	1.68%	**4,100**	**4,500**	**310**	**280**	**1,600**	**1,300**	**1,000**
Cobalt	5	mg/kg	**300**	NE	NE	19	20	18	25	32.56%	31	53.06%	100	94	20	17	190	90	43
Copper	5	mg/kg	**17,000**	**250**	**95**	39	30	26	30	14.29%	35	29.51%	15	14	34	40	20	19	26
Iron	20	mg/kg	NE	NE	NE	47,000	43,000	48,000	51,000	6.06%	66,000	31.58%	240,000	190,000	42,000	37,000	120,000	85,000	69,000
Iron (%)	0.01	%	NE	NE	NE	4.7	4.3	4.8	5.1	6.06%	6.6	31.58%	24	19	4.2	3.7	12	8.5	6.9
Lead	5	mg/kg	**600**	**1,100**	**470**	7.5	< 5	< 5	< 5	-	< 5	-	8	15	6.4	5.5	< 5	< 5	5.1
Manganese	5	mg/kg	**19,000**	NE	NE	620	430	320	460	35.90%	570	56.18%	1,400	1,400	600	480	2,400	1,400	830
Mercury	0.1	mg/kg	**80[3]**	NE	NE	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	NE	NE	NE	< 5	< 5	< 5	< 5	-	< 5	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	**1,200**	**660**	**120**	**150**	**180**	**170**	**240**	34.15%	**280**	48.89%	**1,800**	**1,200**	**130**	**120**	**1,700**	**1,600**	**530**
Selenium	2	mg/kg	**700**	NE	NE	< 2	< 2	< 2	< 2	-	< 2	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	NE	NE	NE	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	NE	NE	NE	65	60	36	62	53.06%	72	66.67%	25	13	84	180	53	58	35
Thallium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	-	< 10	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Tin	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	-	< 10	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	NE	NE	NE	180	160	140	180	25.00%	190	30.30%	470	560	210	200	290	260	210
Uranium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	-	< 10	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	NE	NE	NE	81	64	75	72	4.08%	82	8.92%	84	110	75	78	54	50	84
Zinc	5	mg/kg	**30,000**	**1,700**	**410**	51	44	36	46	24.39%	56	43.48%	19	18	51	43	24	26	44

Notes:

LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins

' - ' unable to be calculated / not analysed

mg/kg = milligrams per kilogram

[1]as Chromium VI

[2]as Chromium III

[3]as inorganic Mercury

NE = not established

Nominated Investigation Levels (ILs):

Results	IL(01): ASC NEPM Health based investigation levels, public open space.
Results	IL(02): ASC NEPM EIL, urban residential and open public spaces, aged soil
Results	IL(03): ASC NEPM EIL, national parks and areas of high conservation value, aged soil

Values in highlighted cells exceed nominated ILs

Table 01
Soil Analytical Results
Metals
675.11369.00000

Laboratory ID						P18-No14150	P18-No14151	P18-No14152	P18-No14153	P18-No14154	P18-No14155	P18-No14156	P18-No14157	P18-No14158	P18-No14159	P18-No14160	P18-No14161	P18-No14162	P18-No14163
Sample ID						SP5_0-0.3	SP6_0-0.1	SP6_0-0.3	SP7_0-0.1	SP7_0-0.3	SP8_0-0.1	SP9_0-0.05	SP9_0.05-0.1	SP10_0-0.1	SP10_0.3	SP11_0-0.1	SP11_0.3	SP12_0-0.1	SP12_0.3
Sample Collection Date						06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**	**IL(02)**	**IL(03)**														
Alkali Metals																			
Calcium	5	mg/kg	NE	NE	NE	12,000	5,000	3,300	56,000	31,000	69,000	65,000	2,200	680	300	6,400	2,200	690	1,200
Magnesium	5	mg/kg	NE	NE	NE	10,000	6,800	11,000	11,000	12,000	25,000	17,000	14,000	7,500	16,000	3,900	50,000	5,200	22,000
Potassium	5	mg/kg	NE	NE	NE	1,600	340	1,800	510	930	1,000	640	1,100	1,300	1,100	2,100	4,900	1,100	1,800
Sodium	5	mg/kg	NE	NE	NE	14,000	1,400	7,900	44,000	18,000	20,000	16,000	10,000	9,300	20,000	3,100	3,500	2,300	7,300
Heavy Metals																			
Aluminium	10	mg/kg	NE	NE	NE	13,000	12,000	18,000	5,500	8,100	16,000	8,000	14,000	10,000	14,000	16,000	25,000	9,300	17,000
Antimony	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	**300**	**100**	**40**	11	**40**	25	17	8	5.5	7.7	3.4	14	4.2	19	8	11	21
Barium	10	mg/kg	NE	NE	NE	83	71	72	23	41	28	33	36	200	49	33	230	110	160
Beryllium	2	mg/kg	**90**	NE	NE	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Boron	10	mg/kg	**20,000**	NE	NE	14	17	19	28	32	27	18	12	16	10	16	38	< 10	20
Cadmium	0.4	mg/kg	**90**	NE	NE	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	**300[1]**	**410[2]**	**140[2]**	**630**	**3,900**	**1,300**	**960**	**380**	**310**	**450**	**220**	**1,600**	**470**	**1,100**	**350**	**1,100**	**1,300**
Cobalt	5	mg/kg	**300**	NE	NE	42	48	63	74	23	33	24	14	39	14	43	33	27	48
Copper	5	mg/kg	**17,000**	**250**	**95**	28	24	32	11	23	21	15	21	24	24	25	76	26	38
Iron	20	mg/kg	NE	NE	NE	71,000	160,000	70,000	87,000	37,000	34,000	38,000	31,000	98,000	49,000	78,000	34,000	69,000	75,000
Iron (%)	0.01	%	NE	NE	NE	7.1	16	7	8.7	3.7	3.4	3.8	3.1	9.8	4.9	7.8	3.4	6.9	7.5
Lead	5	mg/kg	**600**	**1,100**	**470**	5.7	8	6.5	< 5	< 5	< 5	< 5	< 5	6	< 5	7	9.5	6.5	5.6
Manganese	5	mg/kg	**19,000**	NE	NE	700	520	700	970	470	1,300	590	260	1,100	400	720	1,700	580	460
Mercury	0.1	mg/kg	**80[3]**	NE	NE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	NE	NE	NE	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	**1,200**	**660**	**120**	**290**	**910**	**870**	**980**	**240**	**390**	**290**	**140**	**290**	**130**	**630**	**430**	**300**	**520**
Selenium	2	mg/kg	**700**	NE	NE	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	NE	NE	NE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	NE	NE	NE	32	35	30	75	41	240	550	68	26	11	19	30	< 10	17
Thallium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Tin	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	NE	NE	NE	160	480	290	250	130	180	160	100	250	90	220	120	160	280
Uranium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	NE	NE	NE	76	160	96	24	47	50	49	34	110	65	79	63	95	98
Zinc	5	mg/kg	**30,000**	**1,700**	**410**	59	29	40	11	26	46	30	71	37	64	39	61	29	46

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
mg/kg = milligrams per kilogram
[1]as Chromium VI
[2]as Chromium III
[3]as inorganic Mercury
NE = not established

Nominated Investigation Levels (ILs):

Results	IL(01): ASC NEPM Health based investigation levels, public open space.
Results	IL(02): ASC NEPM EIL, urban residential and open public spaces, aged soil
Results	IL(03): ASC NEPM EIL, national parks and areas of high conservation value, aged soil

Values in highlighted cells exceed nominated ILs

Table 01
Soil Analytical Results
Metals
675.11369.00000

Laboratory ID						P18-No14164	P18-No14165	P18-No14166	P18-No14167	P18-No14168	P18-No14169	P18-No14170	P18-No14171	P18-No14172	P18-No14173	P18-No14174	P18-No14175	P18-No14176	P18-No14177
Sample ID						SP13_0-0.1	SP13_0.3	SP14_0-0.1	SP15_0-0.1	SP15_0.3	SP17_0-0.1	SP17_0-0.3	SP18_0-0.1	SP18_0.3	SP19_0-0.1	SP21_0-0.1	SP21_0-0.3	SP20_0-0.3	SP23_0-0.1
Sample Collection Date						06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**	**IL(02)**	**IL(03)**														
Alkali Metals																			
Calcium	5	mg/kg	NE	NE	NE	6,200	1,300	19,000	45,000	42,000	6,300	410	4,300	310	27,000	72,000	24,000	32,000	6,500
Magnesium	5	mg/kg	NE	NE	NE	4,200	4,800	7,400	17,000	15,000	22,000	2,800	8,600	4,900	24,000	51,000	24,000	35,000	11,000
Potassium	5	mg/kg	NE	NE	NE	970	2,300	850	640	690	840	150	660	1,700	1,600	1,800	970	430	1,700
Sodium	5	mg/kg	NE	NE	NE	1,100	2,400	3,200	5,900	4,500	6,700	7,500	16,000	30,000	17,000	25,000	16,000	6,800	26,000
Heavy Metals																			
Aluminium	10	mg/kg	NE	NE	NE	11,000	18,000	13,000	9,400	10,000	13,000	4,400	4,100	7,000	14,000	18,000	19,000	18,000	13,000
Antimony	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	**300**	**100**	**40**	17	13	21	14	16	39	11	4.6	< 2	9.7	6	13	4.9	11
Barium	10	mg/kg	NE	NE	NE	40	53	140	41	40	66	53	27	11	45	27	66	30	99
Beryllium	2	mg/kg	**90**	NE	NE	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Boron	10	mg/kg	**20,000**	NE	NE	11	16	18	29	35	16	< 10	< 10	< 10	13	22	23	< 10	13
Cadmium	0.4	mg/kg	**90**	NE	NE	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.7	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	**300[1]**	**410[2]**	**140[2]**	**1,300**	**890**	**1,900**	**740**	**840**	**2,400**	**600**	**270**	30	**510**	**360**	**600**	**300**	**700**
Cobalt	5	mg/kg	**300**	NE	NE	43	20	70	110	75	74	13	9.6	< 5	34	31	83	41	52
Copper	5	mg/kg	**17,000**	**250**	**95**	23	35	27	23	24	37	26	7.4	9.2	23	26	36	36	22
Iron	20	mg/kg	NE	NE	NE	91,000	54,000	100,000	54,000	63,000	120,000	62,000	20,000	18,000	41,000	38,000	57,000	39,000	41,000
Iron (%)	0.01	%	NE	NE	NE	9.1	5.4	10	5.4	6.3	12	6.2	2	1.8	4.1	3.8	5.7	3.9	4.1
Lead	5	mg/kg	**600**	**1,100**	**470**	8.2	7.9	7.9	< 5	< 5	8.7	< 5	9.7	7.6	< 5	7.2	< 5	5.8	< 5
Manganese	5	mg/kg	**19,000**	NE	NE	640	220	720	1,200	790	720	750	330	130	600	780	980	1,100	980
Mercury	0.1	mg/kg	**80[3]**	NE	NE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	NE	NE	NE	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	**1,200**	**660**	**120**	**440**	**270**	**540**	**680**	**550**	**1,000**	**200**	110	22	**460**	**300**	**1,100**	**450**	**650**
Selenium	2	mg/kg	**700**	NE	NE	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	NE	NE	NE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	NE	NE	NE	19	17	42	71	57	39	< 10	50	47	57	120	61	34	150
Thallium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Tin	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	NE	NE	NE	300	190	380	200	170	330	140	50	14	160	160	220	92	240
Uranium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	NE	NE	NE	110	100	130	72	82	120	38	19	18	51	47	77	41	59
Zinc	5	mg/kg	**30,000**	**1,700**	**410**	33	41	32	29	30	39	39	22	50	41	64	58	82	37

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
mg/kg = milligrams per kilogram
[1]as Chromium VI
[2]as Chromium III
[3]as inorganic Mercury
NE = not established

Nominated Investigation Levels (ILs):

Results	IL(01): ASC NEPM Health based investigation levels, public open space.
Results	IL(02): ASC NEPM EIL, urban residential and open public spaces, aged soil
Results	IL(03): ASC NEPM EIL, national parks and areas of high conservation value, aged soil

Values in highlighted cells exceed nominated ILs

Table 01
Soil Analytical Results
Metals
675.11369.00000

Laboratory ID						P18-No14178	P18-No14179	P18-No14180	P18-No14181	P18-No14182	P18-No14183	P18-No14184	P18-No14185	P18-No14186	P18-No14187	P18-No14188	P18-No14189	P18-No14190	P18-No14191
Sample ID						SP23_0.3	SP24_0-0.1	SP24_0-0.3	SP25_0-0.1	SP25_0.3	SP26_0-0.1	SP26_0.3	SP27_0-0.1	SP27_0.3	SP28_0-0.1	SP28_0.3	SP29_0-0.1	SP29_0.3	SP30_0-0.1
Sample Collection Date						06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**	**IL(02)**	**IL(03)**														
Alkali Metals																			
Calcium	5	mg/kg	NE	NE	NE	2,700	5,200	1,100	16,000	880	36,000	41,000	350	120	27,000	35,000	6,300	980	27,000
Magnesium	5	mg/kg	NE	NE	NE	9,300	8,200	21,000	9,800	10,000	19,000	11,000	7,200	2,400	11,000	9,600	9,000	3,900	18,000
Potassium	5	mg/kg	NE	NE	NE	470	1,100	430	1,100	1,200	730	820	480	98	660	570	680	670	2,100
Sodium	5	mg/kg	NE	NE	NE	20,000	24,000	21,000	18,000	22,000	12,000	19,000	21,000	20,000	16,000	13,000	16,000	13,000	1,400
Heavy Metals																			
Aluminium	10	mg/kg	NE	NE	NE	14,000	13,000	16,000	7,300	13,000	12,000	11,000	4,900	370	14,000	11,000	9,200	6,400	15,000
Antimony	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	**300**	**100**	**40**	2.7	17	5.7	15	11	13	6.7	6.6	< 2	32	14	25	2.9	11
Barium	10	mg/kg	NE	NE	NE	14	62	15	80	61	66	66	20	< 10	45	33	74	11	140
Beryllium	2	mg/kg	**90**	NE	NE	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Boron	10	mg/kg	**20,000**	NE	NE	< 10	13	< 10	33	20	45	32	< 10	< 10	55	36	< 10	< 10	32
Cadmium	0.4	mg/kg	**90**	NE	NE	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	**300**[1]	**410**[2]	**140**[2]	120	**1,000**	**250**	**1,100**	**710**	**620**	**300**	**460**	< 5	**1,600**	**710**	**1,800**	77	**540**
Cobalt	5	mg/kg	**300**	NE	NE	48	31	48	56	38	37	19	11	< 5	37	29	26	6.4	40
Copper	5	mg/kg	**17,000**	**250**	**95**	32	25	34	33	36	31	26	8.8	< 5	33	28	19	5.5	44
Iron	20	mg/kg	NE	NE	NE	28,000	47,000	34,000	75,000	45,000	50,000	34,000	23,000	240	92,000	52,000	87,000	22,000	44,000
Iron (%)	0.01	%	NE	NE	NE	2.8	4.7	3.4	7.5	4.5	5	3.4	2.3	0.02	9.2	5.2	8.7	2.2	4.4
Lead	5	mg/kg	**600**	**1,100**	**470**	< 5	< 5	< 5	6.2	5.6	< 5	< 5	< 5	< 5	5.2	< 5	7.2	< 5	5.4
Manganese	5	mg/kg	**19,000**	NE	NE	250	370	420	920	680	370	290	190	14	760	270	390	94	590
Mercury	0.1	mg/kg	**80**[3]	NE	NE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	NE	NE	NE	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	**1,200**	**660**	**120**	**180**	**340**	110	**520**	**460**	**310**	**150**	**140**	< 5	**330**	**210**	**370**	26	**490**
Selenium	2	mg/kg	**700**	NE	NE	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	NE	NE	NE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	NE	NE	NE	48	66	17	170	36	67	61	15	< 10	54	51	64	71	44
Thallium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Tin	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	NE	NE	NE	140	230	91	270	250	210	160	120	22	280	230	310	72	160
Uranium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	NE	NE	NE	34	73	39	82	64	77	61	29	< 10	140	81	98	< 10	69
Zinc	5	mg/kg	**30,000**	**1,700**	**410**	110	41	140	47	61	36	40	16	< 5	34	31	28	70	43

Notes:
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[1]as Chromium VI
[2]as Chromium III
[3]as inorganic Mercury
NE = not established

Nominated Investigation Levels (ILs):

Results	IL(01): ASC NEPM Health based investigation levels, public open space.
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Results	IL(03): ASC NEPM EIL, national parks and areas of high conservation value, aged soil

Values in highlighted cells exceed nominated ILs

Table 01
Soil Analytical Results
Metals
675.11369.00000

Laboratory ID						P18-No14192	P18-No14193	P18-No14194	P18-No14195	P18-No14196	P18-No14197	P18-No14198	P18-No14199	P18-No14200	P18-No14201	P18-No14202
Sample ID						SP31_0-0.1	SP31_0.3	SP32_0-0.1	SP32_0.3	SP33_0-0.1	SP33_0.3	SP34_0-0.1	SP34_0.3	SP35_0-0.1	SP35_0.3	SP36_0-0.1
Sample Collection Date						06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**	**IL(02)**	**IL(03)**											
Alkali Metals																
Calcium	5	mg/kg	NE	NE	NE	33,000	53,000	50,000	98,000	33,000	37,000	31,000	42,000	41,000	35,000	3,600
Magnesium	5	mg/kg	NE	NE	NE	9,600	20,000	19,000	18,000	5,700	3,500	3,200	1,800	8,800	6,200	20,000
Potassium	5	mg/kg	NE	NE	NE	680	1,100	2,500	1,600	510	400	730	670	470	520	1,100
Sodium	5	mg/kg	NE	NE	NE	3,600	6,600	500	3,200	20,000	13,000	18,000	13,000	27,000	25,000	17,000
Heavy Metals																
Aluminium	10	mg/kg	NE	NE	NE	9,500	12,000	19,000	14,000	6,500	7,100	8,400	7,800	6,100	9,600	14,000
Antimony	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	**300**	**100**	**40**	16	9.2	6.9	7.7	17	17	22	25	22	35	5.6
Barium	10	mg/kg	NE	NE	NE	55	68	110	64	33	28	45	39	23	22	40
Beryllium	2	mg/kg	**90**	NE	NE	< 2	2.1	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Boron	10	mg/kg	**20,000**	NE	NE	40	46	21	32	28	30	22	25	31	32	22
Cadmium	0.4	mg/kg	**90**	NE	NE	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	**300**[1]	**410**[2]	**140**[2]	**1,000**	**360**	**410**	**270**	**1,500**	**1,700**	**1,100**	**1,300**	**1,500**	**1,900**	**310**
Cobalt	5	mg/kg	**300**	NE	NE	36	22	34	18	99	120	86	51	65	61	32
Copper	5	mg/kg	**17,000**	**250**	**95**	47	30	35	36	8.7	12	10	9.2	11	11	32
Iron	20	mg/kg	NE	NE	NE	88,000	41,000	49,000	34,000	130,000	130,000	130,000	140,000	140,000	160,000	46,000
Iron (%)	0.01	%	NE	NE	NE	8.8	4.1	4.9	3.4	13	13	13	14	14	16	4.6
Lead	5	mg/kg	**600**	**1,100**	**470**	8.6	5.1	6.9	< 5	< 5	< 5	< 5	< 5	< 5	< 5	5.5
Manganese	5	mg/kg	**19,000**	NE	NE	460	480	1,100	530	1,300	1,400	880	780	830	520	780
Mercury	0.1	mg/kg	**80**[3]	NE	NE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	NE	NE	NE	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	**1,200**	**660**	**120**	**310**	**220**	**230**	**130**	**1,400**	**1,500**	**1,000**	**1,000**	**1,300**	**1,900**	**220**
Selenium	2	mg/kg	**700**	NE	NE	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	NE	NE	NE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	NE	NE	NE	44	72	62	170	56	53	53	65	52	49	41
Thallium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Tin	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	NE	NE	NE	250	200	210	170	280	350	250	310	330	450	150
Uranium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	NE	NE	NE	110	75	81	71	27	30	23	25	36	32	51
Zinc	5	mg/kg	**30,000**	**1,700**	**410**	42	43	62	40	14	12	17	10	20	17	69

Notes:

LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins

' - ' unable to be calculated / not analysed

mg/kg = milligrams per kilogram

[1]as Chromium VI

[2]as Chromium III

[3]as inorganic Mercury

NE = not established

Nominated Investigation Levels (ILs):

Results	IL(01): ASC NEPM Health based investigation levels, public open space.
Results	IL(02): ASC NEPM EIL, urban residential and open public spaces, aged soil
Results	IL(03): ASC NEPM EIL, national parks and areas of high conservation value, aged soil

Values in highlighted cells exceed nominated ILs

Table 01
Soil Analytical Results
Metals
675.11369.00000

Laboratory ID						P18-No14203	P18-No14204	P18-No14205	P18-No14206	P18-No14207	P18-No14208	P18-No14209
Sample ID						SP36_0.3	SP37_0-0.1	SP37_0.3	SP38_0-0.1	SP38_0.3	SP39_0-0.1	SP39_0.3
Sample Collection Date						06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**	**IL(02)**	**IL(03)**							
Alkali Metals												
Calcium	5	mg/kg	NE	NE	NE	5,400	100,000	37,000	7,500	150,000	44,000	17,000
Magnesium	5	mg/kg	NE	NE	NE	10,000	7,400	18,000	39,000	10,000	15,000	8,900
Potassium	5	mg/kg	NE	NE	NE	1,300	500	1,400	2,100	700	650	1,200
Sodium	5	mg/kg	NE	NE	NE	24,000	23,000	9,800	5,700	5,400	8,500	5,600
Heavy Metals												
Aluminium	10	mg/kg	NE	NE	NE	9,800	4,900	17,000	19,000	6,700	8,500	13,000
Antimony	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	**300**	**100**	**40**	< 2	7	3.8	23	7	12	11
Barium	10	mg/kg	NE	NE	NE	43	17	48	510	34	30	52
Beryllium	2	mg/kg	**90**	NE	NE	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Boron	10	mg/kg	**20,000**	NE	NE	11	17	11	52	22	30	20
Cadmium	0.4	mg/kg	**90**	NE	NE	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	**300**[1]	**410**[2]	**140**[2]	87	**350**	**300**	**1,000**	**310**	**490**	**820**
Cobalt	5	mg/kg	**300**	NE	NE	17	21	70	29	14	63	38
Copper	5	mg/kg	**17,000**	**250**	**95**	31	8.1	29	34	14	26	27
Iron	20	mg/kg	NE	NE	NE	32,000	34,000	37,000	72,000	24,000	52,000	70,000
Iron (%)	0.01	%	NE	NE	NE	3.2	3.4	3.7	7.2	2.4	5.2	7
Lead	5	mg/kg	**600**	**1,100**	**470**	31	< 5	11	7.1	< 5	< 5	5.9
Manganese	5	mg/kg	**19,000**	NE	NE	1,300	630	1,900	550	200	790	780
Mercury	0.1	mg/kg	**80**[3]	NE	NE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	NE	NE	NE	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	**1,200**	**660**	**120**	**120**	**300**	**280**	**360**	**160**	**530**	**340**
Selenium	2	mg/kg	**700**	NE	NE	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	NE	NE	NE	0.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	NE	NE	NE	69	530	320	67	76	66	34
Thallium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Tin	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	NE	NE	NE	53	100	70	270	98	140	230
Uranium	10	mg/kg	NE	NE	NE	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	NE	NE	NE	26	19	37	100	34	51	89
Zinc	5	mg/kg	**30,000**	**1,700**	**410**	61	14	71	38	15	27	42

Notes:

LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins

' - ' unable to be calculated / not analysed

mg/kg = milligrams per kilogram

[1]as Chromium VI

[2]as Chromium III

[3]as inorganic Mercury

NE = not established

Nominated Investigation Levels (ILs):

Results	IL(01): ASC NEPM Health based investigation levels, public open space.
Results	IL(02): ASC NEPM EIL, urban residential and open public spaces, aged soil
Results	IL(03): ASC NEPM EIL, national parks and areas of high conservation value, aged soil

Values in highlighted cells exceed nominated ILs

Table 02
Soil Analytical Results
Inorganics and Physicochemical Properties
675.11369.00000

Laboratory ID				P18-No14210	P18-No14141	P18-No14142	P18-No14211	% RPD	P18-No14212	% RPD	P18-No14143	P18-No14144	P18-No14145	P18-No14146	P18-No14147	P18-No14148	P18-No14149
Sample ID				REF1 0-0.1	SP1_0-0.1	SP1_0-0.3	QC1		QC1A		SP2_0-0.1	SP2_0-0.3	SP3_0-0.1	SP3_0-0.3	SP4_0-0.1	SP4_0-0.3	SP5_0-0.1
Sample Collection Date				06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18		06-Nov-18		06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**				**Duplicate of SP1_0.3**		**Split of SP1_0.3**								
Inorganics																	
% Clay	1	%	NE	8.8	7.5	15	12	22.22%	8.4	56.41%	6.3	6.3	15	16	5	7.3	13
% Moisture	1	%	NE	8	11	13	18	32.26%	12	8.00%	19	11	8	8	14	14	12
Ammonia (as N)	5	mg/kg	NE	< 5	< 50	< 50	8.3	-	9.8	-	< 50	< 50	< 5	< 5	160	< 50	< 5
Chloride	5	mg/kg	NE	1,100	28,000	24,000	21,000	13.33%	37,000	42.62%	8,600	6,100	7,000	6,800	16,000	15,000	17,000
Conductivity (1:5 aqueous extract at 25°C)	10	µS/cm	NE	660	16,000	8,900	9,700	8.60%	16,000	57.03%	8,900	4,300	4,400	4,000	11,000	10,000	9,800
Cyanide (free)	5	mg/kg	**240**	< 5	< 5	< 5	< 5	-	< 5	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	NE	< 5	500	270	430	45.71%	400	38.81%	740	180	28	24	880	1,000	< 5
pH (1:5 Aqueous extract at 25°C)	0.1	pH Units	NE	8.9	8.3	8.1	8.4	3.64%	8.4	3.64%	7.2	7.1	8.4	7.6	7.8	7.9	8.3
pH (units)(1:5 soil:$CaCl_2$ extract at 25°C)	0.1	pH Units	NE	8.4	8.3	8.2	8.4	2.41%	8.3	1.21%	7.1	6.9	8.4	8.1	7.7	7.9	8.3
Sulphate (as SO4)	30	mg/kg	NE	94	6,100	2,300	6,600	96.63%	6,500	95.45%	8,000	6,300	3,600	1,900	15,000	8,600	4,200
Sulphur	5	mg/kg	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	0.1	%	NE	0.8	0.3	0.3	0.2	40.00%	0.3	0.00%	< 0.1	< 0.1	0.8	1.2	0.1	0.4	0.3
Alkalinity (speciated)																	
Bicarbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	190	95	89	110	21.11%	100	11.64%	36	< 20	140	470	120	85	100
Carbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	< 20	< 20	< 20	< 20	-	< 20	-	< 20	< 20	< 20	23	< 20	< 20	< 20
Cation Exchange Capacity																	
Cation Exchange Capacity	0.05	meq/100g	NE	42	83	57	100	54.78%	76	28.57%	110	19	43	38	140	130	43
Extraneous Material																	
<2mm Fraction	0.005	g	NE	60	110	200	-	-	-	-	370	280	140	80	130	86	160
>2mm Fraction	0.005	g	NE	8.3	< 0.005	< 0.005	-	-	-	-	< 0.005	< 0.005	26	58	2.7	27	60
Analysed Material	0.1	%	NE	88	100	100	-	-	-	-	100	100	85	58	98	76	72
Extraneous Material	0.1	%	NE	12	< 0.1	< 0.1	-	-	-	-	< 0.1	< 0.1	15	42	2	24	28

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
mg/kg = milligrams per kilogram
µS/cm = microSiemans per centimetre
meq/100g = millequivalents per 100 grams of soil
NE = not established

Nominated Investigation Levels (ILs):
Results IL(01): ASC NEPM Health based investigation levels, public open space.
Values in highlighted cells exceed nominated ILs

Table 02
Soil Analytical Results
Inorganics and Physicochemical Properties
675.11369.00000

Laboratory ID				P18-No14150	P18-No14151	P18-No14152	P18-No14153	P18-No14154	P18-No14155	P18-No14156	P18-No14157	P18-No14158	P18-No14159	P18-No14160	P18-No14161	P18-No14162	P18-No14163
Sample ID				SP5_0-0.3	SP6_0-0.1	SP6_0-0.3	SP7_0-0.1	SP7_0-0.3	SP8_0-0.1	SP9_0-0.05	SP9_0.05-0.1	SP10_0-0.1	SP10_0.3	SP11_0-0.1	SP11_0.3	SP12_0-0.1	SP12_0.3
Sample Collection Date				06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**														
Inorganics																	
% Clay	1	%	NE	11	10	3.8	28	7.5	10	5	8.8	6.3	8.8	18	13	2.5	6.3
% Moisture	1	%	NE	16	9	14	26	15	22	14	10	13	16	10	20	5	16
Ammonia (as N)	5	mg/kg	NE	7.8	< 5	< 5	3,200	1,300	970	740	890	23	< 5	27	6.7	< 5	< 5
Chloride	5	mg/kg	NE	17,000	2,200	12,000	47,000	25,000	26,000	29,000	21,000	17,000	26,000	620	2,700	2,100	7,400
Conductivity (1:5 aqueous extract at 25°C)	10	µS/cm	NE	8,600	1,400	5,900	31,000	18,000	12,000	18,000	10,000	8,600	12,000	2,900	2,200	1,400	3,900
Cyanide (free)	5	mg/kg	**240**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	NE	< 5	5.7	29	69	68	< 50	< 50	< 50	16	13	49	51	< 5	< 5
pH (1:5 Aqueous extract at 25°C)	0.1	pH Units	NE	8.4	8.7	8.2	7	8.1	7.3	7.1	6.8	7.5	7.7	6.2	7.5	7.5	8
pH (units)(1:5 soil:$CaCl_2$ extract at 25°C)	0.1	pH Units	NE	8.3	8.8	8.1	7	8.1	7.3	7.1	6.8	7.4	7.5	6.2	7.5	6.8	7.7
Sulphate (as SO4)	30	mg/kg	NE	4,000	830	2,400	50,000	16,000	13,000	11,000	5,100	2,600	2,500	6,300	3,500	760	1,000
Sulphur	5	mg/kg	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	0.1	%	NE	0.4	0.1	0.4	< 0.1	0.3	0.2	0.2	< 0.1	< 0.1	< 0.1	0.7	0.8	0.3	0.7
Alkalinity (speciated)																	
Bicarbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	170	90	110	69	1,600	48	28	22	24	22	60	42	41	78
Carbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	< 20	25	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Cation Exchange Capacity																	
Cation Exchange Capacity	0.05	meq/100g	NE	39	22	33	240	83	220	170	19	14	17	43	37	8.4	29
Extraneous Material																	
<2mm Fraction	0.005	g	NE	160	200	120	69	89	180	96	150	180	170	150	57	96	21
>2mm Fraction	0.005	g	NE	120	3.2	59	< 0.005	15	< 0.005	33	1.7	30	< 0.005	60	56	12	< 0.005
Analysed Material	0.1	%	NE	58	98	66	100	86	100	74	99	86	100	71	50	88	100
Extraneous Material	0.1	%	NE	42	1.6	34	< 0.1	14	< 0.1	26	1.1	14	< 0.1	29	50	12	< 0.1

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
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mg/kg = milligrams per kilogram
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meq/100g = millequivalents per 100 grams of soil
NE = not established

Nominated Investigation Levels (ILs):
Results IL(01): ASC NEPM Health based investigation levels, public open space.
Values in highlighted cells exceed nominated ILs

Table 02
Soil Analytical Results
Inorganics and Physicochemical Properties
675.11369.00000

Laboratory ID				P18-No14164	P18-No14165	P18-No14166	P18-No14167	P18-No14168	P18-No14169	P18-No14170	P18-No14171	P18-No14172	P18-No14173	P18-No14174	P18-No14175	P18-No14176	P18-No14177
Sample ID				SP13_0-0.1	SP13_0.3	SP14_0-0.1	SP15_0-0.1	SP15_0.3	SP17_0-0.1	SP17_0-0.3	SP18_0-0.1	SP18_0.3	SP19_0-0.1	SP21_0-0.1	SP21_0-0.3	SP21_0-0.3	SP23_0-0.1
Sample Collection Date				06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**														
Inorganics																	
% Clay	1	%	NE	7.5	23	7.5	5	5	5	6.3	14	8.8	14	16	10	5	14
% Moisture	1	%	NE	12	22	9	10	10	18	22	12	20	21	18	22	17	12
Ammonia (as N)	5	mg/kg	NE	< 5	< 5	22	< 50	< 50	< 5	< 5	55	34	32	140	< 50	< 50	< 50
Chloride	5	mg/kg	NE	350	990	1,600	11,000	7,500	10,000	9,300	38,000	33,000	28,000	27,000	26,000	11,000	46,000
Conductivity (1:5 aqueous extract at 25°C)	10	µS/cm	NE	1,100	1,100	2,800	8,100	6,300	3,800	4,800	18,000	11,000	13,000	13,000	13,000	5,200	20,000
Cyanide (free)	5	mg/kg	**240**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	NE	6.2	7	28	430	300	< 5	< 5	< 5	< 5	28	88	57	< 50	< 50
pH (1:5 Aqueous extract at 25°C)	0.1	pH Units	NE	7.9	7.3	7.9	8	8.1	8.5	8.4	8.2	7.7	7.9	7.7	8.2	8.6	8
pH (units)(1:5 soil:$CaCl_2$ extract at 25°C)	0.1	pH Units	NE	7.7	6.6	7.9	8	8.1	8.5	8.2	8.2	7.5	7.9	7.6	8.1	8.6	7.4
Sulphate (as SO4)	30	mg/kg	NE	3,600	580	3,900	6,800	6,200	4,900	870	8,200	2,400	9,300	9,900	6,200	2,400	9,000
Sulphur	5	mg/kg	NE	-	-	-	-	-	-	-	-	760	8,700	-	-	-	-
Total Organic Carbon	0.1	%	NE	0.3	0.5	0.3	0.3	< 0.1	0.2	< 0.1	0.2	< 0.1	0.4	0.8	0.3	0.6	0.3
Alkalinity (speciated)																	
Bicarbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	120	240	100	77	120	67	55	90	22	86	86	130	130	40
Carbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Cation Exchange Capacity																	
Cation Exchange Capacity	0.05	meq/100g	NE	25	18	61	160	110	17	5.2	38	9.5	42	140	49	32	26
Extraneous Material																	
<2mm Fraction	0.005	g	NE	80	50	63	56	52	98	150	120	150	-	-	100	110	-
>2mm Fraction	0.005	g	NE	18	8	72	2.3	25	32	6.2	5	< 0.005	-	-	10	23	-
Analysed Material	0.1	%	NE	82	86	47	96	67	75	96	96	100	-	-	91	83	-
Extraneous Material	0.1	%	NE	18	14	53	4	33	25	3.9	4	< 0.1	-	-	8.9	17	-

Notes:
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NE = not established

Nominated Investigation Levels (ILs):
Results IL(01): ASC NEPM Health based investigation levels, public open space.
Values in highlighted cells exceed nominated ILs

Table 02
Soil Analytical Results
Inorganics and Physicochemical Properties
675.11369.00000

Laboratory ID				P18-No14178	P18-No14179	P18-No14180	P18-No14181	P18-No14182	P18-No14183	P18-No14184	P18-No14185	P18-No14186	P18-No14187	P18-No14188	P18-No14189	P18-No14190	P18-No14191
Sample ID				SP23_0.3	SP24_0-0.1	SP24_0-0.3	SP25_0-0.1	SP25_0.3	SP26_0-0.1	SP26_0.3	SP27_0-0.1	SP27_0.3	SP28_0-0.1	SP28_0.3	SP29_0-0.1	SP29_0.3	SP30_0-0.1
Sample Collection Date				06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**														
Inorganics																	
% Clay	1	%	NE	7.5	20	11	14	14	14	16	8.8	5	11	11	6.3	3.8	5
% Moisture	1	%	NE	15	10	16	15	15	20	20	18	20	13	15	15	8	8
Ammonia (as N)	5	mg/kg	NE	8.3	39	35	840	740	< 50	95	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloride	5	mg/kg	NE	29,000	48,000	27,000	28,000	39,000	28,000	26,000	41,000	30,000	20,000	18,000	25,000	22,000	660
Conductivity (1:5 aqueous extract at 25°C)	10	µS/cm	NE	18,000	16,000	14,000	16,000	18,000	9,400	12,000	13,000	9,800	12,000	11,000	12,000	11,000	1,500
Cyanide (free)	5	mg/kg	**240**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	NE	9.9	26	8.7	< 50	< 50	< 50	< 50	8.6	8.1	13	5.6	8.9	5.1	7.6
pH (1:5 Aqueous extract at 25°C)	0.1	pH Units	NE	7.5	6.3	7.4	7.7	7.6	8.6	8.3	7.7	7.6	8.4	8.3	7.8	6.5	7.4
pH (units)(1:5 soil:$CaCl_2$ extract at 25°C)	0.1	pH Units	NE	7.4	6.3	7.4	7.7	7.6	8.5	8.3	7.3	7.2	8.3	8.2	7.7	6.7	7.5
Sulphate (as SO4)	30	mg/kg	NE	4,000	9,900	3,900	19,000	11,000	9,100	7,700	5,200	2,900	5,300	4,500	7,500	5,400	4,000
Sulphur	5	mg/kg	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	0.1	%	NE	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	< 0.1	0.3
Alkalinity (speciated)																	
Bicarbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	21	28	30	140	56	1,300	450	22	< 20	84	160	26	< 20	170
Carbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	< 20	< 20	< 20	< 20	< 20	< 20	29	< 20	< 20	24	< 20	< 20	< 20	< 20
Cation Exchange Capacity																	
Cation Exchange Capacity	0.05	meq/100g	NE	7.6	49	9.2	100	9.8	54	31	3.8	7.6	55	52	28	7.9	78
Extraneous Material																	
<2mm Fraction	0.005	g	NE	-	80	59	120	120	99	90	130	150	76	110	120	99	110
>2mm Fraction	0.005	g	NE	-	32	98	5.5	< 0.005	28	5.5	< 0.005	< 0.005	37	32	9.4	< 0.005	15
Analysed Material	0.1	%	NE	-	72	38	96	100	78	94	100	100	67	78	93	100	88
Extraneous Material	0.1	%	NE	-	28	62	4.4	< 0.1	22	5.7	< 0.1	< 0.1	33	22	7	< 0.1	12

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
mg/kg = milligrams per kilogram
µS/cm = microSiemans per centimetre
meq/100g = millequivalents per 100 grams of soil
NE = not established

Nominated Investigation Levels (ILs):
Results IL(01): ASC NEPM Health based investigation levels, public open space.
Values in highlighted cells exceed nominated ILs

Table 02
Soil Analytical Results
Inorganics and Physicochemical Properties
675.11369.00000

Laboratory ID				P18-No14192	P18-No14193	P18-No14194	P18-No14195	P18-No14196	P18-No14197	P18-No14198	P18-No14199	P18-No14200	P18-No14201	P18-No14202	P18-No14203	P18-No14204	P18-No14205
Sample ID				SP31_0-0.1	SP31_0.3	SP32_0-0.1	SP32_0.3	SP33_0-0.1	SP33_0.3	SP34_0-0.1	SP34_0.3	SP35_0-0.1	SP35_0.3	SP36_0-0.1	SP36_0.3	SP37_0-0.1	SP37_0.3
Sample Collection Date				06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**														
Inorganics																	
% Clay	1	%	NE	7.5	13	10	13	6.3	5	7.5	8.8	8.8	10	8.8	10	8.8	7.5
% Moisture	1	%	NE	9	27	14	7	29	34	33	42	33	38	22	13	15	15
Ammonia (as N)	5	mg/kg	NE	< 5	< 50	< 5	< 5	1,600	1,400	830	1,300	1,800	2,200	1,000	920	600	560
Chloride	5	mg/kg	NE	4,900	7,400	160	3,300	19,000	19,000	21,000	17,000	37,000	34,000	32,000	32,000	33,000	22,000
Conductivity (1:5 aqueous extract at 25°C)	10	µS/cm	NE	4,500	7,300	260	2,400	15,000	11,000	13,000	12,000	17,000	14,000	12,000	16,000	19,000	15,000
Cyanide (free)	5	mg/kg	**240**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	NE	50	79	< 5	< 5	< 50	< 50	260	450	180	170	< 5	< 5	7.5	< 5
pH (1:5 Aqueous extract at 25°C)	0.1	pH Units	NE	8.4	8.5	9.2	9.1	7.1	7.7	7.4	7.6	6.9	7	7.2	7.1	7.1	7.2
pH (units)(1:5 soil:$CaCl_2$ extract at 25°C)	0.1	pH Units	NE	8.4	8.4	8.5	9.1	7.1	7.6	7.4	7.5	6.9	7	7.2	7	7.1	7.2
Sulphate (as SO4)	30	mg/kg	NE	5,000	8,500	35	930	19,000	18,000	19,000	16,000	25,000	22,000	16,000	16,000	26,000	17,000
Sulphur	5	mg/kg	NE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	0.1	%	NE	0.2	0.1	0.6	0.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.1
Alkalinity (speciated)																	
Bicarbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	1,200	240	4,600	960	47	120	51	70	33	54	33	32	34	37
Carbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	< 20	< 20	240	27	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Cation Exchange Capacity																	
Cation Exchange Capacity	0.05	meq/100g	NE	92	77	42	42	180	200	150	220	230	200	10	15	210	140
Extraneous Material																	
<2mm Fraction	0.005	g	NE	96	120	86	67	98	99	81	89	82	73	150	110	130	110
>2mm Fraction	0.005	g	NE	15	9.9	< 0.005	73	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.7	< 0.005	< 0.005	57
Analysed Material	0.1	%	NE	87	93	100	48	100	100	100	100	100	100	99	100	100	66
Extraneous Material	0.1	%	NE	13	7.3	< 0.1	52	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.1	< 0.1	< 0.1	34

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
mg/kg = milligrams per kilogram
µS/cm = microSiemans per centimetre
meq/100g = millequivalents per 100 grams of soil
NE = not established

Nominated Investigation Levels (ILs):
Results IL(01): ASC NEPM Health based investigation levels, public open space.
Values in highlighted cells exceed nominated ILs

Table 02
Soil Analytical Results
Inorganics and Physicochemical Properties
675.11369.00000

Laboratory ID				P18-No14206	P18-No14207	P18-No14208	P18-No14209
Sample ID				SP38_0-0.1	SP38_0.3	SP39_0-0.1	SP39_0.3
Sample Collection Date				06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**				
Inorganics							
% Clay	1	%	NE	18	2.5	5	8.8
% Moisture	1	%	NE	20	10	9	15
Ammonia (as N)	5	mg/kg	NE	8.9	< 5	23	8.1
Chloride	5	mg/kg	NE	4,400	7,400	13,000	5,500
Conductivity (1:5 aqueous extract at 25°C)	10	µS/cm	NE	4,400	6,500	8,800	4,500
Cyanide (free)	5	mg/kg	**240**	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	NE	15	< 5	290	110
pH (1:5 Aqueous extract at 25°C)	0.1	pH Units	NE	7.4	7.9	8.2	8.2
pH (units)(1:5 soil:$CaCl_2$ extract at 25°C)	0.1	pH Units	NE	7.6	8.2	8.2	8.1
Sulphate (as SO4)	30	mg/kg	NE	9,200	11,000	8,000	7,200
Sulphur	5	mg/kg	NE	-	-	-	-
Total Organic Carbon	0.1	%	NE	0.5	0.3	< 0.1	0.2
Alkalinity (speciated)							
Bicarbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	110	330	71	79
Carbonate Alkalinity (as $CaCO_3$)	20	mg/kg	NE	< 20	< 20	< 20	< 20
Cation Exchange Capacity							
Cation Exchange Capacity	0.05	meq/100g	NE	60	220	200	44
Extraneous Material							
<2mm Fraction	0.005	g	NE	110	110	110	72
>2mm Fraction	0.005	g	NE	3.1	2.1	13	97
Analysed Material	0.1	%	NE	97	98	89	43
Extraneous Material	0.1	%	NE	2.8	1.9	11	57

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
mg/kg = milligrams per kilogram
µS/cm = microSiemans per centimetre
meq/100g = millequivalents per 100 grams of soil
NE = not established

Nominated Investigation Levels (ILs):
Results IL(01): ASC NEPM Health based investigation levels, public open space.
Values in highlighted cells exceed nominated ILs

Table 03
Soil Analytical Results
Acid Sulphate Soil
675.11369.00000

Laboratory ID			P18-No14210	P18-No14141	P18-No14142	P18-No14211	% RPD	P18-No14212	% RPD	P18-No14143	P18-No14144	P18-No14145	P18-No14146	P18-No14147	P18-No14148	P18-No14149	P18-No14150
Sample ID			REF1 0-0.1	SP1_0-0.1	SP1_0-0.3	QC1		QC1A		SP2_0-0.1	SP2_0-0.3	SP3_0-0.1	SP3_0-0.3	SP4_0-0.1	SP4_0-0.3	SP5_0-0.1	SP5_0-0.3
Sample Collection Date			06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18		06-Nov-18		06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)				**Duplicate of SP1_0.3**		**Split of SP1_0.3**									
Acid Sulfate Soils Field pH Test																	
pH-F (Field pH test)*	0.1	pH Units	8.5	8.2	8.1	8.2	1.23%	8.1	0.00%	6.8	6.4	8.3	8.7	7.6	7.5	8.1	8.2
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	8.7	8.3	8.7	8.5	2.33%	8.4	3.51%	6.8	6.6	8.5	8.7	7.5	7.7	8.2	7.8
Reaction Ratings*	1	-	4	4	4	4	0.00%	4	0.00%	4	4	4	4	4	4	4	4
Chromium Suite (Minus ANC- WA)																	
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H^+/t	1,500	880	1,000	-	-	-	-	81	77	3,000	5,100	310	850	720	760
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)	0.02	%S	2.4	1.4	1.6	-	-	-	-	0.13	0.12	4.8	8.2	0.5	1.4	1.2	1.2
Acid Neutralising Capacity (ANCbt)	0.01	% $CaCO_3$	7.5	4.4	5.1	-	-	-	-	0	0	15	26	1.6	4.2	4	4
Acid trail - Titratable Actual Acidity	2	mol H^+/t	< 2	< 2	< 2	-	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
ANC Fineness Factor	-	factor	1.5	1.5	1.5	-	-	-	-	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Chromium Reducible Sulfur	0.005	%S	< 0.005	< 0.005	< 0.005	-	-	-	-	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H^+/t	< 3	< 3	< 3	-	-	-	-	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
CRS Suite - Liming Rate	1	kg $CaCO_3$/t	< 1	< 1	< 1	-	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
CRS Suite - Net Acidity (Acidity Units)	10	mol H^+/t	< 10	< 10	< 10	-	-	-	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CRS Suite - Net Acidity (Sulfur Units)	0.02	%S	< 0.02	< 0.02	< 0.02	-	-	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
CRS suite WA (-ANC) - Liming Rate	1	kg $CaCO_3$/t	< 1	< 1	< 1	-	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H^+/t	< 10	< 10	< 10	-	-	-	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	%S	< 0.02	< 0.02	< 0.02	-	-	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
HCl Extractable Sulfur	0.02	%S	n/a	n/a	n/a	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	%S	n/a	n/a	n/a	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H^+/t	n/a	n/a	n/a	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite	0.02	%S	n/a	n/a	n/a	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
pH-KCL	0.1	pH Units	9	8.7	8.8	-	-	-	-	7	6.6	9	9.1	7.8	7.9	8.7	8.8
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	-	-	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Sulfur - KCl Extractable	0.02	%S	n/a	n/a	n/a	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
%S = percentage sulphur
kg $CaCO_3$/t = kilogram of calcium carbonate per tonne
mol H^+/t = mole hydrogen ion per tonne
%$CaCO_3$ = percentage calcium carbonate
NE = not established

Table 03
Soil Analytical Results
Acid Sulphate Soil
675.11369.00000

Laboratory ID			P18-No14151	P18-No14152	P18-No14153	P18-No14154	P18-No14155	P18-No14156	P18-No14157	P18-No14158	P18-No14159	P18-No14160	P18-No14161	P18-No14162	P18-No14163	P18-No14164	P18-No14165
Sample ID			SP6_0-0.1	SP6_0-0.3	SP7_0-0.1	SP7_0-0.3	SP8_0-0.1	SP9_0-0.05	SP9_0.05-0.1	SP10_0-0.1	SP10_0.3	SP11_0-0.1	SP11_0.3	SP12_0-0.1	SP12_0.3	SP13_0-0.1	SP13_0.3
Sample Collection Date			06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)															
Acid Sulfate Soils Field pH Test																	
pH-F (Field pH test)*	0.1	pH Units	7.8	8.7	6.9	8	7.1	7	6.9	7.5	7.7	6.1	7	7	7.9	7.5	7.1
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	8.1	8.5	7	8.2	7.4	7.2	6	7.6	7.4	4.8	7.6	7.1	6.9	7.5	5.8
Reaction Ratings*	1	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Chromium Suite (Minus ANC- WA)																	
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H^+/t	430	580	160	1,200	450	290	180	350	170	n/a	820	83	490	210	99
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)	0.02	%S	0.68	0.93	0.26	1.9	0.72	0.47	0.28	0.56	0.27	n/a	1.3	0.13	0.78	0.34	0.16
Acid Neutralising Capacity (ANCbt)	0.01	% $CaCO_3$	2.1	2.9	0.82	6	2.3	1.5	0.88	2	0.85	n/a	4.1	0.42	2.4	1.1	0.5
Acid trail - Titratable Actual Acidity	2	mol H^+/t	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	4	< 2	< 2	< 2	< 2	< 2
ANC Fineness Factor	-	factor	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Chromium Reducible Sulfur	0.005	%S	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H^+/t	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
CRS Suite - Liming Rate	1	kg $CaCO_3$/t	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
CRS Suite - Net Acidity (Acidity Units)	10	mol H^+/t	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CRS Suite - Net Acidity (Sulfur Units)	0.02	%S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
CRS suite WA (-ANC) - Liming Rate	1	kg $CaCO_3$/t	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H^+/t	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	%S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
HCl Extractable Sulfur	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H^+/t	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
pH-KCL	0.1	pH Units	8.4	9	6.9	8.5	7.6	7.4	6.7	7.9	7.6	6.1	7.9	6.8	8.5	8.2	6.6
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Sulfur - KCl Extractable	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
%S = percentage sulphur
kg $CaCO_3$/t = kilogram of calcium carbonate per tonne
mol H^+/t = mole hydrogen ion per tonne
%$CaCO_3$ = percentage calcium carbonate
NE = not established

Table 03
Soil Analytical Results
Acid Sulphate Soil
675.11369.00000

Laboratory ID			P18-No14166	P18-No14167	P18-No14168	P18-No14169	P18-No14170	P18-No14171	P18-No14172	P18-No14173	P18-No14174	P18-No14175	P18-No14176	P18-No14177	P18-No14178	P18-No14179	P18-No14180
Sample ID			SP14_0-0.1	SP15_0-0.1	SP15_0.3	SP17_0-0.1	SP17_0-0.3	SP18_0-0.1	SP18_0.3	SP19_0-0.1	SP21_0-0.1	SP21_0-0.3	SP21_0-0.3	SP23_0-0.1	SP23_0.3	SP24_0-0.1	SP24_0-0.3
Sample Collection Date			06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)															
Acid Sulfate Soils Field pH Test																	
pH-F (Field pH test)*	0.1	pH Units	7.9	7.9	7.9	8.4	7.7	7.6	7.4	7.4	7.3	7.9	8.3	7.1	7.2	6.7	7.1
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	8.2	7.9	8.1	8.4	7.6	7.6	7.6	7.4	7.3	8.5	8.7	7.5	6.9	6.4	7.3
Reaction Ratings*	1	-	4	4	4	4	2	4	4	4	4	4	4	4	4	4	4
Chromium Suite (Minus ANC- WA)																	
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H^+/t	100	810	1,400	350	37	290	55	-	-	1,200	1,400	-	-	250	240
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)	0.02	%S	0.16	1.3	2.2	0.57	0.06	0.47	0.09	-	-	1.9	2.2	-	-	0.4	0.38
Acid Neutralising Capacity (ANCbt)	0.01	% $CaCO_3$	0.5	4.1	6.8	1.8	0.19	1.5	0	-	-	6	6.8	-	-	1	1
Acid trail - Titratable Actual Acidity	2	mol H^+/t	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	< 2	< 2	-	-	< 2	< 2
ANC Fineness Factor	-	factor	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	1.5	1.5	-	-	1.5	1.5
Chromium Reducible Sulfur	0.005	%S	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	-	-	< 0.005	< 0.005	-	-	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H^+/t	< 3	< 3	< 3	< 3	< 3	< 3	< 3	-	-	< 3	< 3	-	-	< 3	< 3
CRS Suite - Liming Rate	1	kg $CaCO_3$/t	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	< 1	< 1	-	-	< 1	< 1
CRS Suite - Net Acidity (Acidity Units)	10	mol H^+/t	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	-	< 10	< 10	-	-	< 10	< 10
CRS Suite - Net Acidity (Sulfur Units)	0.02	%S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	-	-	< 0.02	< 0.02	-	-	< 0.02	< 0.02
CRS suite WA (-ANC) - Liming Rate	1	kg $CaCO_3$/t	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	< 1	< 1	-	-	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H^+/t	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	-	< 10	< 10	-	-	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	%S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	-	-	< 0.02	< 0.02	-	-	< 0.02	< 0.02
HCl Extractable Sulfur	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-	-	n/a	n/a	-	-	n/a	n/a
Net Acid soluble sulfur	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-	-	n/a	n/a	-	-	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H^+/t	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-	-	n/a	n/a	-	-	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-	-	n/a	n/a	-	-	n/a	n/a
pH-KCL	0.1	pH Units	8.7	8.3	8.7	9.1	8	8.4	7.3	-	-	9.1	9.4	-	-	7.9	8
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	-	-	< 0.02	< 0.02	-	-	< 0.02	< 0.02
Sulfur - KCl Extractable	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-	-	n/a	n/a	-	-	n/a	n/a

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
%S = percentage sulphur
kg $CaCO_3$/t = kilogram of calcium carbonate per tonne
mol H^+/t = mole hydrogen ion per tonne
%$CaCO_3$ = percentage calcium carbonate
NE = not established

Table 03
Soil Analytical Results
Acid Sulphate Soil
675.11369.00000

Laboratory ID			P18-No14181	P18-No14182	P18-No14183	P18-No14184	P18-No14185	P18-No14186	P18-No14187	P18-No14188	P18-No14189	P18-No14190	P18-No14191	P18-No14192	P18-No14193	P18-No14194	P18-No14195
Sample ID			SP25_0-0.1	SP25_0.3	SP26_0-0.1	SP26_0.3	SP27_0-0.1	SP27_0.3	SP28_0-0.1	SP28_0.3	SP29_0-0.1	SP29_0.3	SP30_0-0.1	SP31_0-0.1	SP31_0.3	SP32_0-0.1	SP32_0.3
Sample Collection Date			06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)															
Acid Sulfate Soils Field pH Test																	
pH-F (Field pH test)*	0.1	pH Units	7.3	7.3	8.5	7.7	7.3	6.8	8	8	7.7	7.1	8.1	8.2	8.1	8.9	8.9
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.4	7.6	8.6	8.5	7.3	6.3	8.1	8.9	7.5	8.5	8.4	8.7	8.5	9.3	9.2
Reaction Ratings*	1	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Chromium Suite (Minus ANC- WA)																	
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H^+/t	310	260	1,400	1,600	240	< 2	980	1,200	400	31	930	1,400	2,400	2,500	5,100
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)	0.02	%S	0.5	0.41	2.2	2.6	0.38	< 0.02	1.6	2	0.64	0.05	1.5	2.3	3.8	4	8.2
Acid Neutralising Capacity (ANCbt)	0.01	% $CaCO_3$	1.6	1.3	6.8	8.2	1.2	< 0.01	5	6	2	0.15	4.7	7	12	12	25
Acid trail - Titratable Actual Acidity	2	mol H^+/t	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
ANC Fineness Factor	-	factor	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Chromium Reducible Sulfur	0.005	%S	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H^+/t	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
CRS Suite - Liming Rate	1	kg $CaCO_3$/t	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
CRS Suite - Net Acidity (Acidity Units)	10	mol H^+/t	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CRS Suite - Net Acidity (Sulfur Units)	0.02	%S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
CRS suite WA (-ANC) - Liming Rate	1	kg $CaCO_3$/t	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H^+/t	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	%S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
HCl Extractable Sulfur	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H^+/t	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
pH-KCL	0.1	pH Units	8.1	7.9	8.9	8.9	8.3	7.1	8.9	8.9	8.5	8.3	8.5	9.1	8.9	9.2	9.3
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Sulfur - KCl Extractable	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
%S = percentage sulphur
kg $CaCO_3$/t = kilogram of calcium carbonate per tonne
mol H^+/t = mole hydrogen ion per tonne
%$CaCO_3$ = percentage calcium carbonate
NE = not established

Table 03
Soil Analytical Results
Acid Sulphate Soil
675.11369.00000

Laboratory ID			P18-No14196	P18-No14197	P18-No14198	P18-No14199	P18-No14200	P18-No14201	P18-No14202	P18-No14203	P18-No14204	P18-No14205	P18-No14206	P18-No14207	P18-No14208	P18-No14209
Sample ID			SP33_0-0.1	SP33_0.3	SP34_0-0.1	SP34_0.3	SP35_0-0.1	SP35_0.3	SP36_0-0.1	SP36_0.3	SP37_0-0.1	SP37_0.3	SP38_0-0.1	SP38_0.3	SP39_0-0.1	SP39_0.3
Sample Collection Date			06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18	06-Nov-18
Analyte	Unit	LOR(01)														
Acid Sulfate Soils Field pH Test																
pH-F (Field pH test)*	0.1	pH Units	6.9	7.3	7.3	7.3	6.7	6.9	6.8	7	7	7	7.8	8	7.8	8
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	6.9	7.4	7.2	7.1	6.7	6.6	7.3	7.3	7.6	7.7	7.6	8.8	7.9	8.1
Reaction Ratings*	1	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Chromium Suite (Minus ANC- WA)																
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H^+/t	62	190	34	35	19	n/a	120	67	100	87	610	750	1,400	670
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)	0.02	%S	0.1	0.31	0.05	0.06	0.03	n/a	0.2	0.11	0.16	0.14	0.98	1.2	2.2	1.1
Acid Neutralising Capacity (ANCbt)	0.01	% $CaCO_3$	0	1	0	0	0.1	n/a	0.61	0.34	0.51	0.44	3.1	3.8	6.9	3.3
Acid trail - Titratable Actual Acidity	2	mol H^+/t	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
ANC Fineness Factor	-	factor	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Chromium Reducible Sulfur	0.005	%S	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H^+/t	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
CRS Suite - Liming Rate	1	kg $CaCO_3$/t	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
CRS Suite - Net Acidity (Acidity Units)	10	mol H^+/t	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CRS Suite - Net Acidity (Sulfur Units)	0.02	%S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
CRS suite WA (-ANC) - Liming Rate	1	kg $CaCO_3$/t	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H^+/t	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	%S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
HCl Extractable Sulfur	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H^+/t	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
pH-KCL	0.1	pH Units	7.6	7.8	7.1	7.1	6.5	6.4	7.7	7.4	7.8	8	8.5	8.8	8.6	8.8
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Sulfur - KCl Extractable	0.02	%S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes:
LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins
' - ' unable to be calculated / not analysed
%S = percentage sulphur
kg $CaCO_3$/t = kilogram of calcium carbonate per tonne
mol H^+/t = mole hydrogen ion per tonne
%$CaCO_3$ = percentage calcium carbonate
NE = not established

Table 04
Groundwater Gauging Data
675.11369.00000

Well ID	Date	Total Depth	SWL	Dissolved Oxygen	Electrical Conductivity	Total Dissovled Solids	pH	Redox Potenital (ORP)	Redox Potenital (E_h)	Temperature
		[mbTOC]	[mbTOC]	[mg/L]	[µS/cm]	[mg/L]	[pH units]	[mV]	[mV]	[°C]
BB01A	07-Nov-18	8.15	-	Well dry - insufficient water column						
BB01B	07-Nov-18	12.99	12.08	Well dry - insufficient water column						
BMH01	07-Nov-18	12.24	9.64	3.08	110,031.00	76,115.00	6.78	162.20	386.75	22.20
BMH01A	07-Nov-18	28.79	10.69	1.45	159,182.00	109,265.00	6.07	166.00	390.55	22.20
BMH02	07-Nov-18	5.60	4.90	0.04	114,572.00	81,770.00	6.63	163.40	389.54	20.30
BMH02A	07-Nov-18	9.52	4.93	0.86	137,774.00	97,630.00	6.72	174.40	400.20	20.70
BMH04	07-Nov-18	8.95	2.03	2.52	120,615.00	82,810.00	7.36	174.40	398.95	22.20
BMH06	07-Nov-18	5.80	-	Well dry - insufficient water column						
BMH06A	07-Nov-18	10.90	9.04	0.15	190,239.00	123,695.00	5.74	155.30	379.85	22.20
BMH08	07-Nov-18	7.74	1.95	1.60	176,136.00	119,015.00	6.23	149.80	373.68	23.00
BMH08A	07-Nov-18	13.12	2.05	1.40	177,767.00	121,030.00	6.37	149.30	372.50	23.80
BMH09	07-Nov-18	3.25	1.03	0.22	154,130.00	100,165.00	6.68	161.90	386.28	22.40
BMH09A	07-Nov-18	6.60	1.13	1.29	159,577.00	103,610.00	6.74	161.80	386.77	21.70
BMH10	07-Nov-18	12.82	1.94	0.33	192,702.00	132,145.00	6.07	160.10	384.65	22.20
BMH10A	07-Nov-18	4.37	1.82	0.24	194,870.00	126,685.00	6.07	158.30	382.93	22.10
BMH11	07-Nov-18	5.92	2.00	0.11	198,082.00	135,655.00	6.37	157.80	382.18	22.40
BMH11A	07-Nov-18	4.68	1.96	0.05	207,018.00	134,949.00	6.47	157.00	380.96	22.90
BMH12	07-Nov-18	12.54	1.91	0.11	192,730.00	131,950.00	6.36	155.50	379.80	22.50
BMH12A	07-Nov-18	4.75	1.83	0.17	192,155.00	128,765.00	6.67	154.90	378.36	23.50
BMH13	07-Nov-18	13.24	12.38	0.06	90,654.00	62,010.00	6.85	55.90	280.20	22.50
BMH13A	07-Nov-18	4.26	-	Well dry - insufficient water column						

Notes:

SWL = Static Water Level
mbTOC = metres below top of casing
mbgs = metres below ground surface
TOC = Top of Casing
mRL = metres above relative level
mg/L = milligrams per litre
µS/cm = micro Siemens per centimetre
mV = millivolts
°C = degrees Celsius
L = litres

* = Redox potential was measured with Ag/AgCl 4M KCl probe. Redox potential referenced to the Standard Hydrogen Electrode (SHE) and noted as Eh is calculated as follows:
$E_h(25°C) = E_t - 0.198 \times (T - 25) + \sqrt{(a - b \times T)}$

Table 05
Groundwater Analytical Results
Metals and Inorganics
675.11369.00000

Laboratory ID					P18-No14214	P18-No14213	P18-No14219	P18-No14220	P18-No14215	P18-No14216	P18-No14217	P18-No14218
Sample ID					BMH02	BMH04	BMH06	BMH08	BMH09	BMH10	BMH11	BMH12
Sample Collection Date					07-Nov-18	07-Nov-18	07-Nov-18	07-Nov-18	07-Nov-18	07-Nov-18	07-Nov-18	07-Nov-18
Analyte	Unit	LOR(01)	**IL(01)**	**IL(02)**								
Heavy Metals (Filtered)												
Aluminium	mg/L	0.05	NE	NE	< 0.05	< 0.25	< 0.25	< 0.05	< 0.05	-	0.11	< 0.25
Antimony	mg/L	0.005	NE	NE	< 0.025	< 0.025	< 0.025	< 0.005	< 0.025	-	< 0.025	< 0.025
Arsenic	mg/L	0.001	NE	NE	< 0.005	< 0.005	< 0.005	0.001	< 0.005	-	< 0.005	< 0.005
Barium	mg/L	0.02	NE	NE	< 0.025	< 0.025	< 0.025	0.02	< 0.025	-	0.05	< 0.02
Beryllium	mg/L	0.001	NE	NE	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	-	< 0.005	< 0.005
Bismuth	mg/L	0.005	NE	NE	< 0.025	< 0.025	< 0.025	< 0.005	< 0.025	-	< 0.025	< 0.025
Boron	mg/L	0.05	NE	NE	6.9	1.2	18	0.54	9	-	3.3	2.3
Cadmium	mg/L	0.0002	**0.0055**	**0.0007**	**0.0045**	**0.0029**	**0.0096**	**0.0019**	**0.0035**	-	**0.0041**	**0.0038**
Chromium	mg/L	0.001	**0.0044**	**0.0044**	0.002	**0.02**	< 0.005	**0.052**	< 0.005	-	< 0.005	< 0.005
Cobalt	mg/L	0.001	**0.001**	**0.001**	< 0.005	< 0.005	**1.9**	< 0.001	**0.014**	-	**0.17**	**0.048**
Copper	mg/L	0.001	**0.0013**	**0.0013**	< 0.005	< 0.005	**0.037**	0.002	< 0.005	-	**0.049**	< 0.005
Lead	mg/L	0.001	**0.0044**	**0.0044**	< 0.005	**0.012**	**0.063**	**0.012**	< 0.005	-	< 0.005	< 0.005
Manganese	mg/L	0.005	NE	NE	1.2	0.036	210	0.017	39	-	82	13
Mercury	mg/L	0.0001	**0.0004**	**0.0001**	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	-	< 0.0001	< 0.0001
Molybdenum	mg/L	0.005	NE	NE	< 0.025	< 0.025	< 0.025	< 0.005	< 0.025	-	< 0.025	< 0.025
Nickel	mg/L	0.001	**0.07**	**0.007**	**0.15**	**0.047**	**51**	0.006	**1.6**	-	**4.6**	**1.8**
Selenium	mg/L	0.001	NE	NE	0.005	< 0.005	0.009	0.009	< 0.005	-	< 0.005	< 0.005
Silver	mg/L	0.005	**0.0014**	**0.0014**	< 0.025	< 0.025	< 0.025	< 0.005	< 0.025	-	< 0.025	< 0.025
Strontium	mg/L	0.005	NE	NE	11	10	2.4	10	11	-	14	14
Thallium	mg/L	0.005	NE	NE	< 0.025	< 0.025	< 0.025	< 0.005	< 0.025	-	< 0.025	< 0.025
Tin	mg/L	0.005	NE	NE	< 0.025	< 0.025	< 0.025	< 0.005	< 0.025	-	< 0.025	< 0.025
Titanium	mg/L	0.005	NE	NE	< 0.025	< 0.025	< 0.025	< 0.005	< 0.025	-	< 0.025	< 0.025
Uranium	mg/L	0.005	NE	NE	< 0.025	< 0.025	< 0.025	< 0.005	< 0.025	-	< 0.025	< 0.025
Vanadium	mg/L	0.005	**0.1**	**0.1**	< 0.025	< 0.025	< 0.025	< 0.005	< 0.025	-	< 0.025	< 0.025
Zinc	mg/L	0.005	**0.015**	**0.015**	**0.079**	**0.17**	**0.3**	**0.071**	**0.34**	-	**0.15**	**0.06**
Inorganics												
Ammonia (as N)	mg/L	0.01	**0.91**	**0.91**	**1,700**	< 0.01	**14,000**	0.21	**3,100**	**840**	**650**	**420**
Cyanide (total)	mg/L	0.005	**0.004**	**0.004**	**0.1**	< 0.005	< 0.005	< 0.005	**0.056**	**0.025**	**0.009**	**0.087**
Nitrate & Nitrite (as N)	mg/L	0.05	NE	NE	19	18	20	14	1.2	7.5	8.1	30
Nitrate (as N)	mg/L	0.02	NE	NE	18	18	20	14	1.2	7.5	7.8	30
Nitrite (as N)	mg/L	0.02	NE	NE	0.3	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.29	0.31
Organic Nitrogen (as N)	mg/L	0.2	NE	NE	< 1	2.7	< 1	2.7	< 1	< 1	< 1	< 1
Total Kjeldahl Nitrogen (as N)	mg/L	0.2	NE	NE	1,700	2.7	14,000	2.9	3,100	840	650	420
Total Nitrogen (as N)	mg/L	0.2	NE	NE	1,720	21	14,000	17	3,100	850	660	450

Notes:

LOR(01) = Limit of Reporting (= Method Detection Limit) for Eurofins

' - ' unable to be calculated / not analysed

mg/L = milligrams per litre

NE = not established

Nominated Investigation Levels (ILs):

Results	IL(01): ANZG (2018) Marine Water 95% toxicant DGVs
Results	IL(02): ASC NEPM Groundwater Investigation Levels, Marine Waters

Values in highlighted cells exceed nominated ILs

APPENDIX C

Photography Log

Sample Location SP05 – South East corner of LRSF

LRSF looking East from SP02

Sample Location SP02 –Representative soil from LRSF.

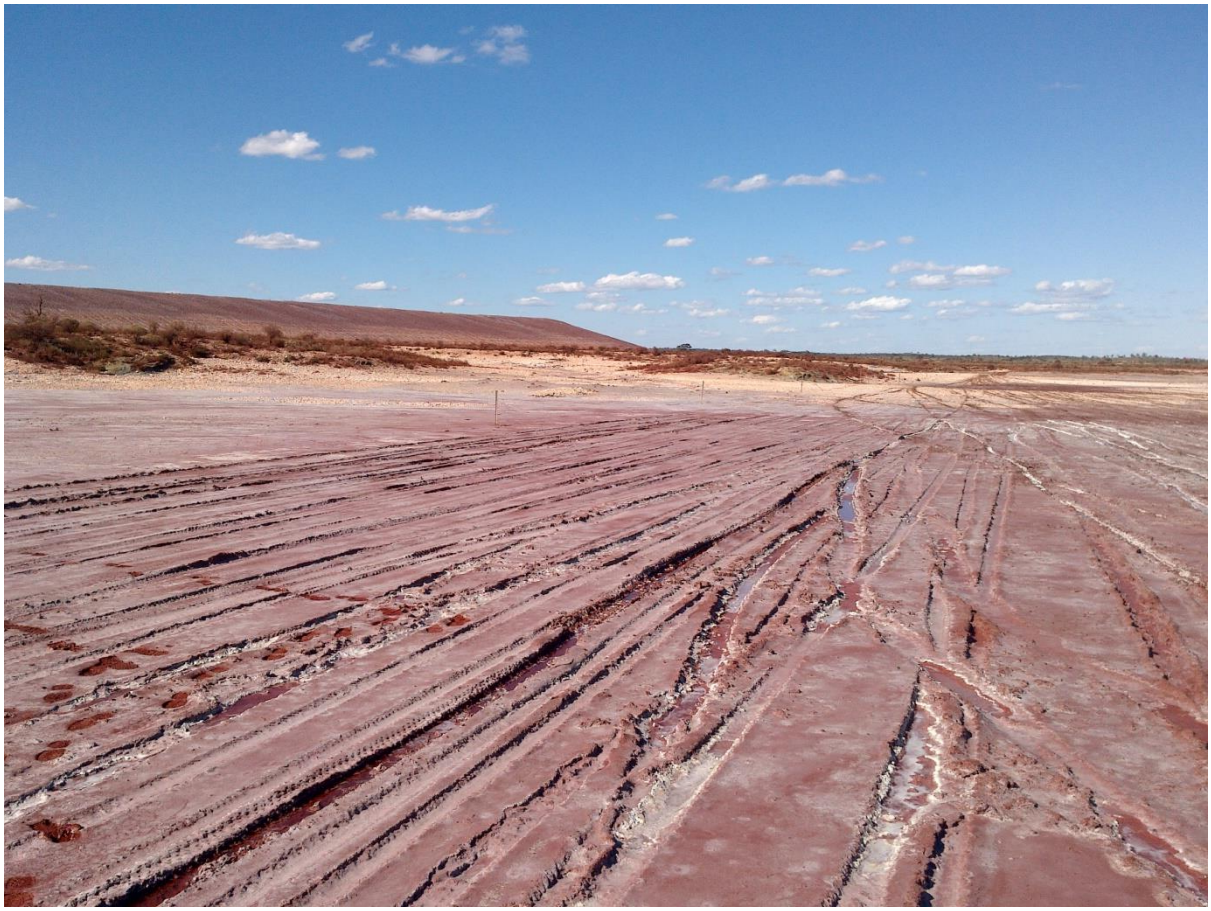
Looking North up to LRSF from sample location SP07. Erosion evident on walls of LRSF at all locations.

Sample Location SP07 – Runoff from Southern Wall of LRSF.

Sample Location SP14 and erosion from North East wall of LRSF.

Reference location looking South East across the LRSF.

Significant erosion of the Eastern Wall of LRSF by sample location SP30.



Evidence of area still being used, adjacent to sample location SP08.

Sample location SP08. Only surface sample taken due to presence of water.

Crystaline material on surface adjacent to SP08.

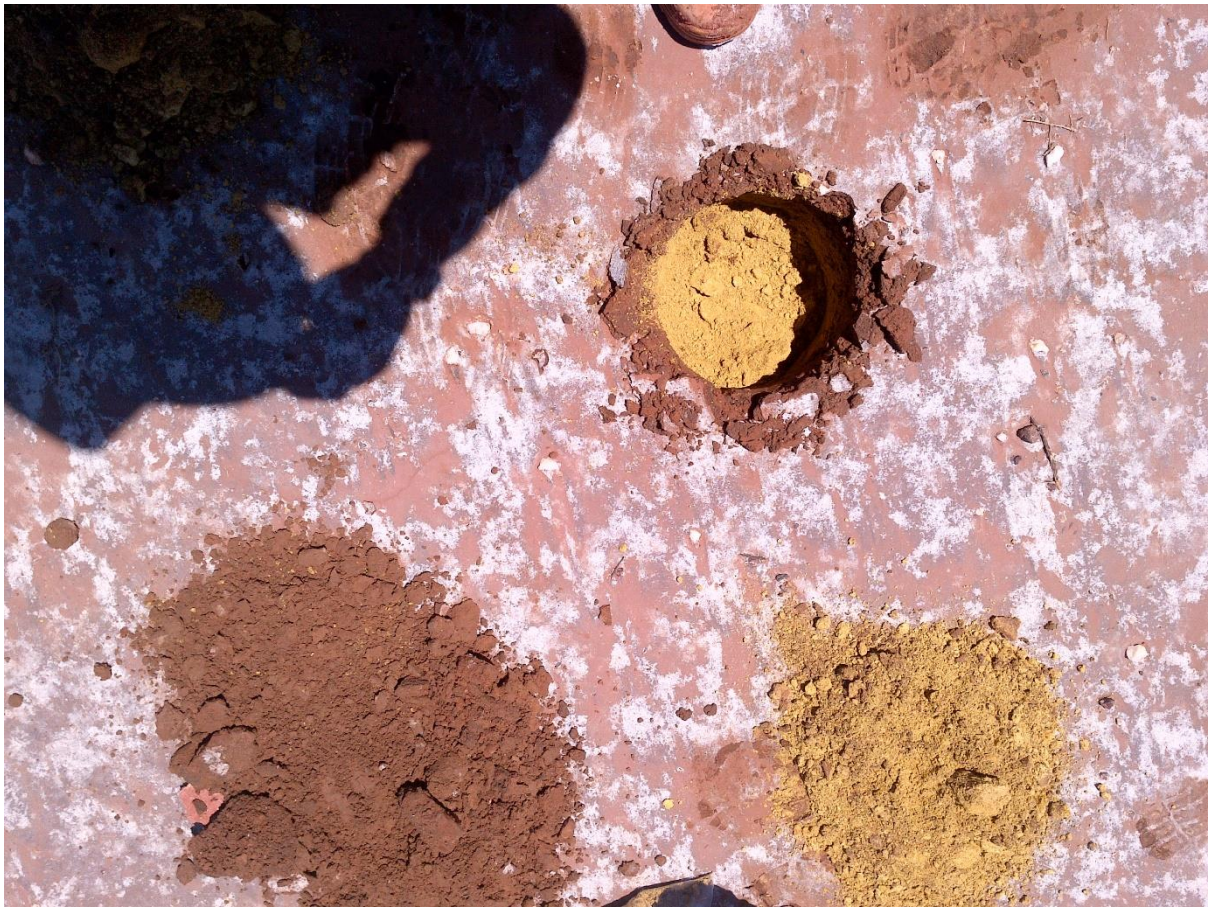
Change in Lithology at SP09.

Looking North from SP10 to LRSF.

Change in lithology at SP10.

Sample location SP12.

Looking West from SP12 to LRSF.



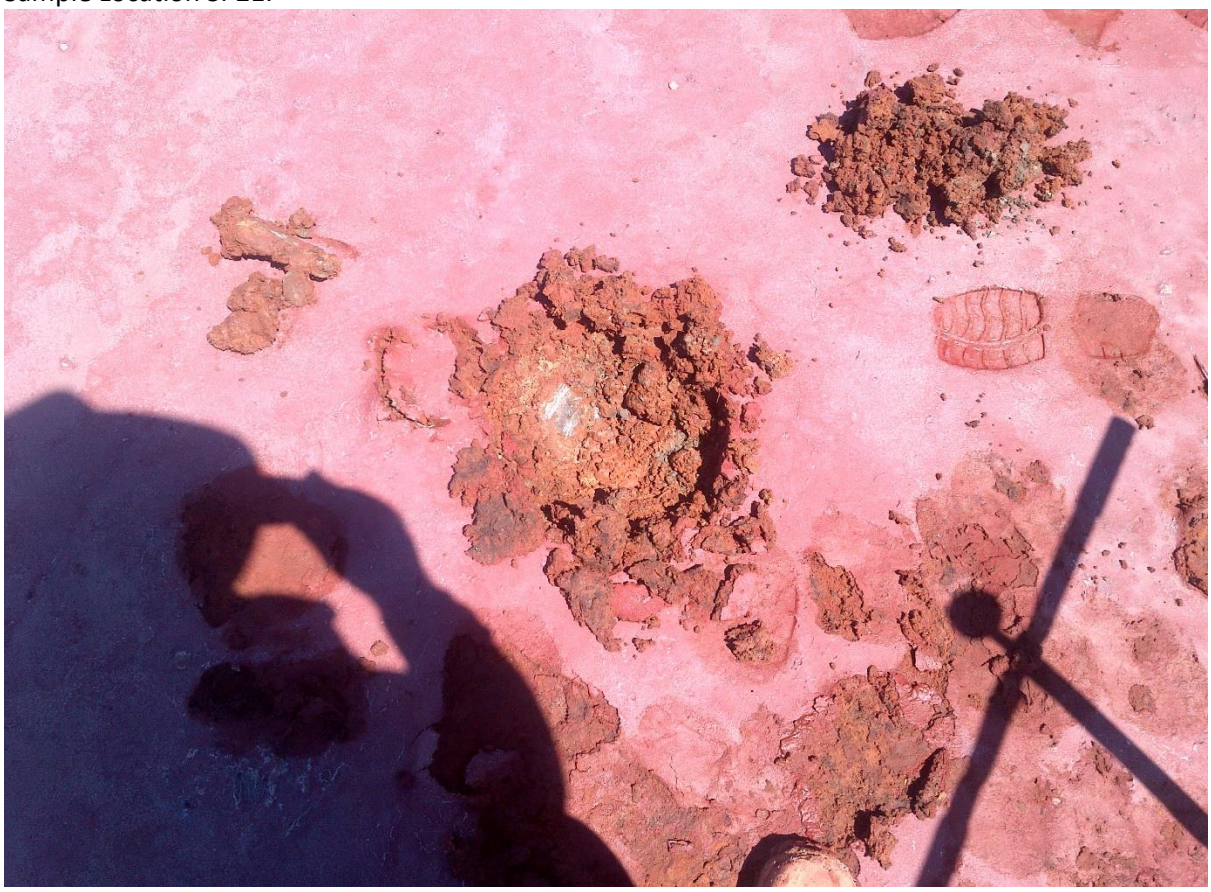
Sample Location SP29. Change in lithology from surface to deeper material.

Sample location SP27.

Sample Location SP25 – Evaporation Pond Tailings.

Evaporation Pond looking North East towards the LRSF.

Sample Location SP21.



Sample Location SP20.

Sample Location SP18 – Tailings in Evaporation Pond.

Sample Location SP17 – Change in lithology.

APPENDIX D

Dial Before You Dig Search Results

WATER CORPORATION
UNDERGROUND ASSET DETAILS

ABN 28 003 434 917
629 Newcastle Street
Leederville, WA, 6007
PO Box 100
Leederville, WA, 6902
www.watercorporation.com.au
(08) 9424 8115

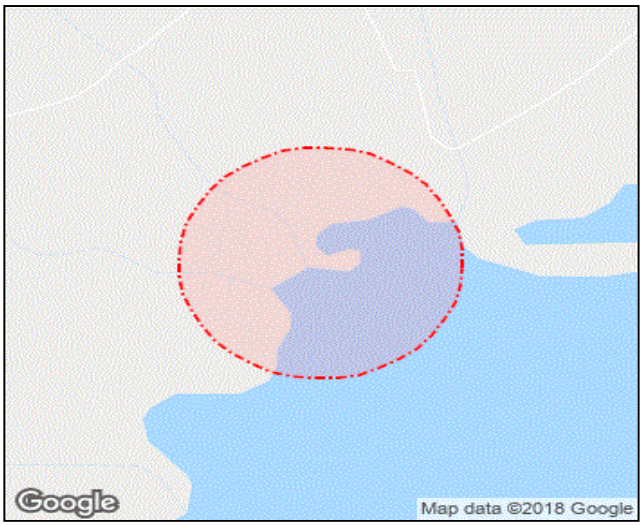
Requestor details

Mr Greg Forster
SLR
2/15 Astor Terrace
Spring Hill QLD 4000

Phone: 0738584800
Mobile: 0477005019
Fax: Not Supplied
Email: gforster@slrconsulting.com

Sequence No: **75998484**
DBYD Job No: 15020755
Enquiry Date: 28/09/2018
Issue Date: 28/09/2018

Requested location details



Address Unnamed Road
Bulong WA 6431
GPS X Coordinate
GPS Y Coordinate
Map Ref 105D2

Note: The response for this enquiry has been interpreted from details in the picture location only.

Water Corporation asset impact

NO PIPELINES FOUND
No underground pipes were identified. However be aware that pipes may still exist in your work area.
NOTE: For best results use the polygon function to define your work area. Point and line requests only generate a limited search of the surrounding area.

Important

1. Plans show approximate location only – verify location by potholing before using powered machinery.
2. Please read all information and attachments.
3. All documents must be kept together and retained on site by the work team.
4. This information is valid for 30 days from date of issue.

Western Power
363 Wellington Street
Perth WA 6000
T: 13 10 87 F: (08) 9326 6079
www.westernpower.com.au
Electricity Networks Corporation ABN 18 540 492 861

To:	Mr Greg Forster
Company:	SLR
Phone Details:	0738584800
Email Address:	gforster@slrconsulting.com
Sequence Number:	75998480
Job Number:	15020755
Dig Site Location:	Unnamed Road Bulong WA, 6431

DIAL BEFORE YOU DIG 1100 INFORMATION SHEET

This information relates to both underground and overhead network assets and is valid for 30 days from date of issue – 28/09/2018 2:28 PM

ENQUIRY SUMMARY:

Western Power has identified **no assets in the vicinity of the scope of your enquiry.**

This reply is only to the location requested and is valid for 30 days. Where additional works are planned, that are not specified within scope of this request, then Western Power requires that an additional Dial Before You Dig enquiry be lodged.

IMPORTANT CONTEXT

NOT depicted on Western Power Dial Before You Dig Plans are:

- Cables within a private property, for example, from pillar (green dome) to your electric meter. A cable-locating company will have to be contacted for on-site locations in your private property.
- Private cables belonging to government authorities, for example, Main Roads, Transperth, etc.
- Private streetlight cables belonging to local government, private estates etc.

A danger zone, Western Power easement and restriction zone represents an area of high risk when working and developing around the Western Power network. Danger zones apply only to work around the network, whilst easement and restriction zone areas apply only to development and land use.

It is a requirement to work and develop outside of these areas so as far as is reasonably practicable. If you propose to work and/or develop within these areas, refer to the Western Power website for available information, services and lead times at http://www.westernpower.com.au/safety-working-near-electricity.html or by contacting Western Power's **Customer Service Centre** on **13 10 87.**

In the event that you discover a Western Power assets, within the scope of the enquiry - contact Western Power – Dial Before You Dig Team : **1300 769 345.**

IN THE EVENT OF DAMAGE
TO A WESTERN POWER ASSET
CALL WESTERN POWER FAULTS AND EMERGENCIES ON 13 13 51

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The provisions of this Disclaimer cannot and do not purport to limit or otherwise exclude the application of, or any warranties, rights, powers or remedies under, any Commonwealth or Western Australian legislation that does not permit or otherwise makes void any such exclusion or limitation provisions, including but not limited to, section 18 of the *Competition and Consumer Act 2010 (Cth)*

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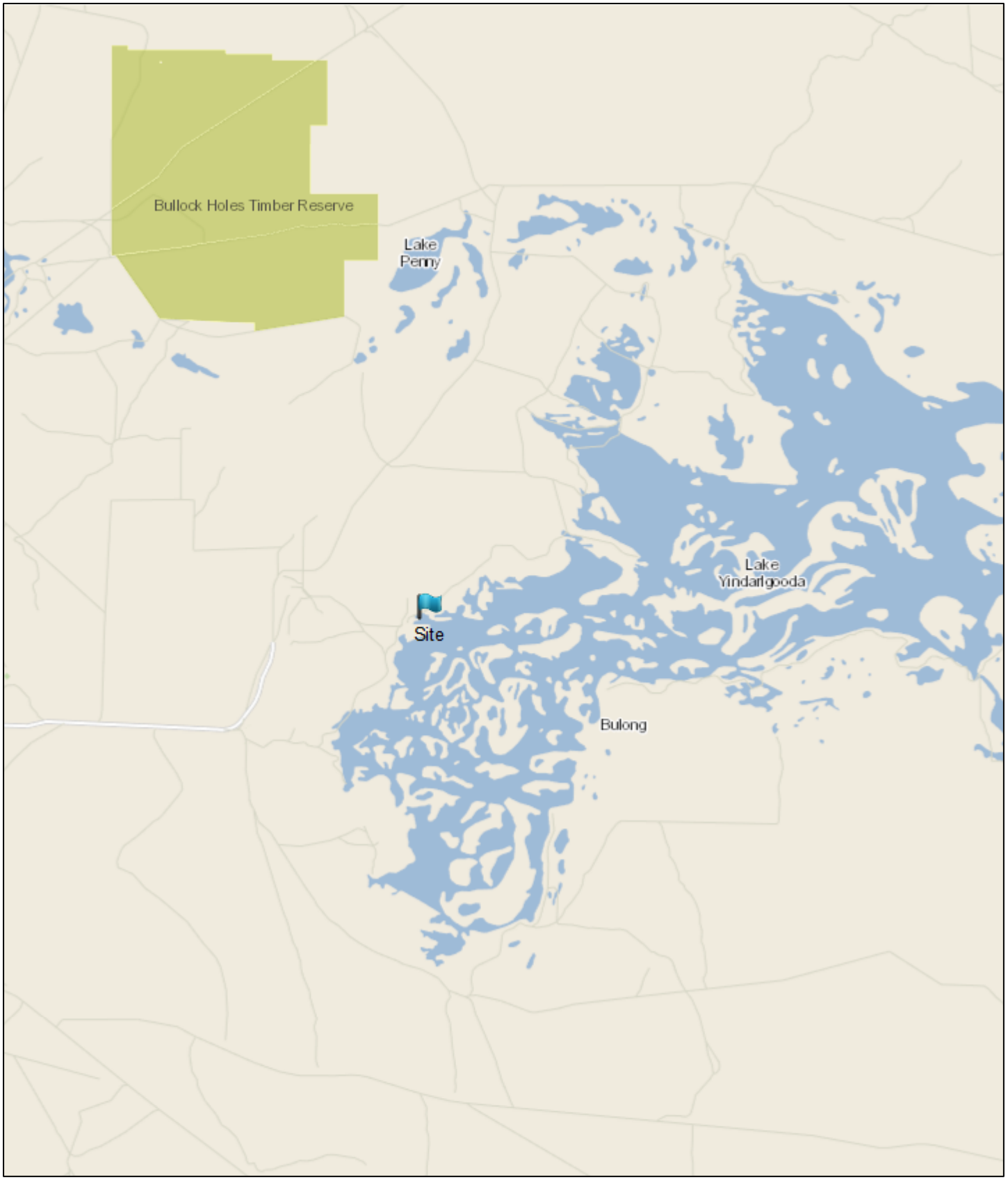
2. disclaim to the fullest extent the law permits and will not be liable or responsible for, any liability, loss or damage, whether direct or indirect (and whether or not arising out of negligence, breach of duty or statutory duty, or lack of care, of Western Power and its Associates or of any of them) Users may suffer or incur arising out of, or in connection with, any use or reliance on; and

3. are under no obligation to correct, update or revise, the Information.

APPENDIX E

Environmentally Sensitive Areas

Environmentally Sensitive Areas



November 13, 2018

1:288,895

0 2.5 5 10 mi

0 4 8 16 km

Protected Areas

Australian Government
Department of the Environment and Energy

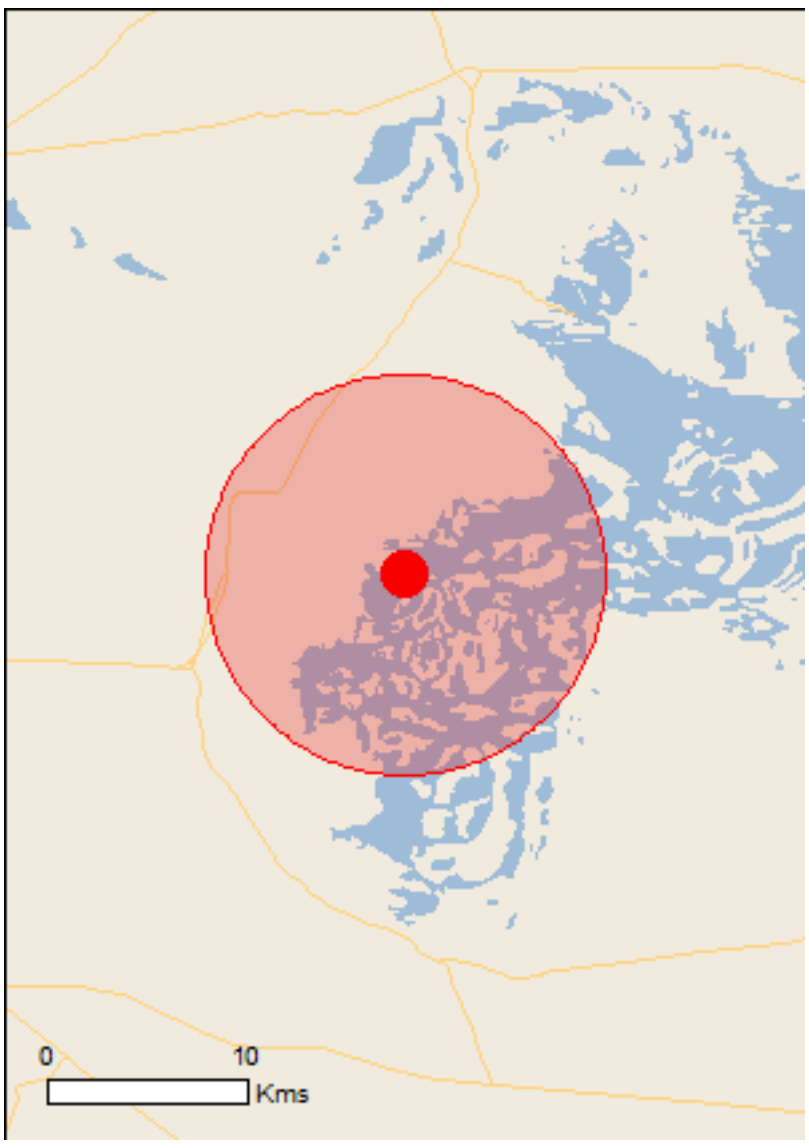
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

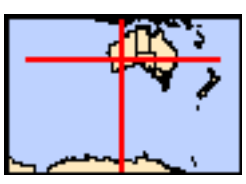
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 08/10/18 13:37:01



Coordinates
Buffer: 10.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	6
Listed Migratory Species:	7

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	12
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	11
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Mammals		
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area
Plants		
Gastrolobium graniticum Granite Poison [14872]	Endangered	Species or species habitat likely to occur within area
Tecticornia flabelliformis Bead Glasswort [82664]	Vulnerable	Species or species habitat known to occur within area

Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans		
Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Thinornis rubricollis		
Hooded Plover [59510]		Species or species habitat known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Extra Information

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia chinensis		
Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis		
Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris		
Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus		
Goat [2]		Species or species habitat likely to occur within area
Felis catus		
Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus		
House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus		
Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes		
Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Carrichtera annua		
Ward's Weed [9511]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-30.7119 121.88981

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

Department of the Environment
GPO Box 787
Canberra ACT 2601 Australia
+61 2 6274 1111

NatureMap
Mapping Western Australia's biodiversity

NatureMap Species Report

Created By Guest user on 18/01/2019

Conservation Status	Conservation Taxon (T, X, IA, S, P1-P5)
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	121° 53' 23" E,30° 42' 43" S
Buffer	5km
Group By	Kingdom

Kingdom	Species	Records
Animalia	1	1
Plantae	1	2
TOTAL	**2**	**3**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Animalia					
1.	48135	*Thinornis rubricollis (Hooded Plover, Hooded Dotterel)*		P4	
Plantae					
2.	31834	*Tecticornia flabelliformis*		P1	

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

NatureMap
Mapping Western Australia's biodiversity

5km NatureMap Bulong

Printed by Guest user on 18/1/2019

Query details : Current Names Only=Yes; Core Datasets Only=Yes; Method='By Circle'; Centre=121° 53' 23" E,30° 42' 43" S; Buffer=5km;

Search Results

Selected

- Selected Species

All Results

- Animalia
- Plantae

Reference Layers

Major WA Towns

Major WA Towns

Major WA Towns

State Borders

Department of Parks and Wildlife
Western Australian museum

NatureMap is a collaborative project of the Department of Parks and Wildlife, Western Australia, and the Western Australian Museum.

APPENDIX F

Contaminated Sites Database Search Results

Contaminated Sites Database

06/12/2018, 11:59:49

1:144,448

0 1 2 4 mi

0 1.75 3.5 7 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

User

APPENDIX G

Cultural Heritage

Search Criteria

14 Registered Aboriginal Sites in Custom search area - Polygon - 121.712147068433°E, 30.8370982909128°S (GDA94) : 121.712147068433°E, 30.6943156228171°S (GDA94) : 121.888614963941°E, 30.6943156228171°S (GDA94) : 121.888614963941°E, 30.8370982909128°S (GDA94) : 121.712147068433°E, 30.8370982909128°S (GDA94)

Disclaimer

The *Aboriginal Heritage Act 1972* preserves all Aboriginal sites in Western Australia whether or not they are registered. Aboriginal sites exist that are not recorded on the Register of Aboriginal Sites, and some registered sites may no longer exist.

The information provided is made available in good faith and is predominately based on the information provided to the Department of Planning, Lands and Heritage by third parties. The information is provided solely on the basis that readers will be responsible for making their own assessment as to the accuracy of the information. If you find any errors or omissions in our records, including our maps, it would be appreciated if you email the details to the Department at heritageenquiries@dplh.wa.gov.au and we will make every effort to rectify it as soon as possible.

Copyright

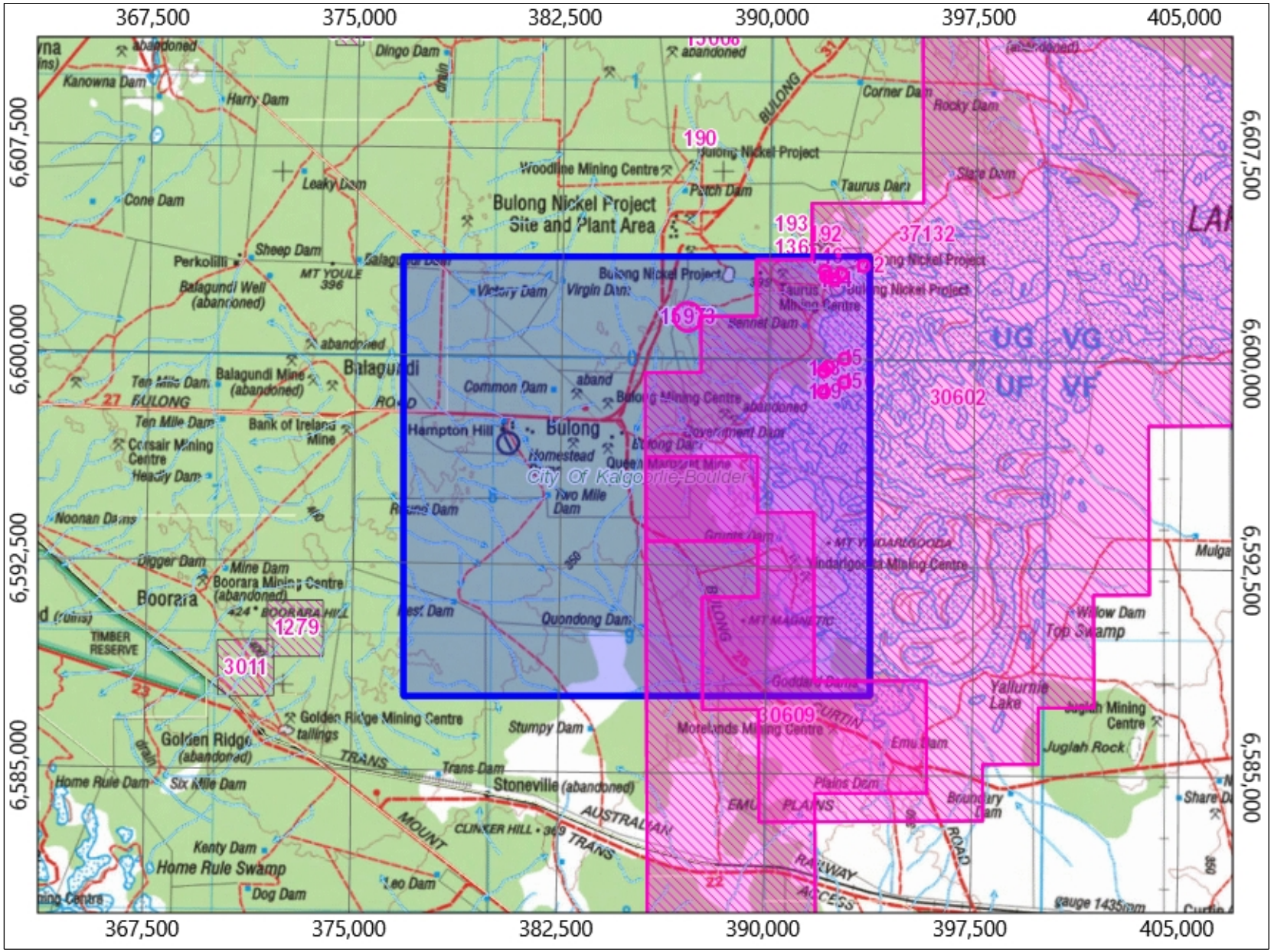
Coordinates

Map coordinates (MGA Zone 51 Easting/Northing metres) are based on the GDA 94 Datum.

Basemap Copyright

Aboriginal Heritage Inquiry System

Map of Registered Aboriginal Sites



Legend

- Registered Aboriginal Site
- Search Area
- Town
- Road
- River
- Local Government Authority

8.05 kilometres

Map Scale 1 : 244,000

MGA Zone 51 (GDA94)

Aboriginal Heritage Inquiry System

List of Registered Aboriginal Sites

Search Criteria

14 Registered Aboriginal Sites in Custom search area - Polygon - 121.712147068433°E, 30.8370982909128°S (GDA94) : 121.712147068433°E, 30.6943156228171°S (GDA94) : 121.888614963941°E, 30.6943156228171°S (GDA94) : 121.888614963941°E, 30.8370982909128°S (GDA94) : 121.712147068433°E, 30.8370982909128°S (GDA94)

Disclaimer

The *Aboriginal Heritage Act 1972* preserves all Aboriginal sites in Western Australia whether or not they are registered. Aboriginal sites exist that are not recorded on the Register of Aboriginal Sites, and some registered sites may no longer exist.

The information provided is made available in good faith and is predominately based on the information provided to the Department of Planning, Lands and Heritage by third parties. The information is provided solely on the basis that readers will be responsible for making their own assessment as to the accuracy of the information. If you find any errors or omissions in our records, including our maps, it would be appreciated if you email the details to the Department at heritageenquiries@dplh.wa.gov.au and we will make every effort to rectify it as soon as possible.

Copyright

Coordinate Accuracy

Coordinates (Easting/Northing metres) are based on the GDA 94 Datum. Accuracy is shown as a code in brackets following the coordinates.

Terminology (NB that some terminology has varied over the life of the legislation)

Place ID/Site ID: This a unique ID assigned by the Department of Planning, Lands and Heritage to the place.
Status:

- **Registered Site**: The place has been assessed as meeting Section 5 of the *Aboriginal Heritage Act 1972.*
- **Other Heritage Place which includes:**
  - **Stored Data / Not a Site:** The place has been assessed as not meeting Section 5 of the *Aboriginal Heritage Act 1972.*
  - **Lodged:** Information has been received in relation to the place, but an assessment has not been completed at this *stage* to determine if it meets Section 5 of the *Aboriginal Heritage Act 1972.*

Access and Restrictions:

- **File Restricted = No:** Availability of information that the Department of Planning, Lands and Heritage holds in relation to the place is not restricted in any way.
- **File Restricted = Yes:** Some of the information that the Department of Planning, Lands and Heritage holds in relation to the place is restricted if it is considered culturally sensitive. This information will only be made available if the Department of Planning, Lands and Heritage receives written approval from the informants who provided the information. To request access please contact heritageenquiries@dplh.wa.gov.au.
- **Boundary Restricted = No:** Place location is shown as accurately as the information lodged with the Registrar allows.
- **Boundary Restricted = Yes:** To preserve confidentiality the exact location and extent of the place is not displayed on the map. However, the shaded region (generally with an area of at least 4km²) provides a general indication of where the place is located. If you are a landowner and wish to find out more about the exact location of the place, please contact the Department of Planning, Lands and Heritage.
- **Restrictions:**
  - **No Restrictions:** *Anyone* can view the information.
  - **Male Access Only:** Only *males* can view restricted information.
  - **Female Access Only:** *Only* females can view restricted information.

Legacy ID: This is the former unique number that the former Department of Aboriginal Sites assigned to the place. This has been replaced by the Place ID / Site ID.

Aboriginal Heritage Inquiry System

List of Registered Aboriginal Sites

ID	Name	File Restricted	Boundary Restricted	Restrictions	Status	Type	Knowledge Holders	Coordinate	Legacy ID
141	YINDARLGOODA 03	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	392425mE 6603775mN Zone 51 [Reliable]	W02474
142	YINDARLGOODA 04	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter, Quarry	*Registered Knowledge Holder names available from DAA	393337mE 6603407mN Zone 51 [Reliable]	W02475
143	YINDARLGOODA 05	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter, Quarry	*Registered Knowledge Holder names available from DAA	392537mE 6603107mN Zone 51 [Reliable]	W02476
144	YINDARLGOODA 06	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter, Quarry	*Registered Knowledge Holder names available from DAA	392287mE 6602907mN Zone 51 [Reliable]	W02477
145	YINDARLGOODA 07	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	391987mE 6603007mN Zone 51 [Reliable]	W02478
146	YINDARLGOODA 08	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	391937mE 6603207mN Zone 51 [Reliable]	W02479
147	YINDARLGOODA 09	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	392087mE 6599757mN Zone 51 [Reliable]	W02480
148	YINDARLGOODA 10	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	391937mE 6599607mN Zone 51 [Reliable]	W02481
149	YINDARLGOODA 11	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	391937mE 6598857mN Zone 51 [Reliable]	W02482
150	YINDARLGOODA 12	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter	*Registered Knowledge Holder names available from DAA	392687mE 6599207mN Zone 51 [Reliable]	W02483
151	YINDARLGOODA 13	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter, Quarry	*Registered Knowledge Holder names available from DAA	392687mE 6600057mN Zone 51 [Reliable]	W02484
15973	TAURUS GNAMMA HOLE	No	No	No Gender Restrictions	Registered Site	Artefacts / Scatter, Camp	*Registered Knowledge Holder names available from DAA	386987mE 6601507mN Zone 51 [Reliable]	

Aboriginal Heritage Inquiry System

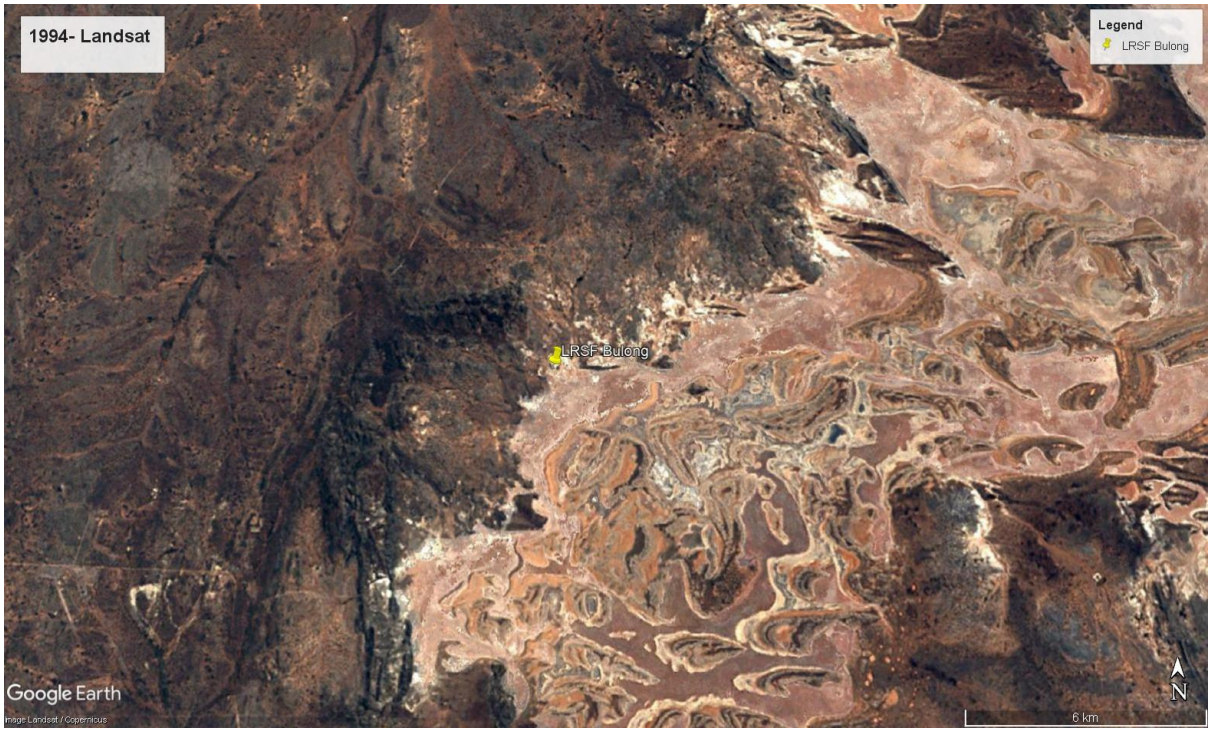
List of Registered Aboriginal Sites

ID	Name	File Restricted	Boundary Restricted	Restrictions	Status	Type	Knowledge Holders	Coordinate	Legacy ID
30602	Lake Yindarlgooda, Mammu Tjukurrpa	Yes	Yes	No Gender Restrictions	Registered Site	Mythological	*Registered Knowledge Holder names available from DAA	Not available when location is restricted	
30609	Lake Yindarlgooda - Duncan Swamp Story Line	Yes	Yes	No Gender Restrictions	Registered Site	Mythological	*Registered Knowledge Holder names available from DAA	Not available when location is restricted	

APPENDIX H

Historical Aerial Photographs and Satellite Imagery

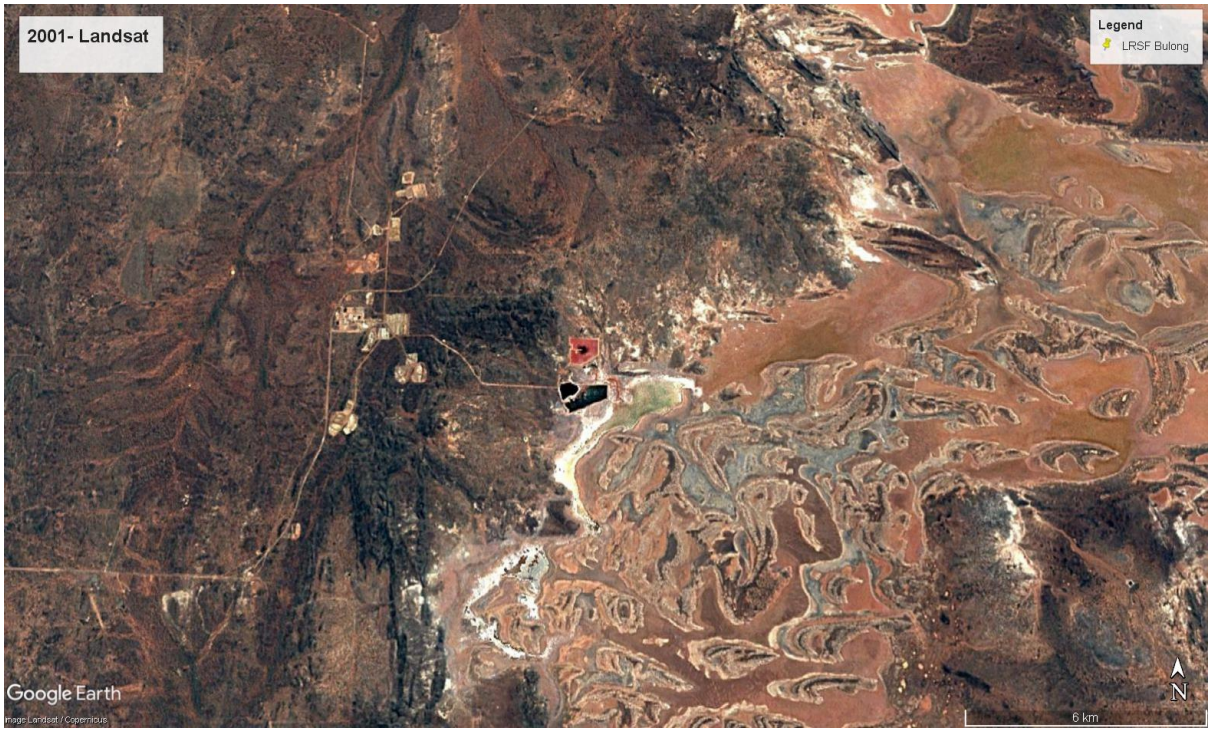
Bulong project area – 1984



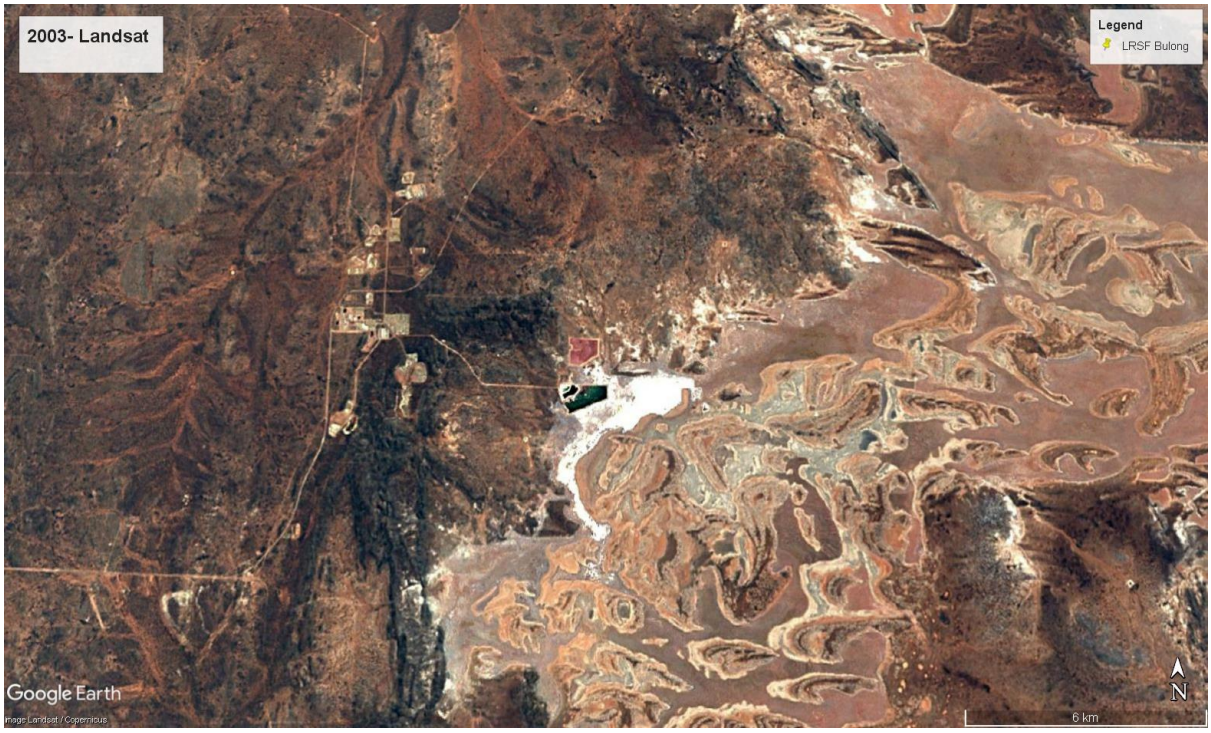
Bulong project area – 1994

Bulong project area – 1997

Bulong project area – 1999

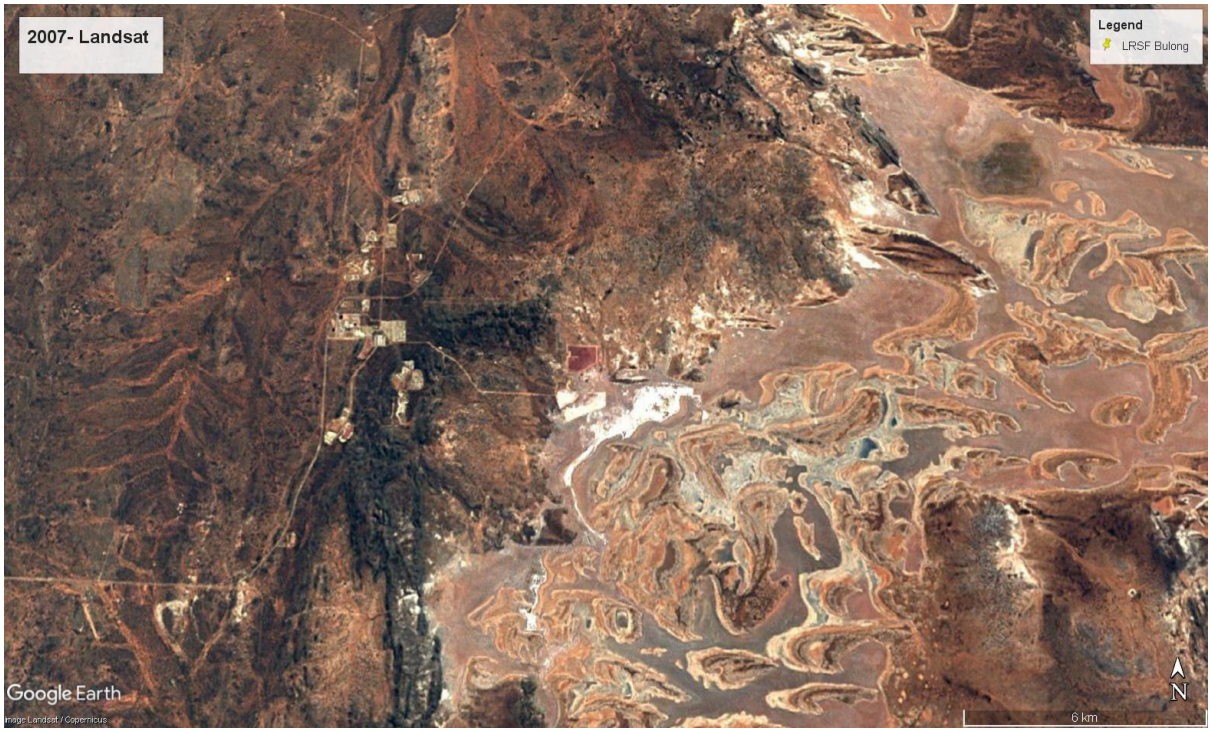


Bulong project area – 2001

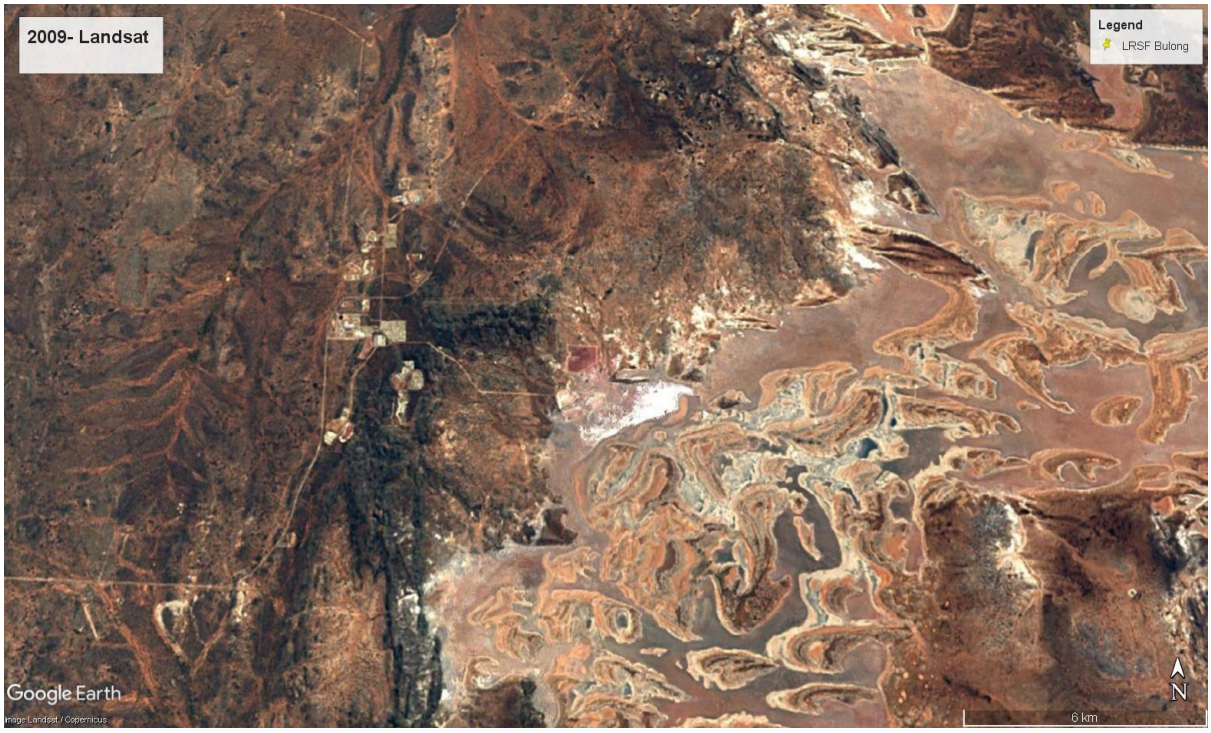


Bulong project area – 2003

Bulong project area – 2005

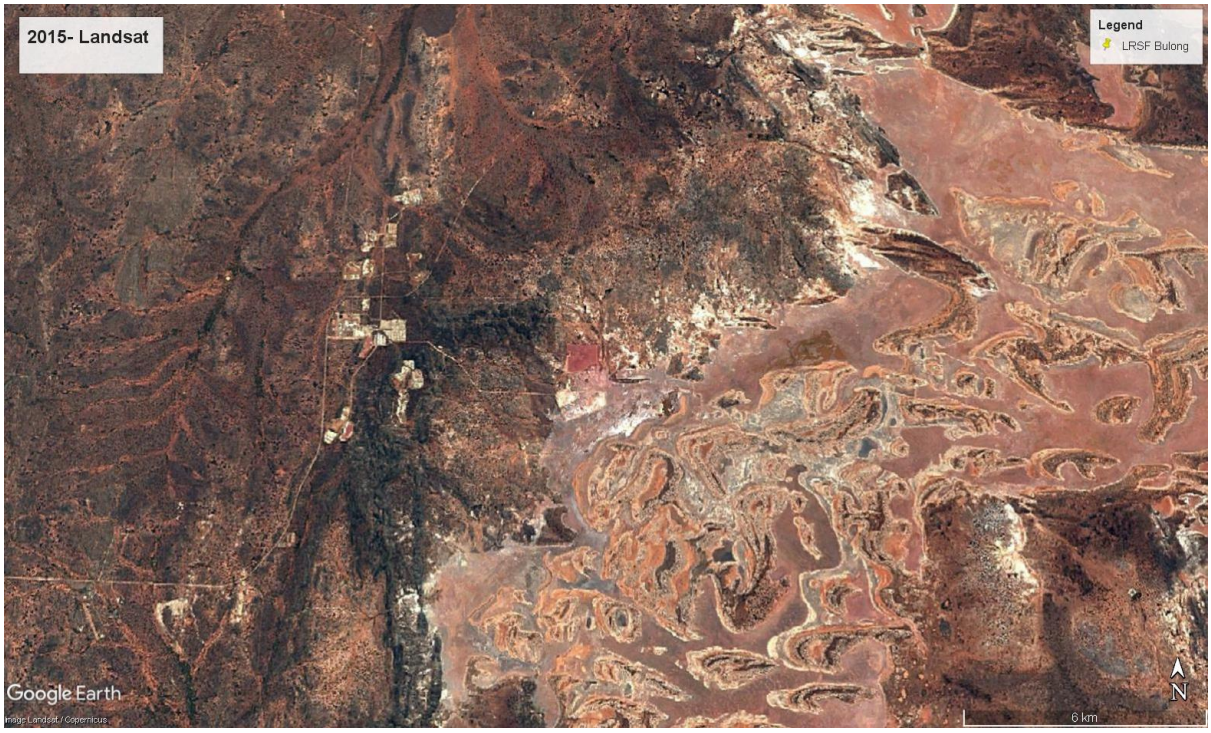


Bulong project area – 2007



Bulong project area – 2009

Bulong project area – 2011



Bulong project area – 2015

Bulong project area – 2018

APPENDIX I

Certified Laboratory Reports

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)
- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ DARWIN: 5 Foelsche Street, Darwin, NT 0800
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
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- ☑ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR
PROJECT: BALONG
PROJECT NUMBER: 675.11369
PROJECT MANAGER: DEHLIA GOUNDRY
PM CONTACT No: 0477 013 446

LABORATORY: EUROFINS
LABORATORY ADDRESS:
SAMPLER: Rueben Hanly
SAMPLER CONTACT No: 04 24 320 354
Email Reports and Invoices to: rhanly@slrconsulting.com

Turnaround Time (TAT)
- ☑ Standard TAT
- ☐ Non Standard or Urgent TAT

Required TAT:

COC Number: 1 of 2

COMMENTS OR ADDITIONAL DIRECTIONS

ALL SAMPLES ON HOLD. SAMPLES IN PLASTIC ZIP LOC BAGS TO BE FROZEN (ASS samples)

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	REQUESTED ANALYSIS: HOLD
	SP1_0_0.1	6/11	SOIL	1 GLASS + 1 PLASTIC	X
	SP1_0.3				X
B	SP2_0-0.1				
B	SP2-0.3				
B	SP3-0-0.1				
B	SP3-0.3				
B	SP4-0-0.1				
B	SP4-0.3				
B	SP5-0-0.1				
B	SP5-0.3				
	SP6-0-0.1				
	SP6-0.3				

Bags w out depths

1 bag is wet

Additional Information (Comment on any gross contamination or specific requirements)

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Sign	Date / Time	Received by	Sign E. Rowley	Date / Time 12/11/18	Temperature Received:
Relinquished By	Sign	Date / Time	Received by	Sign 627226	Date / Time	18.4S
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

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- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
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- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4810 NZ

CLIENT: SLR

PROJECT: BALONE

PROJECT NUMBER: 675.11369

PROJECT MANAGER: DEHLIA GOUNDRY

PM CONTACT No: 0477 013 446

LABORATORY: EUROFINS

LABORATORY ADDRESS:

SAMPLER: RUAIRI HANLY

SAMPLER CONTACT No: 0424 320 354

Email Reports and Invoices to: RHANLY@SLRCONSULTING.COM

Turnaround Time (TAT)

☑ Standard TAT

☐ Non Standard or Urgent TAT

Required TAT:

COC Number: 2 of 3

COMMENTS OR ADDITIONAL DIRECTIONS

ALL SAMPLES ON HOLD. SAMPLES IN PLASTIC ZIPLOC BAGS TO BE FROZEN (ASS SAMPLES.

	No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	REQUESTED ANALYSIS: HOLD	Additional Information (Comment on any gross contamination or specific requirements)
B3		SP7 0 – 0.1	6/11	SOIL	1 GLASS 1 PLASTIC		
B		SP7 0.3					
B3		SP8 0 – 0.1					
Not rec.		SP8 0.3					
B		SP9 0 – 0.05					
B		SP9 0.05 – 0.1					
B		SP10 0. – 0.1					
B		SP10 0.3					
		SP11 0 – 0.1					
		SP11 0.3					
		SP12 0 – 0.1					
		SP12 0.3	V	V	V	V	

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Sign	Date / Time	Received by	Sign E. Fowley	Date / Time 12/11/18	Temperature Received:
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one):
- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ DARWIN: 5 Foelsche Street, Darwin, NT 0800
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- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR	LABORATORY: Eurofins	Turnaround Time (TAT)	COC Number: 3 of 9
PROJECT: Buront	LABORATORY ADDRESS:	☐ Standard TAT	
PROJECT NUMBER: 675.11369	SAMPLER: Ruaidi Hong	☐ Non Standard or Urgent TAT	
PROJECT MANAGER: DEHLIA	SAMPLER CONTACT No: 0424 320 354	Required TAT:	
PM CONTACT No:	Email Reports and Invoices to:		

COMMENTS OR ADDITIONAL DIRECTIONS

All sample on hold. Sample in Plastic Ziploc bag to be Frozen.

REQUESTED ANALYSIS: HOLD

Additional Information (Comment on any gross contamination or specific requirements)

	No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	HOLD	Additional Information
		SP13 _ 0-0.1	06NOV	Soil	1 glass + 1 plastic	↓	
		SP13 _ 0.3	↓	↓	↓	↓	
B		SP14 _ 0-0.1	↓	↓	↓	↓	
not rec.		SP14 – 0.3	↓	↓	↓	↓	
		SP15 _ 0-0.1	↓	↓	↓	↓	
		SP15 – 0.3	↓	↓	↓	↓	
not rec		SP16 _ 0-0.1	↓	↓	↓	↓	
not rec		SP16 _ 0.3	↓	↓	↓	↓	
		SP17 – 0-0.1	↓	↓	↓	↓	
		SP17 _ 0.3	↓	↓	↓	↓	
rec. (incorrect sample existing SP18)		~~SP18 – 0.0-0.1~~	↓	↓	↓	↓	
rec.		~~SP18 – 0.3~~	↓	↓	↓	↓	

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Sign	Date / Time	Received by	Sign: E Rowley	Date / Time: 12/11/18	Temperature Received:
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 2, 15 Aster Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ DARWIN: 5 Foelsche Street, Darwin, NT 0800
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
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- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☑ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR

PROJECT: Bluewave

PROJECT NUMBER: 675.11369

PROJECT MANAGER:

PM CONTACT No:

LABORATORY: Eurofins

LABORATORY ADDRESS:

SAMPLER: Lucinda Healy

SAMPLER CONTACT No: 0424320358

Email Reports and Invoices to:

Turnaround Time (TAT)

- ☐ Standard TAT
- ☐ Non Standard or Urgent TAT

Required TAT:

COC Number: 4 of 8

COMMENTS OR ADDITIONAL DIRECTIONS

All Sample on hold - Samples in Plastic Ziplock Bag to be Frozen (ASS SHEETS)

REQUESTED ANALYSIS: HOLD

Additional Information (Comment on any gross contamination or specific requirements)

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives
only jar	SP19 - 0-0.1	06 NOV	Soil	1 GLASS + 1 PLASTIC
	~~SP19 - 0.3~~			
only jar	SP20 - 0.-0.1			
	~~SP20 - 0.3~~			
BJ	SP21 - 0-0.1			
BJ	SP21 - 0.3			
not rec.	SP22 - 0-0.1			
not rec.	SP22 - 0.3			
only jar	SP23 - 0 - 0.1			1 GLASS No PLASTIC
only jar	SP23 - 0.3			1 GLASS No PLASTIC
B	SP24 - 0 - 0.1			1 GLASS + 1 PLASTIC
B	SP24 - 0.3			

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Sign	Date / Time	Received by	Sign E.Rowley	Date / Time 12/11/18	Temperature Received:
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
- ☐ DARWIN: 5 Foelsche Street, Darwin, NT 0800
- ☐ GOLD COAST: 194 Varsity Parade, Varsity Lakes, QLD 4227
- ☐ MACKAY: 21 River Street, Mackay, QLD 4740
- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ GOLD COAST: 196 Varsity Parade, Varsity Lakes, QLD 4227
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- ☐ MELBOURNE: Suite 2, 2 Domville Avenue, Hawthorn, VIC 3122
- ☐ NEWCASTLE: 10 Kings Road, New Lambton, NSW 2305
- ☐ PERTH: Ground Floor, 503 Murray Street, Perth, WA 6000
- ☐ ROCKHAMPTON: rockhampton@slrconsulting.com
- ☐ AUCKLAND: 68 Beach Road, Auckland 1010 NZ
- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR	LABORATORY: EUROFIN.	Turnaround Time (TAT)	COC Number: 5 of 8
PROJECT: BYLONG	LABORATORY ADDRESS:		
PROJECT NUMBER: 675 11369	SAMPLER: RUAIRI HANLEY.	☐ Standard TAT	
PROJECT MANAGER: D. BOUNDRY	SAMPLER CONTACT No: 0424 320 354	☐ Non Standard or Urgent TAT	
PM CONTACT No:	Email Reports and Invoices to: RHANLEY@SLRCONSULTING.COM	Required TAT:	

COMMENTS OR ADDITIONAL DIRECTIONS

AS PREVIOUS.

REQUESTED ANALYSIS

HOLD

Additional Information
(Comment on any gross contamination or specific requirements)

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	
Q	SP25	0-0.1	6/11	SOIL	1 GLASS + 1 PLASTIC
R	SP25	0.3			
QJ	SP26	0-0.1			
B	SP26	0.3			
	SP27	0-0.1			
	SP27	0.3			
B	SP28	0-0.1			
	SP28	0.3			
	SP29	0-0.1			
B	SP29	0.3			
	SP30	0-0.1			
NOT REQ.	SP30	0.3	V	V	V

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Sign	Date / Time	Received by	Sign E. Rowley	Date / Time 12/11/18
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time

Temperature Received:

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one)

- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
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- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR	LABORATORY: EUROFINS
PROJECT: BULONG	LABORATORY ADDRESS:
PROJECT NUMBER: 675.11369	SAMPLER: Ryan Hart
PROJECT MANAGER:	SAMPLER CONTACT No: 0424320 354
PM CONTACT No:	Email Reports and invoices to:

Turnaround Time (TAT)

- ☐ Standard TAT
- ☐ Non Standard or Urgent TAT

Required TAT:

COC Number: 6 of 8

COMMENTS OR ADDITIONAL DIRECTIONS

As per Previous Comment.

REQUESTED ANALYSIS

Additional Information (Comment on any gross contamination or specific requirements)

No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	HOLD
	SP31 - 0 - 0.1	06/12/18	Soil	1 Glass & 1 Plastic	
	SP31 - 0.3				
	SP32 - 0 - 0.1				
	SP32 - 0.3				
B	SP33 - 0 - 0.1				
B	SP33 - 0.3				
	SP34 - 0 - 0.1				
3	SP34 - 0.3				
	SP35 - 0 - 0.1				
	SP35 - 0.3				
	SP36 - 0 - 0.1				
	SP36 - 0.3				

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Sign	Date / Time	Received by	Sign E. Rowley	Date / Time 12/1/18
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time

Temperature Received:

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one):
☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
☐ CANBERRA: GPO 410, Canberra, ACT 2600
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☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT:	SLR	LABORATORY	EUROFINS
PROJECT:	BULONG	LABORATORY ADDRESS:	
PROJECT NUMBER:	675.11369.	SAMPLER:	R. HANLEY.
PROJECT MANAGER:	P. GOUNDRY	SAMPLER CONTACT No:	
PM CONTACT No:		Email Reports and Invoices to:	RHANLEY@SLRCONSULTING.CO

Turnaround Time (TAT): ☐ Standard TAT ☐ Non Standard or Urgent TAT — Required TAT:

COC Number: 7 of 8

COMMENTS OR ADDITIONAL DIRECTIONS

AS PREVIOUS

REQUESTED ANALYSIS: HOLD

	No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	HOLD	Additional Information (Comment on any gross contamination or specific requirements)
B		SP37 0-0.1	6/11	SOIL	1 GLASS + 1 PLASTIC		
B		SP37 0.3					
		SP38 0-0.1					
B		SP38 0.3					
J		SP39 0-0.1					
J		SP39 0.3					
		REF 1 0-0.1					
		REF 1 0.3					
Only QC1 rec.		QC1 0-0.1					
jar only		QC1 0.3					
only QC1A rec.		QC1A 0-0.1					
jar only		QC1A 0.3					

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Sign	Date / Time		Received by	Sign E. Rowley	Date / Time 12/11/18	Temperature Received:
Relinquished By	Sign	Date / Time		Received by	Sign	Date / Time	
Relinquished By	Sign	Date / Time		Received by	Sign	Date / Time	

SLR

CHAIN OF CUSTODY DOCUMENTATION

SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

PROJECT OFFICE (Tick one):
- ☐ BRISBANE: Level 2, 15 Astor Terrace, Spring Hill, QLD 4000
- ☐ CANBERRA: GPO 410, Canberra, ACT 2600
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- ☐ NELSON: 5 Duncan Street, Port Nelson, 7010 NZ
- ☐ NEW PLYMOUTH: Level 2, 10 Devon Street East, New Plymouth, 4310 NZ

CLIENT: SLR	LABORATORY: EUROFINS	Turnaround Time (TAT)	COC Number: 8 of 8
PROJECT: Dulong	LABORATORY ADDRESS:	☑ Standard TAT	
PROJECT NUMBER: 675.11369	SAMPLER: Lucas Henry	☐ Non Standard or Urgent TAT	
PROJECT MANAGER: D. Foundry	SAMPLER CONTACT No: 0426 320 354	Required TAT:	
PM CONTACT No:	Email Reports and Invoices to:		

COMMENTS OR ADDITIONAL DIRECTIONS

REQUESTED ANALYSIS: HOLD

	No.	Sample ID	Date & Time	Matrix (Soil, water, ACM, etc)	Containers and Preservatives	HOLD	Additional Information (Comment on any gross contamination or specific requirements)
		BMH04	7/11	WATER	PLASTIC CONTAINER ~~[illegible]~~		
not rec.		BMH13.	7/11	|	|		
		BMH01	|	|	|		
		BMH02					
		BMH09					
nut. only		BMH10					
not rec.		BMH01A					
2x metal		BMH11					
		BMH12					
		BMH06					
also rec.		BMH08	↓	↓	↓		

BMH01D
BMH01S
QC1

I attest that the proper field sampling procedures were used during the collection of these samples.

Relinquished By Sampler	Sign	Date / Time	Received by	Sign E. Rowley	Date / Time 12/11/18	Temperature Received:
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	
Relinquished By	Sign	Date / Time	Received by	Sign	Date / Time	

Enviro Sample WA

From: Andrew Black
Sent: Monday, 12 November 2018 12:33 PM
To: Enviro Sample WA
Subject: RE: SLR Project - 675.11369 - Bulong

Follow Up Flag: Follow up
Flag Status: Flagged

Ok guys the instructions will be:

For Soils IF A JAR AND BAG ARE PROVIDED

- **Extended metals suite (Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, K, Hg, Mg, Mn, Mo, Ni, Pb, P, Se, Si, Ag, Na, S, Sn, Tl, Ti, U, V, Zn).**
- **Free Cyanide.**
- **ASS (Chromium Reducible Sulfur with Net Acid Generation (NAG) and Net Acid Production Potential (NAPP) – tailings only).**
- **NEPM screen for soil classification (% Fe/ CEC/ pH(CaCl2)/ TOC/ % Clay Content) (For tailings and around the periphery of site).**
- pH (tailings).
- Total Sulphur (Tailings).
- Cations / Anions (Tailings).
- pH – Field Screen.

For Soils IF ONLY A JAR IS PROVIDED

- **Extended metals suite (Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, K, Hg, Mg, Mn, Mo, Ni, Pb, P, Se, Si, Ag, Na, S, Sn, Tl, Ti, U, V, Zn).**
- **Free Cyanide.**
- **NEPM screen for soil classification (% Fe/ CEC/ pH(CaCl2)/ TOC/ % Clay Content) (For tailings and around the periphery of site).**
- pH (tailings).
- Total Sulphur (Tailings).
- Cations / Anions (Tailings).

For Soils IF ONLY A BAG IS PROVIDED

- **ASS (Chromium Reducible Sulfur with Net Acid Generation (NAG) and Net Acid Production Potential (NAPP) – tailings only).**
- pH – Field Screen.

For Waters BASED ON NUTRIENTS AND WASHED OUT METALS BOTTLE

- **Extended metals suite ((Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, K, Hg, Mg, Mn, Mo, Ni, Pb, P, Se, Si, Ag, Na, S, Sn, Tl, Ti, U, V, Zn).**
- **Cyanide (as un-ionised Cn).**
- **Total Nitrogen, Ammonia, Nitrate, Nitrite**

Andrew Black
Phone: +61 410 220 750
Email: AndrewBlack@eurofins.com

eurofins | mgt

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name:	**SLR Consulting (Qld)**
Contact name:	Ruairi Hanley
Project name:	BYLONG
Project ID:	67511369
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Nov 9, 2018 9:14 AM
Eurofins | mgt reference:	**627226**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☒ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

N/A Sample containers for volatile analysis received with zero headspace.

☒ Split sample sent to requested external lab.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Ryan Gilbert on Phone : or by e.mail: RyanGilbert@eurofins.com

Results will be delivered electronically via e.mail to Ruairi Hanley - rhanly@slrconsulting.com.

Company Name: SLR Consulting (Qld)
Address: Level 2 15 Astor Terrace
Spring Hill
QLD 4000

Project Name: BYLONG
Project ID: 67511369

Order No.:
Report #: 627226
Phone: 07 3858 4800
Fax:

Received: Nov 9, 2018 9:14 AM
Due: Nov 23, 2018
Priority: 10 Day
Contact Name: Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																			
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
External Laboratory																																																																			
1	SP1_0-0.1	Nov 06, 2018		Soil	P18-No14141	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
2	SP1_0-0.3	Nov 06, 2018		Soil	P18-No14142	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
3	SP2_0-0.1	Nov 06, 2018		Soil	P18-No14143	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
4	SP2_0-0.3	Nov 06, 2018		Soil	P18-No14144	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
5	SP3_0-0.1	Nov 06, 2018		Soil	P18-No14145	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
6	SP3_0-0.3	Nov 06, 2018		Soil	P18-No14146	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
7	SP4_0-0.1	Nov 06, 2018		Soil	P18-No14147	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
8	SP4_0-0.3	Nov 06, 2018		Soil	P18-No14148	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
9	SP5_0-0.1	Nov 06, 2018		Soil	P18-No14149	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

Company Name: SLR Consulting (Qld)
Address: Level 2 15 Astor Terrace
Spring Hill
QLD 4000

Project Name: BYLONG
Project ID: 67511369

Order No.:
Report #: 627226
Phone: 07 3858 4800
Fax:

Received: Nov 9, 2018 9:14 AM
Due: Nov 23, 2018
Priority: 10 Day
Contact Name: Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
10	SP5_0-0.3	Nov 06, 2018		Soil	P18-No14150	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
11	SP6_0-0.1	Nov 06, 2018		Soil	P18-No14151	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
12	SP6_0-0.3	Nov 06, 2018		Soil	P18-No14152	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
13	SP7_0-0.1	Nov 06, 2018		Soil	P18-No14153	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
14	SP7_0-0.3	Nov 06, 2018		Soil	P18-No14154	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
15	SP8_0-0.1	Nov 06, 2018		Soil	P18-No14155	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
16	SP9_0-0.05	Nov 06, 2018		Soil	P18-No14156	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
17	SP9_0.05-0.1	Nov 06, 2018		Soil	P18-No14157	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
18	SP10_0-0.1	Nov 06, 2018		Soil	P18-No14158	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
19	SP10_0.3	Nov 06, 2018		Soil	P18-No14159	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
20	SP11_0-0.1	Nov 06, 2018		Soil	P18-No14160	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
21	SP11_0.3	Nov 06, 2018		Soil	P18-No14161	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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Site # 23736

Company Name:	SLR Consulting (Qld)	**Order No.:**		**Received:**	Nov 9, 2018 9:14 AM
Address:	Level 2 15 Astor Terrace	**Report #:**	627226	**Due:**	Nov 23, 2018
	Spring Hill	**Phone:**	07 3858 4800	**Priority:**	10 Day
	QLD 4000	**Fax:**		**Contact Name:**	Ruairi Hanley
Project Name:	BYLONG				
Project ID:	67511369				

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																															X	X	X		X
22	SP12_0-0.1	Nov 06, 2018		Soil	P18-No14162	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
23	SP12_0.3	Nov 06, 2018		Soil	P18-No14163	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
24	SP13_0-0.1	Nov 06, 2018		Soil	P18-No14164	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
25	SP13_0.3	Nov 06, 2018		Soil	P18-No14165	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
26	SP14_0-0.1	Nov 06, 2018		Soil	P18-No14166	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
27	SP15_0-0.1	Nov 06, 2018		Soil	P18-No14167	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
28	SP15_0.3	Nov 06, 2018		Soil	P18-No14168	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
29	SP17_0-0.1	Nov 06, 2018		Soil	P18-No14169	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
30	SP17_0-0.3	Nov 06, 2018		Soil	P18-No14170	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
31	SP18_0-0.1	Nov 06, 2018		Soil	P18-No14171	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
32	SP18_0.3	Nov 06, 2018		Soil	P18-No14172	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X		X	X		X		X		X		X		X		X	X		X	X	X
33	SP19_0-0.1	Nov 06, 2018		Soil	P18-No14173	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X		X	X		X		X		X		X		X		X	X		X		X

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	QLD 4000	**Fax:**		**Contact Name:**	Ruairi Hanley
Project Name:	BYLONG				
Project ID:	67511369				

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
34	SP21_0-0.1	Nov 06, 2018		Soil	P18-No14174	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
35	SP21_0-0.3	Nov 06, 2018		Soil	P18-No14175	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
36	SP21_0-0.3	Nov 06, 2018		Soil	P18-No14176	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
37	SP23_0-0.1	Nov 06, 2018		Soil	P18-No14177	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
38	SP23_0.3	Nov 06, 2018		Soil	P18-No14178	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
39	SP24_0-0.1	Nov 06, 2018		Soil	P18-No14179	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
40	SP24_0-0.3	Nov 06, 2018		Soil	P18-No14180	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
41	SP25_0-0.1	Nov 06, 2018		Soil	P18-No14181	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
42	SP25_0.3	Nov 06, 2018		Soil	P18-No14182	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
43	SP26_0-0.1	Nov 06, 2018		Soil	P18-No14183	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
44	SP26_0.3	Nov 06, 2018		Soil	P18-No14184	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
45	SP27_0-0.1	Nov 06, 2018		Soil	P18-No14185	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																															X	X	X		X
46	SP27_0.3	Nov 06, 2018		Soil	P18-No14186	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
47	SP28_0-0.1	Nov 06, 2018		Soil	P18-No14187	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
48	SP28_0.3	Nov 06, 2018		Soil	P18-No14188	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
49	SP29_0-0.1	Nov 06, 2018		Soil	P18-No14189	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
50	SP29_0.3	Nov 06, 2018		Soil	P18-No14190	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
51	SP30_0-0.1	Nov 06, 2018		Soil	P18-No14191	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
52	SP31_0-0.1	Nov 06, 2018		Soil	P18-No14192	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
53	SP31_0.3	Nov 06, 2018		Soil	P18-No14193	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
54	SP32_0-0.1	Nov 06, 2018		Soil	P18-No14194	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
55	SP32_0.3	Nov 06, 2018		Soil	P18-No14195	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
56	SP33_0-0.1	Nov 06, 2018		Soil	P18-No14196	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
57	SP33_0.3	Nov 06, 2018		Soil	P18-No14197	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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Spring Hill
QLD 4000

Project Name: BYLONG
Project ID: 67511369

Order No.:
Report #: 627226
Phone: 07 3858 4800
Fax:

Received: Nov 9, 2018 9:14 AM
Due: Nov 23, 2018
Priority: 10 Day
Contact Name: Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
58	SP34_0-0.1	Nov 06, 2018		Soil	P18-No14198	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
59	SP34_0.3	Nov 06, 2018		Soil	P18-No14199	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
60	SP35_0-0.1	Nov 06, 2018		Soil	P18-No14200	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
61	SP35_0.3	Nov 06, 2018		Soil	P18-No14201	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
62	SP36_0-0.1	Nov 06, 2018		Soil	P18-No14202	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
63	SP36_0.3	Nov 06, 2018		Soil	P18-No14203	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
64	SP37_0-0.1	Nov 06, 2018		Soil	P18-No14204	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
65	SP37_0.3	Nov 06, 2018		Soil	P18-No14205	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
66	SP38_0-0.1	Nov 06, 2018		Soil	P18-No14206	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
67	SP38_0.3	Nov 06, 2018		Soil	P18-No14207	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
68	SP39_0-0.1	Nov 06, 2018		Soil	P18-No14208	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
69	SP39_0.3	Nov 06, 2018		Soil	P18-No14209	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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NATA # 1261
Site # 23736

Company Name:	SLR Consulting (Qld)	**Order No.:**	
Address:	Level 2 15 Astor Terrace Spring Hill QLD 4000	**Report #:**	627226
		Phone:	07 3858 4800
		Fax:	
Project Name:	BYLONG	**Received:**	Nov 9, 2018 9:14 AM
Project ID:	67511369	**Due:**	Nov 23, 2018
		Priority:	10 Day
		Contact Name:	Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
70	REF1 0-0.1	Nov 06, 2018		Soil	P18-No14210	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
71	QC1	Nov 06, 2018		Soil	P18-No14211	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
72	QC1A	Nov 06, 2018		Soil	P18-No14212	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
73	BMH04	Nov 07, 2018		Water	P18-No14213		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X					X		X		X		X		X			X			
74	BMH02	Nov 07, 2018		Water	P18-No14214		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X					X			
75	BMH09	Nov 07, 2018		Water	P18-No14215		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X		X			X			
76	BMH10	Nov 07, 2018		Water	P18-No14216																								X																																		X			
77	BMH11	Nov 07, 2018		Water	P18-No14217		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X		X			X			
78	BMH12	Nov 07, 2018		Water	P18-No14218		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X		X			X			
79	BMH06	Nov 07, 2018		Water	P18-No14219		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X		X			X			
80	BMH08	Nov 07, 2018		Water	P18-No14220		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X		X			X			
81	BMH01 D	Nov 07, 2018		Water	P18-No14221																									X																																			

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
82	BMH01 S	Nov 07, 2018		Water	P18-No14222																									X																																				
83	QC1	Nov 07, 2018		Water	P18-No14223																									X																																				
84	REF1 0.3	Nov 06, 2018		Soil	P18-No14488	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
Test Counts						73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	8	3	73	7	73	7	73	7	73	7	73	7	73	73	7	73	7	73	7	2	73	6	73	7	73	7	73	7	73	7	73	6	73	73	8	73	67	73

SLR CONSULTING
Level 2 15 Astor Terrace
Spring Hill
QLD 4000

NATA Accredited
Accreditation Number 1261
Site Number 23736

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Ruairi Hanley**

Report **627226-S**
Project name BYLONG
Project ID 67511369
Received Date Nov 09, 2018

Client Sample ID **Sample Matrix** **Eurofins | mgt Sample No.** **Date Sampled** Test/Reference	LOR	Unit	**SP1_0-0.1** **Soil** **P18-No14141** **Nov 06, 2018**	**SP1_0-0.3** **Soil** **P18-No14142** **Nov 06, 2018**	**SP2_0-0.1** **Soil** **P18-No14143** **Nov 06, 2018**	**SP2_0-0.3** **Soil** **P18-No14144** **Nov 06, 2018**
% Clay	1	%	7.5	15	6.3	6.3
Ammonia (as N)	5	mg/kg	[G01]< 50	[G01]< 50	[G01]< 50	[G01]< 50
Chloride	5	mg/kg	28000	24000	8600	6100
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	16000	8900	8900	4300
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	500	270	740	180
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.3	8.1	7.2	7.1
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	8.3	8.2	7.1	6.9
Sulphate (as SO4)	30	mg/kg	6100	2300	8000	6300
Total Organic Carbon	0.1	%	0.3	0.3	< 0.1	< 0.1
% Moisture	1	%	11	13	19	11
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	95	89	36	< 20
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	11000	16000	7100	5700
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	8.3	11	20	7.2
Barium	10	mg/kg	52	61	19	10
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	37	35	25	25
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	330	600	4100	4500
Cobalt	5	mg/kg	20	18	100	94
Copper	5	mg/kg	30	26	15	14
Iron	20	mg/kg	43000	48000	240000	190000
Lead	5	mg/kg	< 5	< 5	8.0	15
Manganese	5	mg/kg	430	320	1400	1400
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	180	170	1800	1200
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	60	36	25	13

Client Sample ID			SP1_0-0.1	SP1_0-0.3	SP2_0-0.1	SP2_0-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14141	P18-No14142	P18-No14143	P18-No14144
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	160	140	470	560
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	64	75	84	110
Zinc	5	mg/kg	44	36	19	18
Heavy Metals						
Iron (%)	0.01	%	4.3	4.8	24	19
Alkali Metals						
Calcium	5	mg/kg	35000	23000	11000	4400
Magnesium	5	mg/kg	11000	7200	2600	1900
Potassium	5	mg/kg	1200	970	280	150
Sodium	5	mg/kg	20000	14000	7100	5400
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	83	57	110	19
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	8.2	8.1	6.8	6.4
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	8.3	8.7	6.8	6.6
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	110	200	370	280
>2mm Fraction	0.005	g	< 0.005	< 0.005	< 0.005	< 0.005
Analysed Material	0.1	%	100	100	100	100
Extraneous Material	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	8.7	8.8	7.0	6.6
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	4.4	5.1	0.40	0.39
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	880	1000	81	77
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	1.4	1.6	0.13	0.12
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP3_0-0.1	SP3_0-0.3	SP4_0-0.1	SP4_0-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14145**	**P18-No14146**	**P18-No14147**	**P18-No14148**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
% Clay	1	%	15	16	5.0	7.3
Ammonia (as N)	5	mg/kg	< 5	< 5	160	< 50
Chloride	5	mg/kg	7000	6800	16000	15000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	4400	4000	11000	10000
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	28	24	880	1000
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.4	7.6	7.8	7.9
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	8.4	8.1	7.7	7.9
Sulphate (as SO4)	30	mg/kg	3600	1900	15000	8600
Total Organic Carbon	0.1	%	0.8	1.2	0.1	0.4
% Moisture	1	%	7.9	7.6	14	14
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	140	470	120	85
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	23	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	17000	16000	7200	9300
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	6.9	8.6	21	19
Barium	10	mg/kg	86	81	47	33
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	21	45	31	32
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	310	280	1600	1300
Cobalt	5	mg/kg	20	17	190	90
Copper	5	mg/kg	34	40	20	19
Iron	20	mg/kg	42000	37000	120000	85000
Lead	5	mg/kg	6.4	5.5	< 5	< 5
Manganese	5	mg/kg	600	480	2400	1400
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	130	120	1700	1600
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	84	180	53	58
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	210	200	290	260
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	75	78	54	50
Zinc	5	mg/kg	51	43	24	26
Heavy Metals						
Iron (%)	0.01	%	4.2	3.7	12	8.5
Alkali Metals						
Calcium	5	mg/kg	49000	100000	30000	43000
Magnesium	5	mg/kg	10000	16000	8000	23000
Potassium	5	mg/kg	1900	1800	470	580
Sodium	5	mg/kg	4000	5100	15000	12000
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	43	38	140	130

Client Sample ID			SP3_0-0.1	SP3_0-0.3	SP4_0-0.1	SP4_0-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14145	P18-No14146	P18-No14147	P18-No14148
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	8.3	8.7	7.6	7.5
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	8.5	8.7	7.5	7.7
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	140	80	130	86
>2mm Fraction	0.005	g	26	58	2.7	27
Analysed Material	0.1	%	85	58	98	76
Extraneous Material	0.1	%	15	42	2.0	24
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	9.0	9.1	7.8	7.9
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	15	26	1.6	4.2
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	3000	5100	310	850
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	4.8	8.2	0.50	1.4
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP5_0-0.1	SP5_0-0.3	SP6_0-0.1	SP6_0-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14149	P18-No14150	P18-No14151	P18-No14152
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	13	11	10	3.8
Ammonia (as N)	5	mg/kg	< 5	7.8	< 5	< 5
Chloride	5	mg/kg	17000	17000	2200	12000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	9800	8600	1400	5900
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	< 5	< 5	5.7	29
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.3	8.4	8.7	8.2
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	8.3	8.3	8.8	8.1
Sulphate (as SO4)	30	mg/kg	4200	4000	830	2400
Total Organic Carbon	0.1	%	0.3	0.4	0.1	0.4
% Moisture	1	%	12	16	8.7	14

Client Sample ID			SP5_0-0.1	SP5_0-0.3	SP6_0-0.1	SP6_0-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14149**	**P18-No14150**	**P18-No14151**	**P18-No14152**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	100	170	90	110
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	25	< 20
Heavy Metals						
Aluminium	10	mg/kg	13000	13000	12000	18000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	16	11	40	25
Barium	10	mg/kg	73	83	71	72
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	14	14	17	19
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	1000	630	3900	1300
Cobalt	5	mg/kg	43	42	48	63
Copper	5	mg/kg	26	28	24	32
Iron	20	mg/kg	69000	71000	160000	70000
Lead	5	mg/kg	5.1	5.7	8.0	6.5
Manganese	5	mg/kg	830	700	520	700
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	530	290	910	870
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	35	32	35	30
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	210	160	480	290
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	84	76	160	96
Zinc	5	mg/kg	44	59	29	40
Heavy Metals						
Iron (%)	0.01	%	6.9	7.1	16	7.0
Alkali Metals						
Calcium	5	mg/kg	9700	12000	5000	3300
Magnesium	5	mg/kg	11000	10000	6800	11000
Potassium	5	mg/kg	1100	1600	340	1800
Sodium	5	mg/kg	9300	14000	1400	7900
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	43	39	22	33
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	8.1	8.2	7.8	8.7
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	8.2	7.8	8.1	8.5
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	160	160	200	120
>2mm Fraction	0.005	g	60	120	3.2	59
Analysed Material	0.1	%	72	58	98	66
Extraneous Material	0.1	%	28	42	1.6	34

Client Sample ID			SP5_0-0.1	SP5_0-0.3	SP6_0-0.1	SP6_0-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14149	P18-No14150	P18-No14151	P18-No14152
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	8.7	8.8	8.4	9.0
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	3.6	3.8	2.1	2.9
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	720	760	430	580
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	1.2	1.2	0.68	0.93
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP7_0-0.1	SP7_0-0.3	SP8_0-0.1	SP9_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14153	P18-No14154	P18-No14155	P18-No14156
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	28	7.5	10	5.0
Ammonia (as N)	5	mg/kg	3200	1300	970	740
Chloride	5	mg/kg	47000	25000	26000	29000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	31000	18000	12000	18000
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	69	68	[G01]< 50	[G01]< 50
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.0	8.1	7.3	7.1
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	7.0	8.1	7.3	7.1
Sulphate (as SO4)	30	mg/kg	50000	16000	13000	11000
Total Organic Carbon	0.1	%	< 0.1	0.3	0.2	0.2
% Moisture	1	%	26	15	22	14
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	69	1600	48	28
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	5500	8100	16000	8000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	17	8.0	5.5	7.7
Barium	10	mg/kg	23	41	28	33
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2

Client Sample ID			SP7_0-0.1	SP7_0-0.3	SP8_0-0.1	SP9_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14153	P18-No14154	P18-No14155	P18-No14156
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	28	32	27	18
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	960	380	310	450
Cobalt	5	mg/kg	74	23	33	24
Copper	5	mg/kg	11	23	21	15
Iron	20	mg/kg	87000	37000	34000	38000
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Manganese	5	mg/kg	970	470	1300	590
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	980	240	390	290
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	75	41	240	550
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	250	130	180	160
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	24	47	50	49
Zinc	5	mg/kg	11	26	46	30
Heavy Metals						
Iron (%)	0.01	%	8.7	3.7	3.4	3.8
Alkali Metals						
Calcium	5	mg/kg	56000	31000	69000	65000
Magnesium	5	mg/kg	11000	12000	25000	17000
Potassium	5	mg/kg	510	930	1000	640
Sodium	5	mg/kg	44000	18000	20000	16000
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	240	83	220	170
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	6.9	8.0	7.1	7.0
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.0	8.2	7.4	7.2
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	69	89	180	96
>2mm Fraction	0.005	g	< 0.005	15	< 0.005	33
Analysed Material	0.1	%	100	86	100	74
Extraneous Material	0.1	%	< 0.1	14	< 0.1	26
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	6.9	8.5	7.6	7.4
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a

Client Sample ID			SP7_0-0.1	SP7_0-0.3	SP8_0-0.1	SP9_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14153	P18-No14154	P18-No14155	P18-No14156
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Chromium Suite (Minus ANC- WA)						
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	0.82	6.0	2.3	1.5
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	160	1200	450	290
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	0.26	1.9	0.72	0.47
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP9_0.05-0.1	SP10_0-0.1	SP10_0.3	SP11_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14157	P18-No14158	P18-No14159	P18-No14160
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	8.8	6.3	8.8	18
Ammonia (as N)	5	mg/kg	890	23	< 5	27
Chloride	5	mg/kg	21000	17000	26000	620
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	10000	8600	12000	2900
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	[G01]< 50	16	13	49
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.8	7.5	7.7	6.2
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	6.8	7.4	7.5	6.2
Sulphate (as SO4)	30	mg/kg	5100	2600	2500	6300
Total Organic Carbon	0.1	%	< 0.1	< 0.1	< 0.1	0.7
% Moisture	1	%	9.9	13	16	9.5
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	22	24	22	60
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	14000	10000	14000	16000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	3.4	14	4.2	19
Barium	10	mg/kg	36	200	49	33
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	12	16	10	16
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	220	1600	470	1100
Cobalt	5	mg/kg	14	39	14	43
Copper	5	mg/kg	21	24	24	25
Iron	20	mg/kg	31000	98000	49000	78000
Lead	5	mg/kg	< 5	6.0	< 5	7.0
Manganese	5	mg/kg	260	1100	400	720

Client Sample ID			SP9_0.05-0.1	SP10_0-0.1	SP10_0.3	SP11_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14157	P18-No14158	P18-No14159	P18-No14160
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	140	290	130	630
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	68	26	11	19
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	100	250	90	220
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	34	110	65	79
Zinc	5	mg/kg	71	37	64	39
Heavy Metals						
Iron (%)	0.01	%	3.1	9.8	4.9	7.8
Alkali Metals						
Calcium	5	mg/kg	2200	680	300	6400
Magnesium	5	mg/kg	14000	7500	16000	3900
Potassium	5	mg/kg	1100	1300	1100	2100
Sodium	5	mg/kg	10000	9300	20000	3100
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	19	14	17	43
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	6.9	7.5	7.7	6.1
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	6.0	7.6	7.4	4.8
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	150	180	170	150
>2mm Fraction	0.005	g	1.7	30	< 0.005	60
Analysed Material	0.1	%	99	86	100	71
Extraneous Material	0.1	%	1.1	14	< 0.1	29
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	6.7	7.9	7.6	6.1
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	4.0
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	0.88	1.8	0.85	n/a
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	180	350	170	n/a
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	0.28	0.56	0.27	n/a
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5

Client Sample ID			SP9_0.05-0.1	SP10_0-0.1	SP10_0.3	SP11_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14157	P18-No14158	P18-No14159	P18-No14160
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Chromium Suite (Minus ANC- WA)						
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP11_0.3	SP12_0-0.1	SP12_0.3	SP13_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14161	P18-No14162	P18-No14163	P18-No14164
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	13	2.5	6.3	7.5
Ammonia (as N)	5	mg/kg	6.7	< 5	< 5	< 5
Chloride	5	mg/kg	2700	2100	7400	350
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	2200	1400	3900	1100
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	51	< 5	< 5	6.2
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.5	7.5	8.0	7.9
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	7.5	6.8	7.7	7.7
Sulphate (as SO4)	30	mg/kg	3500	760	1000	3600
Total Organic Carbon	0.1	%	0.8	0.3	0.7	0.3
% Moisture	1	%	20	5.3	16	12
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	42	41	78	120
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	25000	9300	17000	11000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	8.0	11	21	17
Barium	10	mg/kg	230	110	160	40
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	38	< 10	20	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	350	1100	1300	1300
Cobalt	5	mg/kg	33	27	48	43
Copper	5	mg/kg	76	26	38	23
Iron	20	mg/kg	34000	69000	75000	91000
Lead	5	mg/kg	9.5	6.5	5.6	8.2
Manganese	5	mg/kg	1700	580	460	640
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	430	300	520	440
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	30	< 10	17	19
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	120	160	280	300

Client Sample ID			SP11_0.3	SP12_0-0.1	SP12_0.3	SP13_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14161	P18-No14162	P18-No14163	P18-No14164
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	63	95	98	110
Zinc	5	mg/kg	61	29	46	33
Heavy Metals						
Iron (%)	0.01	%	3.4	6.9	7.5	9.1
Alkali Metals						
Calcium	5	mg/kg	2200	690	1200	6200
Magnesium	5	mg/kg	50000	5200	22000	4200
Potassium	5	mg/kg	4900	1100	1800	970
Sodium	5	mg/kg	3500	2300	7300	1100
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	37	8.4	29	25
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	7.0	7.0	7.9	7.5
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.6	7.1	6.9	7.5
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	57	96	21	80
>2mm Fraction	0.005	g	56	12	< 0.005	18
Analysed Material	0.1	%	50	88	100	82
Extraneous Material	0.1	%	50	12	< 0.1	18
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	7.9	6.8	8.5	8.2
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	4.1	0.42	2.4	1.1
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	820	83	490	210
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	1.3	0.13	0.78	0.34
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP13_0.3	SP14_0-0.1	SP15_0-0.1	SP15_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14165	P18-No14166	P18-No14167	P18-No14168
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	23	7.5	5.0	5.0
Ammonia (as N)	5	mg/kg	< 5	22	[G01]< 50	[G01]< 50
Chloride	5	mg/kg	990	1600	11000	7500
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	1100	2800	8100	6300
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	7.0	28	430	300
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.3	7.9	8.0	8.1
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	6.6	7.9	8.0	8.1
Sulphate (as SO4)	30	mg/kg	580	3900	6800	6200
Total Organic Carbon	0.1	%	0.5	0.3	0.3	< 0.1
% Moisture	1	%	22	9.0	9.5	10
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	240	100	77	120
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	18000	13000	9400	10000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	13	21	14	16
Barium	10	mg/kg	53	140	41	40
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	16	18	29	35
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	890	1900	740	840
Cobalt	5	mg/kg	20	70	110	75
Copper	5	mg/kg	35	27	23	24
Iron	20	mg/kg	54000	100000	54000	63000
Lead	5	mg/kg	7.9	7.9	< 5	< 5
Manganese	5	mg/kg	220	720	1200	790
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	270	540	680	550
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	17	42	71	57
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	190	380	200	170
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	100	130	72	82
Zinc	5	mg/kg	41	32	29	30
Heavy Metals						
Iron (%)	0.01	%	5.4	10	5.4	6.3
Alkali Metals						
Calcium	5	mg/kg	1300	19000	45000	42000
Magnesium	5	mg/kg	4800	7400	17000	15000
Potassium	5	mg/kg	2300	850	640	690
Sodium	5	mg/kg	2400	3200	5900	4500
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	18	61	160	110

Client Sample ID			SP13_0.3	SP14_0-0.1	SP15_0-0.1	SP15_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14165**	**P18-No14166**	**P18-No14167**	**P18-No14168**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	7.1	7.9	7.9	7.9
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	5.8	8.2	7.9	8.1
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	50	63	56	52
>2mm Fraction	0.005	g	8.0	72	2.3	25
Analysed Material	0.1	%	86	47	96	67
Extraneous Material	0.1	%	14	53	4.0	33
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	6.6	8.7	8.3	8.7
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	0.50	0.50	4.1	6.8
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	99	100	810	1400
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	0.16	0.16	1.3	2.2
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP17_0-0.1	SP17_0-0.3	SP18_0-0.1	SP18_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14169**	**P18-No14170**	**P18-No14171**	**P18-No14172**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
% Clay	1	%	5.0	6.3	14	8.8
Ammonia (as N)	5	mg/kg	< 5	< 5	55	34
Chloride	5	mg/kg	10000	9300	38000	33000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	3800	4800	18000	11000
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	< 5	< 5	< 5	< 5
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.5	8.4	8.2	7.7
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	8.5	8.2	8.2	7.5
Sulphate (as SO4)	30	mg/kg	4900	870	8200	2400
Total Organic Carbon	0.1	%	0.2	< 0.1	0.2	< 0.1
Sulphur	5	mg/kg	-	-	-	760
% Moisture	1	%	18	22	12	20

Client Sample ID			SP17_0-0.1	SP17_0-0.3	SP18_0-0.1	SP18_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14169**	**P18-No14170**	**P18-No14171**	**P18-No14172**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	67	55	90	22
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	13000	4400	4100	7000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	39	11	4.6	< 2
Barium	10	mg/kg	66	53	27	11
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	16	< 10	< 10	< 10
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	2400	600	270	30
Cobalt	5	mg/kg	74	13	9.6	< 5
Copper	5	mg/kg	37	26	7.4	9.2
Iron	20	mg/kg	120000	62000	20000	18000
Lead	5	mg/kg	8.7	< 5	9.7	7.6
Manganese	5	mg/kg	720	750	330	130
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	1000	200	110	22
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	39	< 10	50	47
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	330	140	50	14
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	120	38	19	18
Zinc	5	mg/kg	39	39	22	50
Heavy Metals						
Iron (%)	0.01	%	12	6.2	2.0	1.8
Alkali Metals						
Calcium	5	mg/kg	6300	410	4300	310
Magnesium	5	mg/kg	22000	2800	8600	4900
Potassium	5	mg/kg	840	150	660	1700
Sodium	5	mg/kg	6700	7500	16000	30000
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	17	5.2	38	9.5
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	8.4	7.7	7.6	7.4
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	8.4	7.6	7.6	7.6
Reaction Ratings*[S05]		comment	4.0	2.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	98	150	120	150
>2mm Fraction	0.005	g	32	6.2	5.0	< 0.005
Analysed Material	0.1	%	75	96	96	100
Extraneous Material	0.1	%	25	3.9	4.0	< 0.1

Client Sample ID			SP17_0-0.1	SP17_0-0.3	SP18_0-0.1	SP18_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14169**	**P18-No14170**	**P18-No14171**	**P18-No14172**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	9.1	8.0	8.4	7.3
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	1.8	0.19	1.5	0.28
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	350	37	290	55
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	0.57	0.06	0.47	0.09
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP19_0-0.1	SP21_0-0.1	SP21_0-0.3	SP21_0-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14173**	**P18-No14174**	**P18-No14175**	**P18-No14176**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
% Clay	1	%	14	16	10	5.0
Ammonia (as N)	5	mg/kg	32	140	[G01]< 50	[G01]< 50
Chloride	5	mg/kg	28000	27000	26000	11000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	13000	13000	13000	5200
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	28	88	57	[G01]< 50
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.9	7.7	8.2	8.6
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	7.9	7.6	8.1	8.6
Sulphate (as SO4)	30	mg/kg	9300	9900	6200	2400
Total Organic Carbon	0.1	%	0.4	0.8	0.3	0.6
Sulphur	5	mg/kg	8700	-	-	-
% Moisture	1	%	21	18	22	17
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	86	86	130	130
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	14000	18000	19000	18000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	9.7	6.0	13	4.9
Barium	10	mg/kg	45	27	66	30

Client Sample ID			SP19_0-0.1	SP21_0-0.1	SP21_0-0.3	SP21_0-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14173	P18-No14174	P18-No14175	P18-No14176
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	13	22	23	< 10
Cadmium	0.4	mg/kg	< 0.4	0.7	< 0.4	< 0.4
Chromium	5	mg/kg	510	360	600	300
Cobalt	5	mg/kg	34	31	83	41
Copper	5	mg/kg	23	26	36	36
Iron	20	mg/kg	41000	38000	57000	39000
Lead	5	mg/kg	< 5	7.2	< 5	5.8
Manganese	5	mg/kg	600	780	980	1100
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	460	300	1100	450
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	57	120	61	34
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	160	160	220	92
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	51	47	77	41
Zinc	5	mg/kg	41	64	58	82
Heavy Metals						
Iron (%)	0.01	%	4.1	3.8	5.7	3.9
Alkali Metals						
Calcium	5	mg/kg	27000	72000	24000	32000
Magnesium	5	mg/kg	24000	51000	24000	35000
Potassium	5	mg/kg	1600	1800	970	430
Sodium	5	mg/kg	17000	25000	16000	6800
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	42	140	49	32
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	7.4	7.3	7.9	8.3
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.4	7.3	8.5	8.7
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	-	-	100	110
>2mm Fraction	0.005	g	-	-	10.0	23
Analysed Material	0.1	%	-	-	91	83
Extraneous Material	0.1	%	-	-	8.9	17
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	-	-	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	-	-	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	-	-	< 0.02	< 0.02
pH-KCL	0.1	pH Units	-	-	9.1	9.4
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	-	-	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	-	-	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	-	-	< 3	< 3

Client Sample ID			SP19_0-0.1	SP21_0-0.1	SP21_0-0.3	SP21_0-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14173**	**P18-No14174**	**P18-No14175**	**P18-No14176**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
Chromium Suite (Minus ANC- WA)						
Sulfur - KCl Extractable	0.02	% S	-	-	n/a	n/a
HCl Extractable Sulfur	0.02	% S	-	-	n/a	n/a
Net Acid soluble sulfur	0.02	% S	-	-	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	-	-	6.0	6.8
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	-	-	1200	1400
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	-	-	1.9	2.2
ANC Fineness Factor		factor	-	-	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	-	-	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	-	-	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	-	-	< 1	< 1

Client Sample ID			SP23_0-0.1	SP23_0.3	SP24_0-0.1	SP24_0-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14177**	**P18-No14178**	**P18-No14179**	**P18-No14180**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
% Clay	1	%	14	7.5	20	11
Ammonia (as N)	5	mg/kg	[G01]< 50	8.3	39	35
Chloride	5	mg/kg	46000	29000	48000	27000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	20000	18000	16000	14000
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	[G01]< 50	9.9	26	8.7
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.5	7.5	6.3	7.4
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	7.4	7.4	6.3	7.4
Sulphate (as SO4)	30	mg/kg	9000	4000	9900	3900
Total Organic Carbon	0.1	%	0.3	< 0.1	0.1	< 0.1
% Moisture	1	%	12	15	10	16
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	40	21	28	30
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	13000	14000	13000	16000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	11	2.7	17	5.7
Barium	10	mg/kg	99	14	62	15
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	13	< 10	13	< 10
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	700	120	1000	250
Cobalt	5	mg/kg	52	48	31	48
Copper	5	mg/kg	22	32	25	34
Iron	20	mg/kg	41000	28000	47000	34000
Lead	5	mg/kg	< 5	< 5	< 5	< 5

Client Sample ID			SP23_0-0.1	SP23_0.3	SP24_0-0.1	SP24_0-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14177**	**P18-No14178**	**P18-No14179**	**P18-No14180**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
Heavy Metals						
Manganese	5	mg/kg	980	250	370	420
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	650	180	340	110
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	150	48	66	17
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	240	140	230	91
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	59	34	73	39
Zinc	5	mg/kg	37	110	41	140
Heavy Metals						
Iron (%)	0.01	%	4.1	2.8	4.7	3.4
Alkali Metals						
Calcium	5	mg/kg	6500	2700	5200	1100
Magnesium	5	mg/kg	11000	9300	8200	21000
Potassium	5	mg/kg	1700	470	1100	430
Sodium	5	mg/kg	26000	20000	24000	21000
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	26	7.6	49	9.2
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	7.1	7.2	6.7	7.1
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.5	6.9	6.4	7.3
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	-	-	80	59
>2mm Fraction	0.005	g	-	-	32	98
Analysed Material	0.1	%	-	-	72	38
Extraneous Material	0.1	%	-	-	28	62
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	-	-	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	-	-	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	-	-	< 0.02	< 0.02
pH-KCL	0.1	pH Units	-	-	7.9	8.0
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	-	-	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	-	-	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	-	-	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	-	-	n/a	n/a
HCl Extractable Sulfur	0.02	% S	-	-	n/a	n/a
Net Acid soluble sulfur	0.02	% S	-	-	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	-	-	1.3	1.2
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	-	-	250	240
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	-	-	0.40	0.38

Client Sample ID			SP23_0-0.1	SP23_0.3	SP24_0-0.1	SP24_0-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14177	P18-No14178	P18-No14179	P18-No14180
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Chromium Suite (Minus ANC- WA)						
ANC Fineness Factor		factor	-	-	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	-	-	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	-	-	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	-	-	< 1	< 1

Client Sample ID			SP25_0-0.1	SP25_0.3	SP26_0-0.1	SP26_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14181	P18-No14182	P18-No14183	P18-No14184
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	14	14	14	16
Ammonia (as N)	5	mg/kg	840	740	[G01]< 50	95
Chloride	5	mg/kg	28000	39000	28000	26000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	16000	18000	9400	12000
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	[G01]< 50	[G01]< 50	[G01]< 50	[G01]< 50
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.7	7.6	8.6	8.3
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	7.7	7.6	8.5	8.3
Sulphate (as SO4)	30	mg/kg	19000	11000	9100	7700
Total Organic Carbon	0.1	%	0.1	< 0.1	0.1	< 0.1
% Moisture	1	%	15	15	20	20
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	140	56	1300	450
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	29
Heavy Metals						
Aluminium	10	mg/kg	7300	13000	12000	11000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	15	11	13	6.7
Barium	10	mg/kg	80	61	66	66
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	33	20	45	32
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	1100	710	620	300
Cobalt	5	mg/kg	56	38	37	19
Copper	5	mg/kg	33	36	31	26
Iron	20	mg/kg	75000	45000	50000	34000
Lead	5	mg/kg	6.2	5.6	< 5	< 5
Manganese	5	mg/kg	920	680	370	290
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	520	460	310	150
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	170	36	67	61
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10

Client Sample ID			SP25_0-0.1	SP25_0.3	SP26_0-0.1	SP26_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14181	P18-No14182	P18-No14183	P18-No14184
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Titanium	10	mg/kg	270	250	210	160
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	82	64	77	61
Zinc	5	mg/kg	47	61	36	40
Heavy Metals						
Iron (%)	0.01	%	7.5	4.5	5.0	3.4
Alkali Metals						
Calcium	5	mg/kg	16000	880	36000	41000
Magnesium	5	mg/kg	9800	10000	19000	11000
Potassium	5	mg/kg	1100	1200	730	820
Sodium	5	mg/kg	18000	22000	12000	19000
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	100	9.8	54	31
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	7.3	7.3	8.5	7.7
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.4	7.6	8.6	8.5
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	120	120	99	90
>2mm Fraction	0.005	g	5.5	< 0.005	28	5.5
Analysed Material	0.1	%	96	100	78	94
Extraneous Material	0.1	%	4.4	< 0.1	22	5.7
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	8.1	7.9	8.9	8.9
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	1.6	1.3	6.8	8.2
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	310	260	1400	1600
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	0.50	0.41	2.2	2.6
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP27_0-0.1	SP27_0.3	SP28_0-0.1	SP28_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14185	P18-No14186	P18-No14187	P18-No14188
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	8.8	5.0	11	11
Ammonia (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Chloride	5	mg/kg	41000	30000	20000	18000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	13000	9800	12000	11000
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	8.6	8.1	13	5.6
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.7	7.6	8.4	8.3
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	7.3	7.2	8.3	8.2
Sulphate (as SO4)	30	mg/kg	5200	2900	5300	4500
Total Organic Carbon	0.1	%	< 0.1	< 0.1	< 0.1	0.1
% Moisture	1	%	18	20	13	15
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	22	< 20	84	160
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	24	< 20
Heavy Metals						
Aluminium	10	mg/kg	4900	370	14000	11000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	6.6	< 2	32	14
Barium	10	mg/kg	20	< 10	45	33
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	< 10	< 10	55	36
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	460	< 5	1600	710
Cobalt	5	mg/kg	11	< 5	37	29
Copper	5	mg/kg	8.8	< 5	33	28
Iron	20	mg/kg	23000	240	92000	52000
Lead	5	mg/kg	< 5	< 5	5.2	< 5
Manganese	5	mg/kg	190	14	760	270
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	140	< 5	330	210
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	15	< 10	54	51
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	120	22	280	230
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	29	< 10	140	81
Zinc	5	mg/kg	16	< 5	34	31
Heavy Metals						
Iron (%)	0.01	%	2.3	0.02	9.2	5.2
Alkali Metals						
Calcium	5	mg/kg	350	120	27000	35000
Magnesium	5	mg/kg	7200	2400	11000	9600
Potassium	5	mg/kg	480	98	660	570
Sodium	5	mg/kg	21000	20000	16000	13000
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	3.8	7.6	55	52

Client Sample ID			SP27_0-0.1	SP27_0.3	SP28_0-0.1	SP28_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14185	P18-No14186	P18-No14187	P18-No14188
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	7.3	6.8	8.0	8.0
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.3	6.3	8.1	8.9
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	130	150	76	110
>2mm Fraction	0.005	g	< 0.005	< 0.005	37	32
Analysed Material	0.1	%	100	100	67	78
Extraneous Material	0.1	%	< 0.1	< 0.1	33	22
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	8.3	7.1	8.9	8.9
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	1.2	< 0.01	4.9	6.2
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	240	< 2	980	1200
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	0.38	< 0.02	1.6	2.0
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP29_0-0.1	SP29_0.3	SP30_0-0.1	SP31_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14189	P18-No14190	P18-No14191	P18-No14192
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	6.3	3.8	5.0	7.5
Ammonia (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Chloride	5	mg/kg	25000	22000	660	4900
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	12000	11000	1500	4500
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	8.9	5.1	7.6	50
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.8	6.5	7.4	8.4
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	7.7	6.7	7.5	8.4
Sulphate (as SO4)	30	mg/kg	7500	5400	4000	5000
Total Organic Carbon	0.1	%	0.1	< 0.1	0.3	0.2
% Moisture	1	%	15	7.5	8.4	9.2

Client Sample ID			SP29_0-0.1	SP29_0.3	SP30_0-0.1	SP31_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14189	P18-No14190	P18-No14191	P18-No14192
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	26	< 20	170	1200
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	9200	6400	15000	9500
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	25	2.9	11	16
Barium	10	mg/kg	74	11	140	55
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	< 10	< 10	32	40
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	1800	77	540	1000
Cobalt	5	mg/kg	26	6.4	40	36
Copper	5	mg/kg	19	5.5	44	47
Iron	20	mg/kg	87000	22000	44000	88000
Lead	5	mg/kg	7.2	< 5	5.4	8.6
Manganese	5	mg/kg	390	94	590	460
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	370	26	490	310
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	64	71	44	44
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	310	72	160	250
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	98	< 10	69	110
Zinc	5	mg/kg	28	70	43	42
Heavy Metals						
Iron (%)	0.01	%	8.7	2.2	4.4	8.8
Alkali Metals						
Calcium	5	mg/kg	6300	980	27000	33000
Magnesium	5	mg/kg	9000	3900	18000	9600
Potassium	5	mg/kg	680	670	2100	680
Sodium	5	mg/kg	16000	13000	1400	3600
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	28	7.9	78	92
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	7.7	7.1	8.1	8.2
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.5	8.5	8.4	8.7
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	120	99	110	96
>2mm Fraction	0.005	g	9.4	< 0.005	15	15
Analysed Material	0.1	%	93	100	88	87
Extraneous Material	0.1	%	7.0	< 0.1	12	13

Client Sample ID			SP29_0-0.1	SP29_0.3	SP30_0-0.1	SP31_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14189	P18-No14190	P18-No14191	P18-No14192
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	8.5	8.3	8.5	9.1
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	2.0	0.15	4.7	7.2
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	400	31	930	1400
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	0.64	0.05	1.5	2.3
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP31_0.3	SP32_0-0.1	SP32_0.3	SP33_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14193	P18-No14194	P18-No14195	P18-No14196
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	13	10	13	6.3
Ammonia (as N)	5	mg/kg	[G01]< 50	< 5	< 5	1600
Chloride	5	mg/kg	7400	160	3300	19000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	7300	260	2400	15000
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	79	< 5	< 5	[G01]< 50
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.5	9.2	9.1	7.1
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	8.4	8.5	9.1	7.1
Sulphate (as SO4)	30	mg/kg	8500	35	930	19000
Total Organic Carbon	0.1	%	0.1	0.6	0.6	< 0.1
% Moisture	1	%	27	14	6.9	29
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	240	4600	960	47
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	240	27	< 20
Heavy Metals						
Aluminium	10	mg/kg	12000	19000	14000	6500
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	9.2	6.9	7.7	17
Barium	10	mg/kg	68	110	64	33
Beryllium	2	mg/kg	2.1	< 2	< 2	< 2

Client Sample ID			SP31_0.3	SP32_0-0.1	SP32_0.3	SP33_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14193	P18-No14194	P18-No14195	P18-No14196
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	46	21	32	28
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	360	410	270	1500
Cobalt	5	mg/kg	22	34	18	99
Copper	5	mg/kg	30	35	36	8.7
Iron	20	mg/kg	41000	49000	34000	130000
Lead	5	mg/kg	5.1	6.9	< 5	< 5
Manganese	5	mg/kg	480	1100	530	1300
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	220	230	130	1400
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	72	62	170	56
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	200	210	170	280
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	75	81	71	27
Zinc	5	mg/kg	43	62	40	14
Heavy Metals						
Iron (%)	0.01	%	4.1	4.9	3.4	13
Alkali Metals						
Calcium	5	mg/kg	53000	50000	98000	33000
Magnesium	5	mg/kg	20000	19000	18000	5700
Potassium	5	mg/kg	1100	2500	1600	510
Sodium	5	mg/kg	6600	500	3200	20000
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	77	42	42	180
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	8.1	8.9	8.9	6.9
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	8.5	9.3	9.2	6.9
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	120	86	67	98
>2mm Fraction	0.005	g	9.9	< 0.005	73	< 0.005
Analysed Material	0.1	%	93	100	48	100
Extraneous Material	0.1	%	7.3	< 0.1	52	< 0.1
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	8.9	9.2	9.3	7.6
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a

Client Sample ID			SP31_0.3	SP32_0-0.1	SP32_0.3	SP33_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14193	P18-No14194	P18-No14195	P18-No14196
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Chromium Suite (Minus ANC- WA)						
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	12	12	25	0.31
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	2400	2500	5100	62
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	3.8	4.0	8.2	0.10
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP33_0.3	SP34_0-0.1	SP34_0.3	SP35_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14197	P18-No14198	P18-No14199	P18-No14200
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	5.0	7.5	8.8	8.8
Ammonia (as N)	5	mg/kg	1400	830	1300	1800
Chloride	5	mg/kg	19000	21000	17000	37000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	11000	13000	12000	17000
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	[G01]< 50	260	450	180
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.7	7.4	7.6	6.9
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	7.6	7.4	7.5	6.9
Sulphate (as SO4)	30	mg/kg	18000	19000	16000	25000
Total Organic Carbon	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
% Moisture	1	%	34	33	42	33
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	120	51	70	33
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	7100	8400	7800	6100
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	17	22	25	22
Barium	10	mg/kg	28	45	39	23
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	30	22	25	31
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	1700	1100	1300	1500
Cobalt	5	mg/kg	120	86	51	65
Copper	5	mg/kg	12	10	9.2	11
Iron	20	mg/kg	130000	130000	140000	140000
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Manganese	5	mg/kg	1400	880	780	830

Client Sample ID			SP33_0.3	SP34_0-0.1	SP34_0.3	SP35_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14197	P18-No14198	P18-No14199	P18-No14200
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	1500	1000	1000	1300
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	53	53	65	52
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	350	250	310	330
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	30	23	25	36
Zinc	5	mg/kg	12	17	10	20
Heavy Metals						
Iron (%)	0.01	%	13	13	14	14
Alkali Metals						
Calcium	5	mg/kg	37000	31000	42000	41000
Magnesium	5	mg/kg	3500	3200	1800	8800
Potassium	5	mg/kg	400	730	670	470
Sodium	5	mg/kg	13000	18000	13000	27000
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	200	150	220	230
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	7.3	7.3	7.3	6.7
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.4	7.2	7.1	6.7
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	99	81	89	82
>2mm Fraction	0.005	g	< 0.005	< 0.005	< 0.005	< 0.005
Analysed Material	0.1	%	100	100	100	100
Extraneous Material	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	7.8	7.1	7.1	6.5
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	0.96	0.17	0.17	0.10
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	190	34	35	19
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	0.31	0.05	0.06	0.03
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5

Client Sample ID			SP33_0.3	SP34_0-0.1	SP34_0.3	SP35_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14197	P18-No14198	P18-No14199	P18-No14200
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Chromium Suite (Minus ANC- WA)						
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP35_0.3	SP36_0-0.1	SP36_0.3	SP37_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14201	P18-No14202	P18-No14203	P18-No14204
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	10	8.8	10	8.8
Ammonia (as N)	5	mg/kg	2200	1000	920	600
Chloride	5	mg/kg	34000	32000	32000	33000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	14000	12000	16000	19000
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	170	< 5	< 5	7.5
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.0	7.2	7.1	7.1
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	7.0	7.2	7.0	7.1
Sulphate (as SO4)	30	mg/kg	22000	16000	16000	26000
Total Organic Carbon	0.1	%	< 0.1	< 0.1	< 0.1	0.2
% Moisture	1	%	38	22	13	15
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	54	33	32	34
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	9600	14000	9800	4900
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	35	5.6	< 2	7.0
Barium	10	mg/kg	22	40	43	17
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	32	22	11	17
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.4	< 0.4
Chromium	5	mg/kg	1900	310	87	350
Cobalt	5	mg/kg	61	32	17	21
Copper	5	mg/kg	11	32	31	8.1
Iron	20	mg/kg	160000	46000	32000	34000
Lead	5	mg/kg	< 5	5.5	31	< 5
Manganese	5	mg/kg	520	780	1300	630
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	1900	220	120	300
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	0.4	< 0.2
Strontium	10	mg/kg	49	41	69	530
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	450	150	53	100

Client Sample ID			SP35_0.3	SP36_0-0.1	SP36_0.3	SP37_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14201	P18-No14202	P18-No14203	P18-No14204
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	32	51	26	19
Zinc	5	mg/kg	17	69	61	14
Heavy Metals						
Iron (%)	0.01	%	16	4.6	3.2	3.4
Alkali Metals						
Calcium	5	mg/kg	35000	3600	5400	100000
Magnesium	5	mg/kg	6200	20000	10000	7400
Potassium	5	mg/kg	520	1100	1300	500
Sodium	5	mg/kg	25000	17000	24000	23000
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	200	10	15	210
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	6.9	6.8	7.0	7.0
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	6.6	7.3	7.3	7.6
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	73	150	110	130
>2mm Fraction	0.005	g	< 0.005	1.7	< 0.005	< 0.005
Analysed Material	0.1	%	100	99	100	100
Extraneous Material	0.1	%	< 0.1	1.1	< 0.1	< 0.1
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	6.4	7.7	7.4	7.8
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	n/a	0.61	0.34	0.51
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	n/a	120	67	100
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	n/a	0.20	0.11	0.16
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP37_0.3	SP38_0-0.1	SP38_0.3	SP39_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14205	P18-No14206	P18-No14207	P18-No14208
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	7.5	18	2.5	5.0
Ammonia (as N)	5	mg/kg	560	8.9	< 5	23
Chloride	5	mg/kg	22000	4400	7400	13000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	15000	4400	6500	8800
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	< 5	15	< 5	290
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.2	7.4	7.9	8.2
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	7.2	7.6	8.2	8.2
Sulphate (as SO4)	30	mg/kg	17000	9200	11000	8000
Total Organic Carbon	0.1	%	0.1	0.5	0.3	< 0.1
% Moisture	1	%	15	20	10	9.2
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	37	110	330	71
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	17000	19000	6700	8500
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	3.8	23	7.0	12
Barium	10	mg/kg	48	510	34	30
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	11	52	22	30
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	300	1000	310	490
Cobalt	5	mg/kg	70	29	14	63
Copper	5	mg/kg	29	34	14	26
Iron	20	mg/kg	37000	72000	24000	52000
Lead	5	mg/kg	11	7.1	< 5	< 5
Manganese	5	mg/kg	1900	550	200	790
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	280	360	160	530
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	320	67	76	66
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	70	270	98	140
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	37	100	34	51
Zinc	5	mg/kg	71	38	15	27
Heavy Metals						
Iron (%)	0.01	%	3.7	7.2	2.4	5.2
Alkali Metals						
Calcium	5	mg/kg	37000	7500	150000	44000
Magnesium	5	mg/kg	18000	39000	10000	15000
Potassium	5	mg/kg	1400	2100	700	650
Sodium	5	mg/kg	9800	5700	5400	8500
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	140	60	220	200

Client Sample ID			SP37_0.3	SP38_0-0.1	SP38_0.3	SP39_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14205	P18-No14206	P18-No14207	P18-No14208
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	7.0	7.8	8.0	7.8
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.7	7.6	8.8	7.9
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	110	110	110	110
>2mm Fraction	0.005	g	57	3.1	2.1	13
Analysed Material	0.1	%	66	97	98	89
Extraneous Material	0.1	%	34	2.8	1.9	11
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	< 1	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
pH-KCL	0.1	pH Units	8.0	8.5	8.8	8.6
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	< 2	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	< 0.005	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	< 3	< 3
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	n/a	n/a
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	n/a	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	0.44	3.1	3.8	6.9
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	87	610	750	1400
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	0.14	0.98	1.2	2.2
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	< 10	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	< 1	< 1

Client Sample ID			SP39_0.3	REF1 0-0.1	QC1	QC1A
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			P18-No14209	P18-No14210	P18-No14211	P18-No14212
Date Sampled			Nov 06, 2018	Nov 06, 2018	Nov 06, 2018	Nov 06, 2018
Test/Reference	LOR	Unit				
% Clay	1	%	8.8	8.8	12	8.4
Ammonia (as N)	5	mg/kg	8.1	< 5	8.3	9.8
Chloride	5	mg/kg	5500	1100	21000	37000
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	4500	660	9700	16000
Cyanide (free)	5	mg/kg	< 5	< 5	< 5	< 5
Nitrate (as N)	5	mg/kg	110	< 5	430	400
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.2	8.9	8.4	8.4
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	8.1	8.4	8.4	8.3
Sulphate (as SO4)	30	mg/kg	7200	94	6600	6500
Total Organic Carbon	0.1	%	0.2	0.8	0.2	0.3
% Moisture	1	%	15	7.9	18	12

Client Sample ID			SP39_0.3	REF1 0-0.1	QC1	QC1A
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14209**	**P18-No14210**	**P18-No14211**	**P18-No14212**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	79	190	110	100
Carbonate Alkalinity (as CaCO3)	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Aluminium	10	mg/kg	13000	17000	14000	14000
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2	mg/kg	11	7.1	10	10
Barium	10	mg/kg	52	100	55	81
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Bismuth	10	mg/kg	< 10	< 10	< 10	< 10
Boron	10	mg/kg	20	16	63	67
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	820	390	510	590
Cobalt	5	mg/kg	38	19	25	31
Copper	5	mg/kg	27	39	30	35
Iron	20	mg/kg	70000	47000	51000	66000
Lead	5	mg/kg	5.9	7.5	< 5	< 5
Manganese	5	mg/kg	780	620	460	570
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	340	150	240	280
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Strontium	10	mg/kg	34	65	62	72
Thallium	10	mg/kg	< 10	< 10	< 10	< 10
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Titanium	10	mg/kg	230	180	180	190
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
Vanadium	10	mg/kg	89	81	72	82
Zinc	5	mg/kg	42	51	46	56
Heavy Metals						
Iron (%)	0.01	%	7.0	4.7	5.1	6.6
Alkali Metals						
Calcium	5	mg/kg	17000	53000	34000	41000
Magnesium	5	mg/kg	8900	10000	11000	17000
Potassium	5	mg/kg	1200	2700	1200	1400
Sodium	5	mg/kg	5600	990	11000	23000
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	44	42	100	76
Acid Sulfate Soils Field pH Test						
pH-F (Field pH test)*	0.1	pH Units	8.0	8.5	8.2	8.1
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	8.1	8.7	8.5	8.4
Reaction Ratings*[S05]		comment	4.0	4.0	4.0	4.0
Extraneous Material						
<2mm Fraction	0.005	g	72	60	-	-
>2mm Fraction	0.005	g	97	8.3	-	-
Analysed Material	0.1	%	43	88	-	-
Extraneous Material	0.1	%	57	12	-	-

Client Sample ID			SP39_0.3	REF1 0-0.1	QC1	QC1A
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**P18-No14209**	**P18-No14210**	**P18-No14211**	**P18-No14212**
Date Sampled			**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**	**Nov 06, 2018**
Test/Reference	LOR	Unit				
Chromium Suite (Minus ANC- WA)						
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1	< 1	-	-
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	-	-
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	-	-
pH-KCL	0.1	pH Units	8.8	9.0	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	< 2	-	-
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	-	-
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005	< 0.005	-	-
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3	< 3	-	-
Sulfur - KCl Extractable	0.02	% S	n/a	n/a	-	-
HCl Extractable Sulfur	0.02	% S	n/a	n/a	-	-
Net Acid soluble sulfur	0.02	% S	n/a	n/a	-	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	-	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	n/a	-	-
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	3.3	7.5	-	-
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	670	1500	-	-
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	1.1	2.4	-	-
ANC Fineness Factor		factor	1.5	1.5	-	-
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	< 0.02	-	-
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10	< 10	-	-
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1	< 1	-	-

Client Sample ID			REF1 0.3
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**P18-No14488**
Date Sampled			**Nov 06, 2018**
Test/Reference	LOR	Unit	
% Clay	1	%	20
Ammonia (as N)	5	mg/kg	< 5
Chloride	5	mg/kg	3300
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	2200
Cyanide (free)	5	mg/kg	< 5
Nitrate (as N)	5	mg/kg	< 5
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	9.0
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	8.6
Sulphate (as SO4)	30	mg/kg	700
Total Organic Carbon	0.1	%	1.2
% Moisture	1	%	8.8
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/kg	550
Carbonate Alkalinity (as CaCO3)	20	mg/kg	30
Heavy Metals			
Aluminium	10	mg/kg	16000
Antimony	10	mg/kg	< 10
Arsenic	2	mg/kg	7.9
Barium	10	mg/kg	100
Beryllium	2	mg/kg	< 2

Client Sample ID			REF1 0.3
Sample Matrix			Soil
Eurofins | mgt Sample No.			P18-No14488
Date Sampled			Nov 06, 2018
Test/Reference	LOR	Unit	
Heavy Metals			
Bismuth	10	mg/kg	< 10
Boron	10	mg/kg	23
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	280
Cobalt	5	mg/kg	16
Copper	5	mg/kg	43
Iron	20	mg/kg	36000
Lead	5	mg/kg	5.7
Manganese	5	mg/kg	400
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	120
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Strontium	10	mg/kg	130
Thallium	10	mg/kg	< 10
Tin	10	mg/kg	< 10
Titanium	10	mg/kg	200
Uranium	10	mg/kg	< 10
Vanadium	10	mg/kg	72
Zinc	5	mg/kg	39
Heavy Metals			
Iron (%)	0.01	%	3.6
Alkali Metals			
Calcium	5	mg/kg	100000
Magnesium	5	mg/kg	15000
Potassium	5	mg/kg	2200
Sodium	5	mg/kg	2900
Cation Exchange Capacity			
Cation Exchange Capacity	0.05	meq/100g	45
Acid Sulfate Soils Field pH Test			
pH-F (Field pH test)*	0.1	pH Units	8.8
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	9.0
Reaction Ratings*[S05]		comment	4.0
Extraneous Material			
<2mm Fraction	0.005	g	110
>2mm Fraction	0.005	g	6.3
Analysed Material	0.1	%	94
Extraneous Material	0.1	%	5.5
Chromium Suite (Minus ANC- WA)			
CRS suite WA (-ANC) - Liming Rate	1	kg CaCO3/t	< 1
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	10	mol H+/t	< 10
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	0.02	% S	< 0.02
pH-KCL	0.1	pH Units	9.3
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02
Chromium Reducible Sulfur[S04]	0.005	% S	< 0.005
Chromium Reducible Sulfur -acidity units	3	mol H+/t	< 3
Sulfur - KCl Extractable	0.02	% S	n/a

Client Sample ID			REF1 0.3
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**P18-No14488**
Date Sampled			**Nov 06, 2018**
Test/Reference	LOR	Unit	
Chromium Suite (Minus ANC- WA)			
HCl Extractable Sulfur	0.02	% S	n/a
Net Acid soluble sulfur	0.02	% S	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a
Acid Neutralising Capacity (ANCbt)	0.01	%CaCO3	31
Acid Neutralising Capacity - acidity (a-ANCbt)	2	mol H+/t	6300
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)[S03]	0.02	% S	10
ANC Fineness Factor		factor	1.5
CRS Suite - Net Acidity (Sulfur Units)	0.02	% S	< 0.02
CRS Suite - Net Acidity (Acidity Units)	10	mol H+/t	< 10
CRS Suite - Liming Rate[S01]	1	kg CaCO3/t	< 1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
NEPM Screen for Soil Classification			
% Clay	Brisbane	Nov 19, 2018	6 Day
- Method: LTM-GEN-7040			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Nov 15, 2018	7 Day
- Method: LTM-INO-4030 Conductivity			
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	Melbourne	Nov 14, 2018	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Total Organic Carbon	Melbourne	Nov 15, 2018	28 Day
- Method: APHA 5310B Total Organic Carbon			
Heavy Metals	Melbourne	Nov 14, 2018	180 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Cation Exchange Capacity	Melbourne	Nov 15, 2018	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
Nitrogens (speciated)			
Ammonia (as N)	Melbourne	Nov 14, 2018	7 Day
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate (as N)	Melbourne	Nov 26, 2018	28 Day
- Method: APHA 4500-NO3 Nitrate Nitrogen by FIA			
Eurofins | mgt Suite B11			
Chloride	Melbourne	Nov 14, 2018	28 Day
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Sulphate (as SO4)	Melbourne	Nov 14, 2018	28 Day
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Nov 14, 2018	14 Day
- Method: APHA 2320 Alkalinity by Titration			
Alkali Metals	Melbourne	Nov 14, 2018	180 Day
- Method: LTM-MET-3010 Alkali Metals S Si and P by ICP-AES			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Nov 14, 2018	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Sulphur	Melbourne	Nov 14, 2018	7 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Acid Sulfate Soils Field pH Test	Brisbane	Nov 19, 2018	7 Days
- Method: LTM-GEN-7060 Determination of field pH (pHF) and field pH peroxide (pHFOX) tests			
% Moisture	Melbourne	Nov 12, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			
Extraneous Material	Brisbane	Nov 23, 2018	6 Week
- Method: LTM-GEN-7050/7070			
Chromium Suite (Minus ANC- WA)	Brisbane	Nov 23, 2018	6 Week
- Method: LTM-GEN-7070			

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Site # 23736

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QLD 4000

Project Name: BYLONG
Project ID: 67511369

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Phone: 07 3858 4800
Fax:

Received: Nov 9, 2018 9:14 AM
Due: Nov 23, 2018
Priority: 10 Day
Contact Name: Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
External Laboratory																																																																		
1	SP1_0-0.1	Nov 06, 2018		Soil	P18-No14141	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
2	SP1_0-0.3	Nov 06, 2018		Soil	P18-No14142	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
3	SP2_0-0.1	Nov 06, 2018		Soil	P18-No14143	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
4	SP2_0-0.3	Nov 06, 2018		Soil	P18-No14144	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
5	SP3_0-0.1	Nov 06, 2018		Soil	P18-No14145	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
6	SP3_0-0.3	Nov 06, 2018		Soil	P18-No14146	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
7	SP4_0-0.1	Nov 06, 2018		Soil	P18-No14147	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
8	SP4_0-0.3	Nov 06, 2018		Soil	P18-No14148	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
9	SP5_0-0.1	Nov 06, 2018		Soil	P18-No14149	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																															X	X	X		X
10	SP5_0-0.3	Nov 06, 2018		Soil	P18-No14150	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
11	SP6_0-0.1	Nov 06, 2018		Soil	P18-No14151	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
12	SP6_0-0.3	Nov 06, 2018		Soil	P18-No14152	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
13	SP7_0-0.1	Nov 06, 2018		Soil	P18-No14153	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
14	SP7_0-0.3	Nov 06, 2018		Soil	P18-No14154	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
15	SP8_0-0.1	Nov 06, 2018		Soil	P18-No14155	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
16	SP9_0-0.05	Nov 06, 2018		Soil	P18-No14156	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
17	SP9_0.05-0.1	Nov 06, 2018		Soil	P18-No14157	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
18	SP10_0-0.1	Nov 06, 2018		Soil	P18-No14158	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
19	SP10_0.3	Nov 06, 2018		Soil	P18-No14159	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
20	SP11_0-0.1	Nov 06, 2018		Soil	P18-No14160	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
21	SP11_0.3	Nov 06, 2018		Soil	P18-No14161	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																									
Brisbane Laboratory - NATA Site # 20794																									
Perth Laboratory - NATA Site # 23736																									
22	SP12_0-0.1	Nov 06, 2018		Soil	P18-No14162	X		X		X		X		X		X		X		X		X		X	
23	SP12_0.3	Nov 06, 2018		Soil	P18-No14163	X		X		X		X		X		X		X		X		X		X	
24	SP13_0-0.1	Nov 06, 2018		Soil	P18-No14164	X		X		X		X		X		X		X		X		X		X	
25	SP13_0.3	Nov 06, 2018		Soil	P18-No14165	X		X		X		X		X		X		X		X		X		X	
26	SP14_0-0.1	Nov 06, 2018		Soil	P18-No14166	X		X		X		X		X		X		X		X		X		X	
27	SP15_0-0.1	Nov 06, 2018		Soil	P18-No14167	X		X		X		X		X		X		X		X		X		X	
28	SP15_0.3	Nov 06, 2018		Soil	P18-No14168	X		X		X		X		X		X		X		X		X		X	
29	SP17_0-0.1	Nov 06, 2018		Soil	P18-No14169	X		X		X		X		X		X		X		X		X		X	
30	SP17_0-0.3	Nov 06, 2018		Soil	P18-No14170	X		X		X		X		X		X		X		X		X		X	
31	SP18_0-0.1	Nov 06, 2018		Soil	P18-No14171	X		X		X		X		X		X		X		X		X		X	
32	SP18_0.3	Nov 06, 2018		Soil	P18-No14172	X		X		X		X		X		X		X		X		X		X	
33	SP19_0-0.1	Nov 06, 2018		Soil	P18-No14173	X		X		X		X		X		X		X		X		X		X	

Sample Detail	Cobalt (filtered) → Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)
Melbourne Laboratory - NATA Site # 1254 & 14271	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																				
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736					X															
22 P18-No14162	X		X			X		X		X		X		X		X	X		X	
23 P18-No14163	X		X			X		X		X		X		X		X	X		X	
24 P18-No14164	X		X			X		X		X		X		X		X	X		X	
25 P18-No14165	X		X			X		X		X		X		X		X	X		X	
26 P18-No14166	X		X			X		X		X		X		X		X	X		X	
27 P18-No14167	X		X			X		X		X		X		X		X	X		X	
28 P18-No14168	X		X			X		X		X		X		X		X	X		X	
29 P18-No14169	X		X			X		X		X		X		X		X	X		X	
30 P18-No14170	X		X			X		X		X		X		X		X	X		X	
31 P18-No14171	X		X			X		X		X		X		X		X	X		X	
32 P18-No14172	X		X			X		X		X		X		X		X	X		X	
33 P18-No14173	X		X			X		X		X		X		X		X	X		X	

Sample Detail	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																					
Brisbane Laboratory - NATA Site # 20794																X				X	X
Perth Laboratory - NATA Site # 23736																	X	X	X		X
22 P18-No14162	X			X		X		X		X		X		X		X	X		X	X	X
23 P18-No14163	X			X		X		X		X		X		X		X	X		X	X	X
24 P18-No14164	X			X		X		X		X		X		X		X	X		X	X	X
25 P18-No14165	X			X		X		X		X		X		X		X	X		X	X	X
26 P18-No14166	X			X		X		X		X		X		X		X	X		X	X	X
27 P18-No14167	X			X		X		X		X		X		X		X	X		X	X	X
28 P18-No14168	X			X		X		X		X		X		X		X	X		X	X	X
29 P18-No14169	X			X		X		X		X		X		X		X	X		X	X	X
30 P18-No14170	X			X		X		X		X		X		X		X	X		X	X	X
31 P18-No14171	X			X		X		X		X		X		X		X	X		X	X	X
32 P18-No14172	X		X	X		X		X		X		X		X		X	X		X	X	X
33 P18-No14173	X		X	X		X		X		X		X		X		X	X		X		X

Company Name:	SLR Consulting (Qld)	**Order No.:**		**Received:**	Nov 9, 2018 9:14 AM
Address:	Level 2 15 Astor Terrace	**Report #:**	627226	**Due:**	Nov 23, 2018
	Spring Hill	**Phone:**	07 3858 4800	**Priority:**	10 Day
	QLD 4000	**Fax:**		**Contact Name:**	Ruairi Hanley
Project Name:	BYLONG				
Project ID:	67511369				

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
34	SP21_0-0.1	Nov 06, 2018		Soil	P18-No14174	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
35	SP21_0-0.3	Nov 06, 2018		Soil	P18-No14175	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
36	SP21_0-0.3	Nov 06, 2018		Soil	P18-No14176	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
37	SP23_0-0.1	Nov 06, 2018		Soil	P18-No14177	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
38	SP23_0.3	Nov 06, 2018		Soil	P18-No14178	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
39	SP24_0-0.1	Nov 06, 2018		Soil	P18-No14179	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
40	SP24_0-0.3	Nov 06, 2018		Soil	P18-No14180	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
41	SP25_0-0.1	Nov 06, 2018		Soil	P18-No14181	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
42	SP25_0.3	Nov 06, 2018		Soil	P18-No14182	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
43	SP26_0-0.1	Nov 06, 2018		Soil	P18-No14183	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
44	SP26_0.3	Nov 06, 2018		Soil	P18-No14184	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
45	SP27_0-0.1	Nov 06, 2018		Soil	P18-No14185	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: SLR Consulting (Qld)
Address: Level 2 15 Astor Terrace
Spring Hill
QLD 4000

Project Name: BYLONG
Project ID: 67511369

Order No.:
Report #: 627226
Phone: 07 3858 4800
Fax:

Received: Nov 9, 2018 9:14 AM
Due: Nov 23, 2018
Priority: 10 Day
Contact Name: Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																			
Brisbane Laboratory - NATA Site # 20794																																																														X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
46	SP27_0.3	Nov 06, 2018		Soil	P18-No14186	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
47	SP28_0-0.1	Nov 06, 2018		Soil	P18-No14187	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
48	SP28_0.3	Nov 06, 2018		Soil	P18-No14188	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
49	SP29_0-0.1	Nov 06, 2018		Soil	P18-No14189	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
50	SP29_0.3	Nov 06, 2018		Soil	P18-No14190	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
51	SP30_0-0.1	Nov 06, 2018		Soil	P18-No14191	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
52	SP31_0-0.1	Nov 06, 2018		Soil	P18-No14192	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
53	SP31_0.3	Nov 06, 2018		Soil	P18-No14193	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
54	SP32_0-0.1	Nov 06, 2018		Soil	P18-No14194	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
55	SP32_0.3	Nov 06, 2018		Soil	P18-No14195	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
56	SP33_0-0.1	Nov 06, 2018		Soil	P18-No14196	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
57	SP33_0.3	Nov 06, 2018		Soil	P18-No14197	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

Company Name:	SLR Consulting (Qld)	**Order No.:**	
Address:	Level 2 15 Astor Terrace	**Report #:**	627226
	Spring Hill	**Phone:**	07 3858 4800
	QLD 4000	**Fax:**	
Project Name:	BYLONG		
Project ID:	67511369		

Received:	Nov 9, 2018 9:14 AM
Due:	Nov 23, 2018
Priority:	10 Day
Contact Name:	Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
58	SP34_0-0.1	Nov 06, 2018		Soil	P18-No14198	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
59	SP34_0.3	Nov 06, 2018		Soil	P18-No14199	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
60	SP35_0-0.1	Nov 06, 2018		Soil	P18-No14200	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
61	SP35_0.3	Nov 06, 2018		Soil	P18-No14201	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
62	SP36_0-0.1	Nov 06, 2018		Soil	P18-No14202	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
63	SP36_0.3	Nov 06, 2018		Soil	P18-No14203	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
64	SP37_0-0.1	Nov 06, 2018		Soil	P18-No14204	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
65	SP37_0.3	Nov 06, 2018		Soil	P18-No14205	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
66	SP38_0-0.1	Nov 06, 2018		Soil	P18-No14206	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
67	SP38_0.3	Nov 06, 2018		Soil	P18-No14207	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
68	SP39_0-0.1	Nov 06, 2018		Soil	P18-No14208	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
69	SP39_0.3	Nov 06, 2018		Soil	P18-No14209	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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Company Name:	SLR Consulting (Qld)	**Order No.:**	
Address:	Level 2 15 Astor Terrace	**Report #:**	627226
	Spring Hill	**Phone:**	07 3858 4800
	QLD 4000	**Fax:**	
Project Name:	BYLONG		
Project ID:	67511369		

Received:	Nov 9, 2018 9:14 AM
Due:	Nov 23, 2018
Priority:	10 Day
Contact Name:	Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail

						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																																				
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																														X						
70	REF1 0-0.1	Nov 06, 2018		Soil	P18-No14210	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
71	QC1	Nov 06, 2018		Soil	P18-No14211	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
72	QC1A	Nov 06, 2018		Soil	P18-No14212	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
73	BMH04	Nov 07, 2018		Water	P18-No14213		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X
74	BMH02	Nov 07, 2018		Water	P18-No14214		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X
75	BMH09	Nov 07, 2018		Water	P18-No14215		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X
76	BMH10	Nov 07, 2018		Water	P18-No14216																								X							
77	BMH11	Nov 07, 2018		Water	P18-No14217		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X
78	BMH12	Nov 07, 2018		Water	P18-No14218		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X
79	BMH06	Nov 07, 2018		Water	P18-No14219		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X
80	BMH08	Nov 07, 2018		Water	P18-No14220		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X
81	BMH01 D	Nov 07, 2018		Water	P18-No14221																									X						

						Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																			
Brisbane Laboratory - NATA Site # 20794																														X				X	X
Perth Laboratory - NATA Site # 23736																															X	X	X		X
70	REF1 0-0.1	Nov 06, 2018		Soil	P18-No14210	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
71	QC1	Nov 06, 2018		Soil	P18-No14211	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
72	QC1A	Nov 06, 2018		Soil	P18-No14212	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
73	BMH04	Nov 07, 2018		Water	P18-No14213		X		X			X		X		X					X		X		X		X		X			X			
74	BMH02	Nov 07, 2018		Water	P18-No14214		X		X			X		X		X			X		X		X		X		X					X			
75	BMH09	Nov 07, 2018		Water	P18-No14215		X		X			X		X		X			X		X		X		X		X		X			X			
76	BMH10	Nov 07, 2018		Water	P18-No14216																											X			
77	BMH11	Nov 07, 2018		Water	P18-No14217		X		X			X		X		X			X		X		X		X		X		X			X			
78	BMH12	Nov 07, 2018		Water	P18-No14218		X		X			X		X		X			X		X		X		X		X		X			X			
79	BMH06	Nov 07, 2018		Water	P18-No14219		X		X			X		X		X			X		X		X		X		X		X			X			
80	BMH08	Nov 07, 2018		Water	P18-No14220		X		X			X		X		X			X		X		X		X		X		X			X			
81	BMH01 D	Nov 07, 2018		Water	P18-No14221																														

Company Name: SLR Consulting (Qld)
Address: Level 2 15 Astor Terrace
Spring Hill
QLD 4000

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Order No.:
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Phone: 07 3858 4800
Fax:

Received: Nov 9, 2018 9:14 AM
Due: Nov 23, 2018
Priority: 10 Day
Contact Name: Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
82	BMH01 S	Nov 07, 2018		Water	P18-No14222																									X																																				
83	QC1	Nov 07, 2018		Water	P18-No14223																									X																																				
84	REF1 0.3	Nov 06, 2018		Soil	P18-No14488	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
Test Counts						73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	8	3	73	7	73	7	73	7	73	7	73	7	73	73	7	73	7	73	7	2	73	6	73	7	73	7	73	7	73	7	73	6	73	73	8	73	67	73

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
% Clay	%	< 1			1	Pass	
Chloride	mg/kg	< 5			5	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Cyanide (free)	mg/kg	< 5			5	Pass	
Sulphate (as SO4)	mg/kg	< 30			30	Pass	
Total Organic Carbon	%	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/kg	< 10			10	Pass	
Antimony	mg/kg	< 10			10	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Bismuth	mg/kg	< 10			10	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Iron	mg/kg	< 20			20	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 0.2			0.2	Pass	
Strontium	mg/kg	< 10			10	Pass	
Thallium	mg/kg	< 10			10	Pass	
Tin	mg/kg	< 10			10	Pass	
Titanium	mg/kg	< 10			10	Pass	
Uranium	mg/kg	< 10			10	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
% Clay	%	96			70-130	Pass	
Chloride	%	97			70-130	Pass	
Sulphate (as SO4)	%	82			70-130	Pass	
Total Organic Carbon	%	93			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Antimony	%	97			80-120	Pass	
Arsenic	%	95			80-120	Pass	
Barium	%	102			80-120	Pass	
Beryllium	%	96			80-120	Pass	
Boron	%	112			80-120	Pass	
Cadmium	%	96			80-120	Pass	
Chromium	%	103			80-120	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cobalt	%	103			80-120	Pass	
Copper	%	98			80-120	Pass	
Lead	%	103			80-120	Pass	
Manganese	%	102			80-120	Pass	
Mercury	%	85			75-125	Pass	
Molybdenum	%	89			80-120	Pass	
Nickel	%	97			80-120	Pass	
Selenium	%	99			80-120	Pass	
Silver	%	95			80-120	Pass	
Tin	%	98			80-120	Pass	
Vanadium	%	99			80-120	Pass	
Zinc	%	97			80-120	Pass	
LCS - % Recovery							
Chromium Suite (Minus ANC- WA)							
Chromium Reducible Sulfur	%	97			70-130	Pass	
Acid Neutralising Capacity (ANCbt)	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	P18-No14142	CP	%	112			70-130	Pass	
Arsenic	P18-No14142	CP	%	104			75-125	Pass	
Barium	P18-No14142	CP	%	95			75-125	Pass	
Beryllium	P18-No14142	CP	%	101			75-125	Pass	
Boron	P18-No14142	CP	%	94			75-125	Pass	
Cadmium	P18-No14142	CP	%	108			75-125	Pass	
Cobalt	P18-No14142	CP	%	113			75-125	Pass	
Copper	P18-No14142	CP	%	102			75-125	Pass	
Lead	P18-No14142	CP	%	102			75-125	Pass	
Manganese	P18-No14142	CP	%	129			75-125	Fail	Q08
Mercury	P18-No14142	CP	%	83			70-130	Pass	
Molybdenum	P18-No14142	CP	%	105			75-125	Pass	
Selenium	P18-No14142	CP	%	97			75-125	Pass	
Silver	P18-No14142	CP	%	103			75-125	Pass	
Tin	P18-No14142	CP	%	115			75-125	Pass	
Vanadium	P18-No14142	CP	%	102			75-125	Pass	
Zinc	P18-No14142	CP	%	111			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	P18-No14152	CP	%	109			70-130	Pass	
Arsenic	P18-No14152	CP	%	104			75-125	Pass	
Barium	P18-No14152	CP	%	93			75-125	Pass	
Beryllium	P18-No14152	CP	%	104			75-125	Pass	
Boron	P18-No14152	CP	%	94			75-125	Pass	
Cadmium	P18-No14152	CP	%	105			75-125	Pass	
Cobalt	P18-No14152	CP	%	102			75-125	Pass	
Copper	P18-No14152	CP	%	97			75-125	Pass	
Lead	P18-No14152	CP	%	97			75-125	Pass	
Manganese	P18-No14152	CP	%	36			75-125	Fail	Q08
Mercury	P18-No14152	CP	%	87			70-130	Pass	
Molybdenum	P18-No14152	CP	%	101			75-125	Pass	
Selenium	P18-No14152	CP	%	96			75-125	Pass	
Silver	P18-No14152	CP	%	102			75-125	Pass	
Tin	P18-No14152	CP	%	109			75-125	Pass	
Vanadium	P18-No14152	CP	%	116			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	P18-No14152	CP	%	98			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	P18-No14162	CP	%	111			70-130	Pass	
Arsenic	P18-No14162	CP	%	106			75-125	Pass	
Barium	P18-No14162	CP	%	144			75-125	Fail	Q08
Beryllium	P18-No14162	CP	%	95			75-125	Pass	
Boron	P18-No14162	CP	%	86			75-125	Pass	
Cadmium	P18-No14162	CP	%	105			75-125	Pass	
Cobalt	P18-No14162	CP	%	114			75-125	Pass	
Copper	P18-No14162	CP	%	109			75-125	Pass	
Lead	P18-No14162	CP	%	99			75-125	Pass	
Manganese	P18-No14162	CP	%	69			75-125	Fail	Q08
Mercury	P18-No14162	CP	%	82			70-130	Pass	
Molybdenum	P18-No14162	CP	%	101			75-125	Pass	
Nickel	P18-No14162	CP	%	148			75-125	Fail	Q08
Selenium	P18-No14162	CP	%	94			75-125	Pass	
Silver	P18-No14162	CP	%	100			75-125	Pass	
Tin	P18-No14162	CP	%	109			75-125	Pass	
Vanadium	P18-No14162	CP	%	138			75-125	Fail	Q08
Zinc	P18-No14162	CP	%	107			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	P18-No14172	CP	%	108			70-130	Pass	
Arsenic	P18-No14172	CP	%	108			75-125	Pass	
Barium	P18-No14172	CP	%	103			75-125	Pass	
Beryllium	P18-No14172	CP	%	120			75-125	Pass	
Boron	P18-No14172	CP	%	117			75-125	Pass	
Cadmium	P18-No14172	CP	%	107			75-125	Pass	
Chromium	P18-No14172	CP	%	165			75-125	Fail	Q08
Cobalt	P18-No14172	CP	%	106			75-125	Pass	
Copper	P18-No14172	CP	%	106			75-125	Pass	
Lead	P18-No14172	CP	%	96			75-125	Pass	
Manganese	P18-No14172	CP	%	38			75-125	Fail	Q08
Mercury	P18-No14172	CP	%	82			70-130	Pass	
Molybdenum	P18-No14172	CP	%	102			75-125	Pass	
Nickel	P18-No14172	CP	%	116			75-125	Pass	
Selenium	P18-No14172	CP	%	98			75-125	Pass	
Silver	P18-No14172	CP	%	103			75-125	Pass	
Tin	P18-No14172	CP	%	108			75-125	Pass	
Vanadium	P18-No14172	CP	%	117			75-125	Pass	
Zinc	P18-No14172	CP	%	113			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	P18-No14192	CP	%	104			70-130	Pass	
Arsenic	P18-No14192	CP	%	102			75-125	Pass	
Barium	P18-No14192	CP	%	105			75-125	Pass	
Beryllium	P18-No14192	CP	%	93			75-125	Pass	
Boron	P18-No14192	CP	%	104			75-125	Pass	
Cadmium	P18-No14192	CP	%	101			75-125	Pass	
Cobalt	P18-No14192	CP	%	97			75-125	Pass	
Copper	P18-No14192	CP	%	62			75-125	Fail	Q08
Lead	P18-No14192	CP	%	100			75-125	Pass	
Mercury	P18-No14192	CP	%	88			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Molybdenum	P18-No14192	CP	%	100			75-125	Pass	
Nickel	P18-No14192	CP	%	188			75-125	Fail	Q08
Selenium	P18-No14192	CP	%	92			75-125	Pass	
Silver	P18-No14192	CP	%	98			75-125	Pass	
Tin	P18-No14192	CP	%	106			75-125	Pass	
Vanadium	P18-No14192	CP	%	109			75-125	Pass	
Zinc	P18-No14192	CP	%	83			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	P18-No14202	CP	%	108			70-130	Pass	
Arsenic	P18-No14202	CP	%	101			75-125	Pass	
Barium	P18-No14202	CP	%	107			75-125	Pass	
Beryllium	P18-No14202	CP	%	110			75-125	Pass	
Boron	P18-No14202	CP	%	124			75-125	Pass	
Cadmium	P18-No14202	CP	%	106			75-125	Pass	
Chromium	P18-No14202	CP	%	77			75-125	Pass	
Cobalt	P18-No14202	CP	%	100			75-125	Pass	
Copper	P18-No14202	CP	%	108			75-125	Pass	
Lead	P18-No14202	CP	%	100			75-125	Pass	
Molybdenum	P18-No14202	CP	%	101			75-125	Pass	
Nickel	P18-No14202	CP	%	73			75-125	Fail	Q08
Selenium	P18-No14202	CP	%	98			75-125	Pass	
Silver	P18-No14202	CP	%	104			75-125	Pass	
Tin	P18-No14202	CP	%	108			75-125	Pass	
Vanadium	P18-No14202	CP	%	102			75-125	Pass	
Zinc	P18-No14202	CP	%	107			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S18-No15270	NCP	%	27	30	14	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14141	CP	mg/kg	11000	10000	12	30%	Pass	
Antimony	P18-No14141	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14141	CP	mg/kg	8.3	8.3	<1	30%	Pass	
Barium	P18-No14141	CP	mg/kg	52	46	12	30%	Pass	
Beryllium	P18-No14141	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14141	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14141	CP	mg/kg	37	37	1.0	30%	Pass	
Cadmium	P18-No14141	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14141	CP	mg/kg	330	410	20	30%	Pass	
Cobalt	P18-No14141	CP	mg/kg	20	21	4.0	30%	Pass	
Copper	P18-No14141	CP	mg/kg	30	28	7.0	30%	Pass	
Iron	P18-No14141	CP	mg/kg	43000	45000	4.0	30%	Pass	
Lead	P18-No14141	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Manganese	P18-No14141	CP	mg/kg	430	460	7.0	30%	Pass	
Mercury	P18-No14141	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14141	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14141	CP	mg/kg	180	190	2.0	30%	Pass	
Selenium	P18-No14141	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14141	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14141	CP	mg/kg	60	56	8.0	30%	Pass	
Thallium	P18-No14141	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14141	CP	mg/kg	< 10	< 10	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Titanium	P18-No14141	CP	mg/kg	160	150	8.0	30%	Pass	
Uranium	P18-No14141	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14141	CP	mg/kg	64	66	3.0	30%	Pass	
Zinc	P18-No14141	CP	mg/kg	44	41	7.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	P18-No14141	CP	%	4.3	4.5	4.0	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	P18-No14141	CP	pH Units	8.2	8.2	pass	30%	Pass	
Reaction Ratings*	P18-No14141	CP	comment	4.0	4.0	pass	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Nitrate (as N)	P18-No14142	CP	mg/kg	270	260	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14142	CP	mg/kg	16000	16000	2.0	30%	Pass	
Antimony	P18-No14142	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14142	CP	mg/kg	11	11	<1	30%	Pass	
Barium	P18-No14142	CP	mg/kg	61	61	1.0	30%	Pass	
Beryllium	P18-No14142	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14142	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14142	CP	mg/kg	35	37	5.0	30%	Pass	
Cadmium	P18-No14142	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14142	CP	mg/kg	600	630	4.0	30%	Pass	
Cobalt	P18-No14142	CP	mg/kg	18	18	<1	30%	Pass	
Copper	P18-No14142	CP	mg/kg	26	26	2.0	30%	Pass	
Iron	P18-No14142	CP	mg/kg	48000	49000	3.0	30%	Pass	
Lead	P18-No14142	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Manganese	P18-No14142	CP	mg/kg	320	320	1.0	30%	Pass	
Mercury	P18-No14142	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14142	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14142	CP	mg/kg	170	170	2.0	30%	Pass	
Selenium	P18-No14142	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14142	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14142	CP	mg/kg	36	36	1.0	30%	Pass	
Thallium	P18-No14142	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14142	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14142	CP	mg/kg	140	140	1.0	30%	Pass	
Uranium	P18-No14142	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14142	CP	mg/kg	75	74	<1	30%	Pass	
Zinc	P18-No14142	CP	mg/kg	36	36	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	P18-No14142	CP	%	4.8	4.9	3.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Clay	P18-No14144	CP	%	6.3	6.3	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	P18-No14147	CP	mg/kg	16000	15000	10	30%	Pass	
Sulphate (as SO4)	P18-No14147	CP	mg/kg	15000	14000	6.5	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Organic Carbon	P18-No14148	CP	%	0.4	0.3	25	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	P18-No14149	CP	uS/cm	9800	9200	5.4	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	P18-No14149	CP	pH Units	8.3	8.3	pass	30%	Pass	
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	P18-No14149	CP	pH Units	8.3	8.2	pass	30%	Pass	
Duplicate									
Chromium Suite (Minus ANC- WA)				Result 1	Result 2	RPD			
CRS suite WA (-ANC) - Liming Rate	P18-No14149	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	P18-No14149	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	P18-No14149	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
pH-KCL	P18-No14149	CP	pH Units	8.7	8.7	<1	30%	Pass	
Acid trail - Titratable Actual Acidity	P18-No14149	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
sulfidic - TAA equiv. S% pyrite	P18-No14149	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Chromium Reducible Sulfur	P18-No14149	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
Chromium Reducible Sulfur -acidity units	P18-No14149	CP	mol H+/t	< 3	< 3	<1	30%	Pass	
Sulfur - KCl Extractable	P18-No14149	CP	% S	n/a	n/a	n/a	30%	Pass	
HCl Extractable Sulfur	P18-No14149	CP	% S	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur	P18-No14149	CP	% S	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur - acidity units	P18-No14149	CP	mol H+/t	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur - equivalent S% pyrite	P18-No14149	CP	% S	n/a	n/a	n/a	30%	Pass	
Acid Neutralising Capacity (ANCbt)	P18-No14149	CP	%CaCO3	3.6	3.5	2.0	30%	Pass	
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)	P18-No14149	CP	% S	1.2	1.1	2.0	30%	Pass	
ANC Fineness Factor	P18-No14149	CP	factor	1.5	1.5	<1	30%	Pass	
CRS Suite - Net Acidity (Sulfur Units)	P18-No14149	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
CRS Suite - Net Acidity (Acidity Units)	P18-No14149	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite - Liming Rate	P18-No14149	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14151	CP	mg/kg	12000	12000	1.0	30%	Pass	
Antimony	P18-No14151	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14151	CP	mg/kg	40	39	3.0	30%	Pass	
Barium	P18-No14151	CP	mg/kg	71	70	1.0	30%	Pass	
Beryllium	P18-No14151	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14151	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14151	CP	mg/kg	17	17	3.0	30%	Pass	
Cadmium	P18-No14151	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14151	CP	mg/kg	3900	3500	10	30%	Pass	
Cobalt	P18-No14151	CP	mg/kg	48	43	11	30%	Pass	
Copper	P18-No14151	CP	mg/kg	24	26	11	30%	Pass	
Iron	P18-No14151	CP	mg/kg	160000	170000	1.0	30%	Pass	
Lead	P18-No14151	CP	mg/kg	8.0	7.2	10	30%	Pass	
Manganese	P18-No14151	CP	mg/kg	520	470	9.0	30%	Pass	
Mercury	P18-No14151	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14151	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14151	CP	mg/kg	910	940	4.0	30%	Pass	
Selenium	P18-No14151	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14151	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14151	CP	mg/kg	35	32	10	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Thallium	P18-No14151	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14151	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14151	CP	mg/kg	480	440	8.0	30%	Pass	
Uranium	P18-No14151	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14151	CP	mg/kg	160	160	3.0	30%	Pass	
Zinc	P18-No14151	CP	mg/kg	29	28	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	P18-No14151	CP	%	16	17	1.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	P18-No14151	CP	mg/kg	5000	4600	8.0	30%	Pass	
Magnesium	P18-No14151	CP	mg/kg	6800	7400	8.0	30%	Pass	
Sodium	P18-No14151	CP	mg/kg	1400	1700	20	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	P18-No14151	CP	pH Units	7.8	7.9	pass	30%	Pass	
Reaction Ratings*	P18-No14151	CP	comment	4.0	4.0	pass	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14152	CP	mg/kg	18000	18000	2.0	30%	Pass	
Antimony	P18-No14152	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14152	CP	mg/kg	25	25	<1	30%	Pass	
Barium	P18-No14152	CP	mg/kg	72	71	1.0	30%	Pass	
Beryllium	P18-No14152	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14152	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14152	CP	mg/kg	19	16	17	30%	Pass	
Cadmium	P18-No14152	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14152	CP	mg/kg	1300	1400	13	30%	Pass	
Cobalt	P18-No14152	CP	mg/kg	63	65	3.0	30%	Pass	
Copper	P18-No14152	CP	mg/kg	32	33	1.0	30%	Pass	
Iron	P18-No14152	CP	mg/kg	70000	80000	14	30%	Pass	
Lead	P18-No14152	CP	mg/kg	6.5	6.5	1.0	30%	Pass	
Manganese	P18-No14152	CP	mg/kg	700	720	3.0	30%	Pass	
Mercury	P18-No14152	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14152	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14152	CP	mg/kg	870	1000	14	30%	Pass	
Selenium	P18-No14152	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14152	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14152	CP	mg/kg	30	30	1.0	30%	Pass	
Thallium	P18-No14152	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14152	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14152	CP	mg/kg	290	300	4.0	30%	Pass	
Uranium	P18-No14152	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14152	CP	mg/kg	96	99	3.0	30%	Pass	
Zinc	P18-No14152	CP	mg/kg	40	40	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	P18-No14152	CP	%	7.0	8.0	14	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	P18-No14157	CP	mg/kg	21000	20000	7.0	30%	Pass	
Sulphate (as SO4)	P18-No14157	CP	mg/kg	5100	4600	8.5	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Total Organic Carbon	P18-No14160	CP	%	0.7	0.7	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14161	CP	mg/kg	25000	24000	4.0	30%	Pass	
Antimony	P18-No14161	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14161	CP	mg/kg	8.0	8.4	5.0	30%	Pass	
Barium	P18-No14161	CP	mg/kg	230	220	5.0	30%	Pass	
Beryllium	P18-No14161	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14161	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14161	CP	mg/kg	38	37	3.0	30%	Pass	
Cadmium	P18-No14161	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14161	CP	mg/kg	350	360	3.0	30%	Pass	
Cobalt	P18-No14161	CP	mg/kg	33	33	1.0	30%	Pass	
Copper	P18-No14161	CP	mg/kg	76	69	10	30%	Pass	
Iron	P18-No14161	CP	mg/kg	34000	36000	5.0	30%	Pass	
Lead	P18-No14161	CP	mg/kg	9.5	9.4	2.0	30%	Pass	
Manganese	P18-No14161	CP	mg/kg	1700	1500	16	30%	Pass	
Mercury	P18-No14161	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14161	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14161	CP	mg/kg	430	430	1.0	30%	Pass	
Selenium	P18-No14161	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14161	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14161	CP	mg/kg	30	32	8.0	30%	Pass	
Thallium	P18-No14161	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14161	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14161	CP	mg/kg	120	110	7.0	30%	Pass	
Uranium	P18-No14161	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14161	CP	mg/kg	63	67	5.0	30%	Pass	
Zinc	P18-No14161	CP	mg/kg	61	63	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	P18-No14161	CP	%	3.4	3.6	5.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	P18-No14161	CP	mg/kg	2200	2200	4.0	30%	Pass	
Magnesium	P18-No14161	CP	mg/kg	50000	50000	1.0	30%	Pass	
Potassium	P18-No14161	CP	mg/kg	4900	4800	2.0	30%	Pass	
Sodium	P18-No14161	CP	mg/kg	3500	4600	27	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	P18-No14161	CP	pH Units	7.0	7.0	pass	30%	Pass	
Reaction Ratings*	P18-No14161	CP	comment	4.0	4.0	pass	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14162	CP	mg/kg	9300	9300	<1	30%	Pass	
Antimony	P18-No14162	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14162	CP	mg/kg	11	11	1.0	30%	Pass	
Barium	P18-No14162	CP	mg/kg	110	110	2.0	30%	Pass	
Beryllium	P18-No14162	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14162	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14162	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	P18-No14162	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14162	CP	mg/kg	1100	1100	2.0	30%	Pass	
Cobalt	P18-No14162	CP	mg/kg	27	27	3.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Copper	P18-No14162	CP	mg/kg	26	27	2.0	30%	Pass	
Iron	P18-No14162	CP	mg/kg	69000	69000	<1	30%	Pass	
Lead	P18-No14162	CP	mg/kg	6.5	6.5	<1	30%	Pass	
Manganese	P18-No14162	CP	mg/kg	580	580	1.0	30%	Pass	
Mercury	P18-No14162	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14162	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14162	CP	mg/kg	300	300	<1	30%	Pass	
Selenium	P18-No14162	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14162	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14162	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Thallium	P18-No14162	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14162	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14162	CP	mg/kg	160	170	3.0	30%	Pass	
Uranium	P18-No14162	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14162	CP	mg/kg	95	97	2.0	30%	Pass	
Zinc	P18-No14162	CP	mg/kg	29	30	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	P18-No14162	CP	%	6.9	6.9	<1	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	P18-No14162	CP	pH Units	7.0	7.1	pass	30%	Pass	
Reaction Ratings*	P18-No14162	CP	comment	4.0	4.0	pass	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	P18-No14167	CP	mg/kg	11000	10000	1.8	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	P18-No14168	CP	mg/kg	7500	7900	6.3	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Potassium	P18-No14171	CP	mg/kg	660	810	20	30%	Pass	
Sodium	P18-No14171	CP	mg/kg	16000	21000	30	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14172	CP	mg/kg	7000	6900	2.0	30%	Pass	
Antimony	P18-No14172	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14172	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Barium	P18-No14172	CP	mg/kg	11	11	2.0	30%	Pass	
Beryllium	P18-No14172	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14172	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14172	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	P18-No14172	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14172	CP	mg/kg	30	31	3.0	30%	Pass	
Cobalt	P18-No14172	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	P18-No14172	CP	mg/kg	9.2	9.6	5.0	30%	Pass	
Iron	P18-No14172	CP	mg/kg	18000	19000	4.0	30%	Pass	
Lead	P18-No14172	CP	mg/kg	7.6	7.8	3.0	30%	Pass	
Manganese	P18-No14172	CP	mg/kg	130	140	4.0	30%	Pass	
Mercury	P18-No14172	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14172	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14172	CP	mg/kg	22	23	2.0	30%	Pass	
Selenium	P18-No14172	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14172	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Strontium	P18-No14172	CP	mg/kg	47	48	2.0	30%	Pass	
Thallium	P18-No14172	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14172	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14172	CP	mg/kg	14	18	20	30%	Pass	
Uranium	P18-No14172	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14172	CP	mg/kg	18	19	3.0	30%	Pass	
Zinc	P18-No14172	CP	mg/kg	50	52	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	P18-No14172	CP	%	1.8	1.9	4.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Sulphur	M18-No18483	NCP	mg/kg	550	610	11	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	P18-No14173	CP	pH Units	7.4	7.4	pass	30%	Pass	
Reaction Ratings*	P18-No14173	CP	comment	4.0	4.0	pass	30%	Pass	
Duplicate									
Chromium Suite (Minus ANC- WA)				Result 1	Result 2	RPD			
CRS suite WA (-ANC) - Liming Rate	P18-No14180	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	P18-No14180	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	P18-No14180	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
pH-KCL	P18-No14180	CP	pH Units	8.0	8.0	<1	30%	Pass	
Acid trail - Titratable Actual Acidity	P18-No14180	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
sulfidic - TAA equiv. S% pyrite	P18-No14180	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Chromium Reducible Sulfur	P18-No14180	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
Chromium Reducible Sulfur -acidity units	P18-No14180	CP	mol H+/t	< 3	< 3	<1	30%	Pass	
Sulfur - KCl Extractable	P18-No14180	CP	% S	n/a	n/a	n/a	30%	Pass	
HCl Extractable Sulfur	P18-No14180	CP	% S	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur	P18-No14180	CP	% S	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur - acidity units	P18-No14180	CP	mol H+/t	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur - equivalent S% pyrite	P18-No14180	CP	% S	n/a	n/a	n/a	30%	Pass	
Acid Neutralising Capacity (ANCbt)	P18-No14180	CP	%CaCO3	1.2	1.3	5.0	30%	Pass	
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)	P18-No14180	CP	% S	0.38	0.40	5.0	30%	Pass	
ANC Fineness Factor	P18-No14180	CP	factor	1.5	1.5	<1	30%	Pass	
CRS Suite - Net Acidity (Sulfur Units)	P18-No14180	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
CRS Suite - Net Acidity (Acidity Units)	P18-No14180	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite - Liming Rate	P18-No14180	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Bismuth	P18-No14181	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Uranium	P18-No14181	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	P18-No14181	CP	mg/kg	16000	22000	29	30%	Pass	
Magnesium	P18-No14181	CP	mg/kg	9800	9500	3.0	30%	Pass	
Potassium	P18-No14181	CP	mg/kg	1100	880	21	30%	Pass	
Sodium	P18-No14181	CP	mg/kg	18000	18000	4.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14182	CP	mg/kg	13000	14000	2.0	30%	Pass	
Antimony	P18-No14182	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14182	CP	mg/kg	11	11	3.0	30%	Pass	
Barium	P18-No14182	CP	mg/kg	61	63	3.0	30%	Pass	
Beryllium	P18-No14182	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14182	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14182	CP	mg/kg	20	20		30%	Pass	
Cadmium	P18-No14182	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14182	CP	mg/kg	710	700	1.0	30%	Pass	
Cobalt	P18-No14182	CP	mg/kg	38	39	3.0	30%	Pass	
Copper	P18-No14182	CP	mg/kg	36	36	2.0	30%	Pass	
Iron	P18-No14182	CP	mg/kg	45000	46000	2.0	30%	Pass	
Lead	P18-No14182	CP	mg/kg	5.6	5.7	2.0	30%	Pass	
Manganese	P18-No14182	CP	mg/kg	680	700	3.0	30%	Pass	
Mercury	P18-No14182	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14182	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14182	CP	mg/kg	460	470	3.0	30%	Pass	
Selenium	P18-No14182	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14182	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14182	CP	mg/kg	36	33	9.0	30%	Pass	
Thallium	P18-No14182	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14182	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14182	CP	mg/kg	250	250	2.0	30%	Pass	
Uranium	P18-No14182	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14182	CP	mg/kg	64	67	4.0	30%	Pass	
Zinc	P18-No14182	CP	mg/kg	61	63	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	P18-No14182	CP	%	4.5	4.6	2.0	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	P18-No14185	CP	pH Units	7.3	7.2	pass	30%	Pass	
Reaction Ratings*	P18-No14185	CP	comment	4.0	4.0	pass	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Clay	P18-No14186	CP	%	5.0	5.0	<1	30%	Pass	
Total Organic Carbon	P18-No14186	CP	%	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	P18-No14187	CP	mg/kg	20000	18000	12	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	P18-No14187	CP	pH Units	8.0	8.0	pass	30%	Pass	
Reaction Ratings*	P18-No14187	CP	comment	4.0	4.0	pass	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	P18-No14188	CP	mg/kg	18000	19000	5.0	30%	Pass	
Sulphate (as SO4)	P18-No14188	CP	mg/kg	4500	5000	11	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	P18-No14189	CP	uS/cm	12000	13000	7.0	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	P18-No14189	CP	pH Units	7.8	7.7	pass	30%	Pass	
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	P18-No14189	CP	pH Units	7.7	7.7	pass	30%	Pass	

Duplicate									
Chromium Suite (Minus ANC- WA)				Result 1	Result 2	RPD			
CRS suite WA (-ANC) - Liming Rate	P18-No14190	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	P18-No14190	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	P18-No14190	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
pH-KCL	P18-No14190	CP	pH Units	8.3	8.3	<1	30%	Pass	
Acid trail - Titratable Actual Acidity	P18-No14190	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
sulfidic - TAA equiv. S% pyrite	P18-No14190	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Chromium Reducible Sulfur	P18-No14190	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
Chromium Reducible Sulfur -acidity units	P18-No14190	CP	mol H+/t	< 3	< 3	<1	30%	Pass	
Sulfur - KCl Extractable	P18-No14190	CP	% S	n/a	n/a	n/a	30%	Pass	
HCl Extractable Sulfur	P18-No14190	CP	% S	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur	P18-No14190	CP	% S	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur - acidity units	P18-No14190	CP	mol H+/t	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur - equivalent S% pyrite	P18-No14190	CP	% S	n/a	n/a	n/a	30%	Pass	
Acid Neutralising Capacity (ANCbt)	P18-No14190	CP	%CaCO3	0.15	0.18	16	30%	Pass	
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)	P18-No14190	CP	% S	0.05	0.06	16	30%	Pass	
ANC Fineness Factor	P18-No14190	CP	factor	1.5	1.5	<1	30%	Pass	
CRS Suite - Net Acidity (Sulfur Units)	P18-No14190	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
CRS Suite - Net Acidity (Acidity Units)	P18-No14190	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite - Liming Rate	P18-No14190	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14191	CP	mg/kg	15000	14000	1.0	30%	Pass	
Antimony	P18-No14191	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14191	CP	mg/kg	11	12	6.0	30%	Pass	
Barium	P18-No14191	CP	mg/kg	140	170	16	30%	Pass	
Beryllium	P18-No14191	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14191	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14191	CP	mg/kg	32	38	15	30%	Pass	
Cadmium	P18-No14191	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14191	CP	mg/kg	540	540	1.0	30%	Pass	
Cobalt	P18-No14191	CP	mg/kg	40	48	18	30%	Pass	
Copper	P18-No14191	CP	mg/kg	44	45	2.0	30%	Pass	
Iron	P18-No14191	CP	mg/kg	44000	53000	19	30%	Pass	
Lead	P18-No14191	CP	mg/kg	5.4	5.1	5.0	30%	Pass	
Manganese	P18-No14191	CP	mg/kg	590	630	6.0	30%	Pass	
Mercury	P18-No14191	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14191	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14191	CP	mg/kg	490	450	8.0	30%	Pass	
Selenium	P18-No14191	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14191	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14191	CP	mg/kg	44	47	8.0	30%	Pass	
Thallium	P18-No14191	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14191	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14191	CP	mg/kg	160	170	8.0	30%	Pass	
Uranium	P18-No14191	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14191	CP	mg/kg	69	80	15	30%	Pass	
Zinc	P18-No14191	CP	mg/kg	43	42	1.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	P18-No14191	CP	%	4.4	5.3	19	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14192	CP	mg/kg	9500	10000	5.0	30%	Pass	
Antimony	P18-No14192	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14192	CP	mg/kg	16	17	4.0	30%	Pass	
Barium	P18-No14192	CP	mg/kg	55	57	3.0	30%	Pass	
Beryllium	P18-No14192	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14192	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14192	CP	mg/kg	40	43	5.0	30%	Pass	
Cadmium	P18-No14192	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14192	CP	mg/kg	1000	1000	1.0	30%	Pass	
Cobalt	P18-No14192	CP	mg/kg	36	38	4.0	30%	Pass	
Copper	P18-No14192	CP	mg/kg	47	50	6.0	30%	Pass	
Iron	P18-No14192	CP	mg/kg	88000	87000	1.0	30%	Pass	
Lead	P18-No14192	CP	mg/kg	8.6	9.0	5.0	30%	Pass	
Manganese	P18-No14192	CP	mg/kg	460	480	4.0	30%	Pass	
Mercury	P18-No14192	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14192	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14192	CP	mg/kg	310	320	2.0	30%	Pass	
Selenium	P18-No14192	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14192	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14192	CP	mg/kg	44	45	3.0	30%	Pass	
Thallium	P18-No14192	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14192	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14192	CP	mg/kg	250	270	7.0	30%	Pass	
Uranium	P18-No14192	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14192	CP	mg/kg	110	120	5.0	30%	Pass	
Zinc	P18-No14192	CP	mg/kg	42	46	8.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Clay	P18-No14194	CP	%	10	8.8	13	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Nitrate (as N)	P18-No14196	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	P18-No14199	CP	uS/cm	12000	11000	7.8	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	P18-No14199	CP	pH Units	7.6	7.5	pass	30%	Pass	
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	P18-No14199	CP	pH Units	7.5	7.5	pass	30%	Pass	
Total Organic Carbon	P18-No14199	CP	%	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	P18-No14200	CP	pH Units	6.7	6.8	pass	30%	Pass	
Reaction Ratings*	P18-No14200	CP	comment	4.0	4.0	pass	30%	Pass	

Duplicate									
Chromium Suite (Minus ANC- WA)				Result 1	Result 2	RPD			
CRS suite WA (-ANC) - Liming Rate	P18-No14200	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	P18-No14200	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	P18-No14200	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
pH-KCL	P18-No14200	CP	pH Units	6.5	6.5	<1	30%	Pass	
Acid trail - Titratable Actual Acidity	P18-No14200	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
sulfidic - TAA equiv. S% pyrite	P18-No14200	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Chromium Reducible Sulfur	P18-No14200	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
Chromium Reducible Sulfur -acidity units	P18-No14200	CP	mol H+/t	< 3	< 3	<1	30%	Pass	
Sulfur - KCl Extractable	P18-No14200	CP	% S	n/a	n/a	n/a	30%	Pass	
HCl Extractable Sulfur	P18-No14200	CP	% S	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur	P18-No14200	CP	% S	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur - acidity units	P18-No14200	CP	mol H+/t	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur - equivalent S% pyrite	P18-No14200	CP	% S	n/a	n/a	n/a	30%	Pass	
Acid Neutralising Capacity (ANCbt)	P18-No14200	CP	%CaCO3	0.10	0.11	15	30%	Pass	
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)	P18-No14200	CP	% S	0.03	0.04	15	30%	Pass	
ANC Fineness Factor	P18-No14200	CP	factor	1.5	1.5	<1	30%	Pass	
CRS Suite - Net Acidity (Sulfur Units)	P18-No14200	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
CRS Suite - Net Acidity (Acidity Units)	P18-No14200	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite - Liming Rate	P18-No14200	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14201	CP	mg/kg	9600	10000	4.0	30%	Pass	
Antimony	P18-No14201	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14201	CP	mg/kg	35	36	4.0	30%	Pass	
Barium	P18-No14201	CP	mg/kg	22	23	6.0	30%	Pass	
Beryllium	P18-No14201	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14201	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14201	CP	mg/kg	32	36	10	30%	Pass	
Cadmium	P18-No14201	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Cobalt	P18-No14201	CP	mg/kg	61	67	9.0	30%	Pass	
Copper	P18-No14201	CP	mg/kg	11	12	11	30%	Pass	
Lead	P18-No14201	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Manganese	P18-No14201	CP	mg/kg	520	500	3.0	30%	Pass	
Mercury	P18-No14201	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14201	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Selenium	P18-No14201	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14201	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14201	CP	mg/kg	49	55	12	30%	Pass	
Thallium	P18-No14201	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14201	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14201	CP	mg/kg	450	480	5.0	30%	Pass	
Uranium	P18-No14201	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14201	CP	mg/kg	32	34	6.0	30%	Pass	
Zinc	P18-No14201	CP	mg/kg	17	18	10	30%	Pass	

Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	P18-No14201	CP	mg/kg	35000	40000	15	30%	Pass	
Magnesium	P18-No14201	CP	mg/kg	6200	6400	2.0	30%	Pass	
Potassium	P18-No14201	CP	mg/kg	520	570	10	30%	Pass	
Sodium	P18-No14201	CP	mg/kg	25000	27000	8.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	P18-No14202	CP	mg/kg	14000	15000	4.0	30%	Pass	
Antimony	P18-No14202	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	P18-No14202	CP	mg/kg	5.6	5.6	<1	30%	Pass	
Barium	P18-No14202	CP	mg/kg	40	41	2.0	30%	Pass	
Beryllium	P18-No14202	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	P18-No14202	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	P18-No14202	CP	mg/kg	22	22	<1	30%	Pass	
Cadmium	P18-No14202	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	P18-No14202	CP	mg/kg	310	310	1.0	30%	Pass	
Cobalt	P18-No14202	CP	mg/kg	32	33	3.0	30%	Pass	
Copper	P18-No14202	CP	mg/kg	32	32	2.0	30%	Pass	
Iron	P18-No14202	CP	mg/kg	46000	46000	1.0	30%	Pass	
Lead	P18-No14202	CP	mg/kg	5.5	5.4	1.0	30%	Pass	
Manganese	P18-No14202	CP	mg/kg	780	810	5.0	30%	Pass	
Mercury	P18-No14202	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	P18-No14202	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	P18-No14202	CP	mg/kg	220	220	1.0	30%	Pass	
Selenium	P18-No14202	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	P18-No14202	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Strontium	P18-No14202	CP	mg/kg	41	42	2.0	30%	Pass	
Thallium	P18-No14202	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	P18-No14202	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Titanium	P18-No14202	CP	mg/kg	150	150	3.0	30%	Pass	
Uranium	P18-No14202	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Vanadium	P18-No14202	CP	mg/kg	51	53	3.0	30%	Pass	
Zinc	P18-No14202	CP	mg/kg	69	73	6.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	P18-No14202	CP	%	4.6	4.6	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	P18-No14207	CP	mg/kg	7400	7700	4.8	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	P18-No14208	CP	mg/kg	13000	14000	5.5	30%	Pass	
Sulphate (as SO4)	P18-No14208	CP	mg/kg	8000	9200	14	30%	Pass	
Total Organic Carbon	P18-No14208	CP	%	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	P18-No14210	CP	pH Units	8.5	8.7	pass	30%	Pass	
Reaction Ratings*	P18-No14210	CP	comment	4.0	4.0	pass	30%	Pass	

Duplicate									
Chromium Suite (Minus ANC- WA)				Result 1	Result 2	RPD			
CRS suite WA (-ANC) - Liming Rate	P18-No14210	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
CRS suite WA (-ANC) - Net Acidity (Acidity Units)	P18-No14210	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite WA (-ANC) - Net Acidity (Sulfur Units)	P18-No14210	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
pH-KCL	P18-No14210	CP	pH Units	9.0	9.0	<1	30%	Pass	
Acid trail - Titratable Actual Acidity	P18-No14210	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
sulfidic - TAA equiv. S% pyrite	P18-No14210	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Chromium Reducible Sulfur	P18-No14210	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
Chromium Reducible Sulfur -acidity units	P18-No14210	CP	mol H+/t	< 3	< 3	<1	30%	Pass	
Sulfur - KCl Extractable	P18-No14210	CP	% S	n/a	n/a	n/a	30%	Pass	
HCl Extractable Sulfur	P18-No14210	CP	% S	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur	P18-No14210	CP	% S	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur - acidity units	P18-No14210	CP	mol H+/t	n/a	n/a	n/a	30%	Pass	
Net Acid soluble sulfur - equivalent S% pyrite	P18-No14210	CP	% S	n/a	n/a	n/a	30%	Pass	
Acid Neutralising Capacity (ANCbt)	P18-No14210	CP	%CaCO3	7.5	7.3	2.0	30%	Pass	
Acid Neutralising Capacity - equivalent S% pyrite (s-ANCbt)	P18-No14210	CP	% S	2.4	2.4	2.0	30%	Pass	
ANC Fineness Factor	P18-No14210	CP	factor	1.5	1.5	<1	30%	Pass	
CRS Suite - Net Acidity (Sulfur Units)	P18-No14210	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
CRS Suite - Net Acidity (Acidity Units)	P18-No14210	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite - Liming Rate	P18-No14210	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	

Comments

Eurofins | mgt accreditation number 1261, corporate site 1254 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
S01	Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil' multiply 'reported results' x 'wet bulk density of soil in t/m3'
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5
S03	Acid Neutralising Capacity is only required if the pHKCl if greater than or equal to pH 6.5
S04	Acid Sulfate Soil Samples have a 24 hour holding time unless frozen or dried within that period
S05	Field Screen uses the following fizz rating to classify the rate the samples reacted to the peroxide: 1.0; No reaction to slight. 2.0; Moderate reaction. 3.0; Strong reaction with persistent froth. 4.0; Extreme reaction.

Authorised By

Ryan Gilbert	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Julie Kay	Senior Analyst-Inorganic (VIC)
Myles Clark	Senior Analyst-SPOCAS (QLD)

Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

SLR CONSULTING
Level 2 15 Astor Terrace
Spring Hill
QLD 4000

NATA Accredited
Accreditation Number 1261
Site Number 23736

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Ruairi Hanley**

Report **627226-W**
Project name BYLONG
Project ID 67511369
Received Date Nov 09, 2018

Client Sample ID			[G01]**BMH04**	[G01]**BMH02**	[G01]**BMH09**	**BMH10**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**P18-No14213**	**P18-No14214**	**P18-No14215**	**P18-No14216**
Date Sampled			**Nov 07, 2018**	**Nov 07, 2018**	**Nov 07, 2018**	**Nov 07, 2018**
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	< 0.01	1700	3100	840
Cyanide (total)	0.005	mg/L	< 0.005	0.10	0.056	0.025
Nitrate & Nitrite (as N)	0.05	mg/L	18	19	1.2	7.5
Nitrate (as N)	0.02	mg/L	18	18	1.2	7.5
Nitrite (as N)	0.02	mg/L	< 0.02	0.30	< 0.02	< 0.02
Organic Nitrogen (as N)	0.2	mg/L	2.7	[G01]< 1	[G01]< 1	[G01]< 1
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.7	1700	3100	840
Total Nitrogen (as N)	0.2	mg/L	21	1720	3100	850
Heavy Metals						
Aluminium (filtered)	0.05	mg/L	< 0.25	< 0.05	< 0.05	-
Antimony (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	-
Arsenic (filtered)	0.001	mg/L	< 0.005	< 0.005	< 0.005	-
Barium (filtered)	0.02	mg/L	< 0.025	< 0.025	< 0.025	-
Beryllium (filtered)	0.001	mg/L	< 0.005	< 0.005	< 0.005	-
Bismuth (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	-
Boron (filtered)	0.05	mg/L	1.2	6.9	9.0	-
Cadmium (filtered)	0.0002	mg/L	0.0029	0.0045	0.0035	-
Chromium (filtered)	0.001	mg/L	0.020	0.002	< 0.005	-
Cobalt (filtered)	0.001	mg/L	< 0.005	< 0.005	0.014	-
Copper (filtered)	0.001	mg/L	< 0.005	< 0.005	< 0.005	-
Lead (filtered)	0.001	mg/L	0.012	< 0.005	< 0.005	-
Manganese (filtered)	0.005	mg/L	0.036	1.2	39	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Molybdenum (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	-
Nickel (filtered)	0.001	mg/L	0.047	0.15	1.6	-
Selenium (filtered)	0.001	mg/L	< 0.005	0.005	< 0.005	-
Silver (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	-
Strontium (filtered)	0.005	mg/L	10	11	11	-
Thallium (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	-
Tin (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	-
Titanium (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	-
Uranium (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	-
Vanadium (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	-
Zinc (filtered)	0.005	mg/L	0.17	0.079	0.34	-

Client Sample ID			[G01]BMH11	[G01]BMH12	[G01]BMH06	[G01]BMH08
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**P18-No14217**	**P18-No14218**	**P18-No14219**	**P18-No14220**
Date Sampled			**Nov 07, 2018**	**Nov 07, 2018**	**Nov 07, 2018**	**Nov 07, 2018**
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	650	420	14000	0.21
Cyanide (total)	0.005	mg/L	0.009	0.087	< 0.005	< 0.005
Nitrate & Nitrite (as N)	0.05	mg/L	8.1	30	20	14
Nitrate (as N)	0.02	mg/L	7.8	30	20	14
Nitrite (as N)	0.02	mg/L	0.29	0.31	< 0.02	< 0.02
Organic Nitrogen (as N)	0.2	mg/L	[G01]< 1	[G01]< 1	[G01]< 1	2.7
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	650	420	14000	2.9
Total Nitrogen (as N)	0.2	mg/L	660	450	14000	17
Heavy Metals						
Aluminium (filtered)	0.05	mg/L	0.11	< 0.25	< 0.25	< 0.05
Antimony (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	< 0.005
Arsenic (filtered)	0.001	mg/L	< 0.005	< 0.005	< 0.005	0.001
Barium (filtered)	0.02	mg/L	0.05	< 0.02	< 0.025	0.02
Beryllium (filtered)	0.001	mg/L	< 0.005	< 0.005	< 0.005	< 0.001
Bismuth (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	< 0.005
Boron (filtered)	0.05	mg/L	3.3	2.3	18	0.54
Cadmium (filtered)	0.0002	mg/L	0.0041	0.0038	0.0096	0.0019
Chromium (filtered)	0.001	mg/L	< 0.005	< 0.005	< 0.005	0.052
Cobalt (filtered)	0.001	mg/L	0.17	0.048	1.9	< 0.001
Copper (filtered)	0.001	mg/L	0.049	< 0.005	0.037	0.002
Lead (filtered)	0.001	mg/L	< 0.005	< 0.005	0.063	0.012
Manganese (filtered)	0.005	mg/L	82	13	210	0.017
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Molybdenum (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	< 0.005
Nickel (filtered)	0.001	mg/L	4.6	1.8	51	0.006
Selenium (filtered)	0.001	mg/L	< 0.005	< 0.005	0.009	0.009
Silver (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	< 0.005
Strontium (filtered)	0.005	mg/L	14	14	2.4	10
Thallium (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	< 0.005
Tin (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	< 0.005
Titanium (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	< 0.005
Uranium (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	< 0.005
Vanadium (filtered)	0.005	mg/L	< 0.025	< 0.025	< 0.025	< 0.005
Zinc (filtered)	0.005	mg/L	0.15	0.060	0.30	0.071

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Nitrogens (speciated)			
Ammonia (as N)	Melbourne	Nov 15, 2018	28 Day
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Perth	Nov 12, 2018	28 Day
- Method: LTM-INO-4350 Aqueous Inorganic Analytes by Discrete Analyser			
Nitrate (as N)	Perth	Nov 12, 2018	2 Day
- Method: LTM-INO-4350 Aqueous Inorganic Analytes by Discrete Analyser			
Nitrite (as N)	Perth	Nov 12, 2018	2 Day
- Method: LTM-INO-4350 Aqueous Inorganic Analytes by Discrete Analyser			
Organic Nitrogen (as N)	Melbourne	Nov 12, 2018	7 Day
- Method: APHA 4500 Organic Nitrogen (N)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Nov 15, 2018	7 Day
- Method: LTM-INO-4040 Phosphate and Nitrogen in waters by Continuous Flow Analysis (CFA)			
- Method: LTM-INO-4310 TKN in Waters & Soils by FIA			
Cyanide (total)	Melbourne	Nov 14, 2018	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Heavy Metals (filtered)	Melbourne	Nov 14, 2018	180 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Mobil Metals : Metals M15	Melbourne	Nov 16, 2018	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Thallium (filtered)	Melbourne	Nov 16, 2018	6 Month
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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Company Name:	SLR Consulting (Qld)	**Order No.:**	
Address:	Level 2 15 Astor Terrace Spring Hill QLD 4000	**Report #:**	627226
		Phone:	07 3858 4800
		Fax:	
Project Name:	BYLONG	**Received:**	Nov 9, 2018 9:14 AM
Project ID:	67511369	**Due:**	Nov 23, 2018
		Priority:	10 Day
		Contact Name:	Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																															X	X	X		X
External Laboratory																																																																		
1	SP1_0-0.1	Nov 06, 2018		Soil	P18-No14141	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
2	SP1_0-0.3	Nov 06, 2018		Soil	P18-No14142	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
3	SP2_0-0.1	Nov 06, 2018		Soil	P18-No14143	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
4	SP2_0-0.3	Nov 06, 2018		Soil	P18-No14144	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
5	SP3_0-0.1	Nov 06, 2018		Soil	P18-No14145	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
6	SP3_0-0.3	Nov 06, 2018		Soil	P18-No14146	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
7	SP4_0-0.1	Nov 06, 2018		Soil	P18-No14147	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
8	SP4_0-0.3	Nov 06, 2018		Soil	P18-No14148	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
9	SP5_0-0.1	Nov 06, 2018		Soil	P18-No14149	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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NATA # 1261
Site # 23736

Company Name: SLR Consulting (Qld)
Address: Level 2 15 Astor Terrace
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QLD 4000

Project Name: BYLONG
Project ID: 67511369

Order No.:
Report #: 627226
Phone: 07 3858 4800
Fax:

Received: Nov 9, 2018 9:14 AM
Due: Nov 23, 2018
Priority: 10 Day
Contact Name: Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																															X	X	X		X
10	SP5_0-0.3	Nov 06, 2018		Soil	P18-No14150	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
11	SP6_0-0.1	Nov 06, 2018		Soil	P18-No14151	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
12	SP6_0-0.3	Nov 06, 2018		Soil	P18-No14152	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
13	SP7_0-0.1	Nov 06, 2018		Soil	P18-No14153	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
14	SP7_0-0.3	Nov 06, 2018		Soil	P18-No14154	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
15	SP8_0-0.1	Nov 06, 2018		Soil	P18-No14155	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
16	SP9_0-0.05	Nov 06, 2018		Soil	P18-No14156	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
17	SP9_0.05-0.1	Nov 06, 2018		Soil	P18-No14157	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
18	SP10_0-0.1	Nov 06, 2018		Soil	P18-No14158	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
19	SP10_0.3	Nov 06, 2018		Soil	P18-No14159	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
20	SP11_0-0.1	Nov 06, 2018		Soil	P18-No14160	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
21	SP11_0.3	Nov 06, 2018		Soil	P18-No14161	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																															X	X	X		X
22	SP12_0-0.1	Nov 06, 2018		Soil	P18-No14162	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
23	SP12_0.3	Nov 06, 2018		Soil	P18-No14163	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
24	SP13_0-0.1	Nov 06, 2018		Soil	P18-No14164	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
25	SP13_0.3	Nov 06, 2018		Soil	P18-No14165	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
26	SP14_0-0.1	Nov 06, 2018		Soil	P18-No14166	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
27	SP15_0-0.1	Nov 06, 2018		Soil	P18-No14167	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
28	SP15_0.3	Nov 06, 2018		Soil	P18-No14168	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
29	SP17_0-0.1	Nov 06, 2018		Soil	P18-No14169	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
30	SP17_0-0.3	Nov 06, 2018		Soil	P18-No14170	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
31	SP18_0-0.1	Nov 06, 2018		Soil	P18-No14171	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
32	SP18_0.3	Nov 06, 2018		Soil	P18-No14172	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X		X	X		X		X		X		X		X		X	X		X	X	X
33	SP19_0-0.1	Nov 06, 2018		Soil	P18-No14173	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X		X	X		X		X		X		X		X		X	X		X		X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																																				
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																														X						
34	SP21_0-0.1	Nov 06, 2018		Soil	P18-No14174	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
35	SP21_0-0.3	Nov 06, 2018		Soil	P18-No14175	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
36	SP21_0-0.3	Nov 06, 2018		Soil	P18-No14176	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
37	SP23_0-0.1	Nov 06, 2018		Soil	P18-No14177	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
38	SP23_0.3	Nov 06, 2018		Soil	P18-No14178	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
39	SP24_0-0.1	Nov 06, 2018		Soil	P18-No14179	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
40	SP24_0-0.3	Nov 06, 2018		Soil	P18-No14180	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
41	SP25_0-0.1	Nov 06, 2018		Soil	P18-No14181	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
42	SP25_0.3	Nov 06, 2018		Soil	P18-No14182	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
43	SP26_0-0.1	Nov 06, 2018		Soil	P18-No14183	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
44	SP26_0.3	Nov 06, 2018		Soil	P18-No14184	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	
45	SP27_0-0.1	Nov 06, 2018		Soil	P18-No14185	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X	

Sample Detail						Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																			
Brisbane Laboratory - NATA Site # 20794																														X				X	X
Perth Laboratory - NATA Site # 23736																															X	X	X		X
34	SP21_0-0.1	Nov 06, 2018		Soil	P18-No14174	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
35	SP21_0-0.3	Nov 06, 2018		Soil	P18-No14175	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
36	SP21_0-0.3	Nov 06, 2018		Soil	P18-No14176	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
37	SP23_0-0.1	Nov 06, 2018		Soil	P18-No14177	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
38	SP23_0.3	Nov 06, 2018		Soil	P18-No14178	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X		X
39	SP24_0-0.1	Nov 06, 2018		Soil	P18-No14179	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
40	SP24_0-0.3	Nov 06, 2018		Soil	P18-No14180	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
41	SP25_0-0.1	Nov 06, 2018		Soil	P18-No14181	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
42	SP25_0.3	Nov 06, 2018		Soil	P18-No14182	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
43	SP26_0-0.1	Nov 06, 2018		Soil	P18-No14183	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
44	SP26_0.3	Nov 06, 2018		Soil	P18-No14184	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
45	SP27_0-0.1	Nov 06, 2018		Soil	P18-No14185	X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

Company Name: SLR Consulting (Qld)
Address: Level 2 15 Astor Terrace
Spring Hill
QLD 4000

Project Name: BYLONG
Project ID: 67511369

Order No.:
Report #: 627226
Phone: 07 3858 4800
Fax:

Received: Nov 9, 2018 9:14 AM
Due: Nov 23, 2018
Priority: 10 Day
Contact Name: Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
46	SP27_0.3	Nov 06, 2018		Soil	P18-No14186	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
47	SP28_0-0.1	Nov 06, 2018		Soil	P18-No14187	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
48	SP28_0.3	Nov 06, 2018		Soil	P18-No14188	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
49	SP29_0-0.1	Nov 06, 2018		Soil	P18-No14189	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
50	SP29_0.3	Nov 06, 2018		Soil	P18-No14190	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
51	SP30_0-0.1	Nov 06, 2018		Soil	P18-No14191	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
52	SP31_0-0.1	Nov 06, 2018		Soil	P18-No14192	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
53	SP31_0.3	Nov 06, 2018		Soil	P18-No14193	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
54	SP32_0-0.1	Nov 06, 2018		Soil	P18-No14194	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
55	SP32_0.3	Nov 06, 2018		Soil	P18-No14195	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
56	SP33_0-0.1	Nov 06, 2018		Soil	P18-No14196	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
57	SP33_0.3	Nov 06, 2018		Soil	P18-No14197	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

Company Name:	SLR Consulting (Qld)	**Order No.:**		**Received:**	Nov 9, 2018 9:14 AM
Address:	Level 2 15 Astor Terrace	**Report #:**	627226	**Due:**	Nov 23, 2018
	Spring Hill	**Phone:**	07 3858 4800	**Priority:**	10 Day
	QLD 4000	**Fax:**		**Contact Name:**	Ruairi Hanley
Project Name:	BYLONG				
Project ID:	67511369				

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
58	SP34_0-0.1	Nov 06, 2018		Soil	P18-No14198	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
59	SP34_0.3	Nov 06, 2018		Soil	P18-No14199	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
60	SP35_0-0.1	Nov 06, 2018		Soil	P18-No14200	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
61	SP35_0.3	Nov 06, 2018		Soil	P18-No14201	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
62	SP36_0-0.1	Nov 06, 2018		Soil	P18-No14202	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
63	SP36_0.3	Nov 06, 2018		Soil	P18-No14203	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
64	SP37_0-0.1	Nov 06, 2018		Soil	P18-No14204	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
65	SP37_0.3	Nov 06, 2018		Soil	P18-No14205	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
66	SP38_0-0.1	Nov 06, 2018		Soil	P18-No14206	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
67	SP38_0.3	Nov 06, 2018		Soil	P18-No14207	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
68	SP39_0-0.1	Nov 06, 2018		Soil	P18-No14208	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
69	SP39_0.3	Nov 06, 2018		Soil	P18-No14209	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X

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NATA # 1261
Site # 23736

Company Name: SLR Consulting (Qld)
Address: Level 2 15 Astor Terrace
Spring Hill
QLD 4000

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Project ID: 67511369

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Received: Nov 9, 2018 9:14 AM
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Contact Name: Ruairi Hanley

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Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
70	REF1 0-0.1	Nov 06, 2018		Soil	P18-No14210	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X	X		X	X	X
71	QC1	Nov 06, 2018		Soil	P18-No14211	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X	X		X		X
72	QC1A	Nov 06, 2018		Soil	P18-No14212	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X	X		X		X
73	BMH04	Nov 07, 2018		Water	P18-No14213		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X					X		X		X		X		X			X			
74	BMH02	Nov 07, 2018		Water	P18-No14214		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X					X			
75	BMH09	Nov 07, 2018		Water	P18-No14215		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X		X			X			
76	BMH10	Nov 07, 2018		Water	P18-No14216																								X																																		X			
77	BMH11	Nov 07, 2018		Water	P18-No14217		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X		X			X			
78	BMH12	Nov 07, 2018		Water	P18-No14218		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X		X			X			
79	BMH06	Nov 07, 2018		Water	P18-No14219		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X		X			X			
80	BMH08	Nov 07, 2018		Water	P18-No14220		X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X			X		X		X			X		X		X		X		X		X			X			
81	BMH01 D	Nov 07, 2018		Water	P18-No14221																									X																																				

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NATA # 1261 Site # 20794

Perth
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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name:	SLR Consulting (Qld)	**Order No.:**	
Address:	Level 2 15 Astor Terrace	**Report #:**	627226
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Contact Name:	Ruairi Hanley

Eurofins | mgt Analytical Services Manager : Ryan Gilbert

Sample Detail						Aluminium	Aluminium (filtered)	Antimony	Antimony (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Bismuth	Bismuth (filtered)	Boron	Boron (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Cyanide (free)	Cyanide (total)	HOLD	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum	Molybdenum (filtered)	Nickel	Nickel (filtered)	pH (1:5 Aqueous extract at 25°C as rec.)	Selenium	Selenium (filtered)	Silver	Silver (filtered)	Strontium	Strontium (filtered)	Sulphur	Thallium	Thallium (filtered)	Tin	Tin (filtered)	Titanium	Titanium (filtered)	Uranium	Uranium (filtered)	Vanadium	Vanadium (filtered)	Zinc	Zinc (filtered)	Acid Sulfate Soils Field pH Test	Eurofins | mgt Suite B11	Nitrogens (speciated)	Moisture Set	Chromium Suite (Minus ANC- WA)	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
Sydney Laboratory - NATA Site # 18217																																																																		
Brisbane Laboratory - NATA Site # 20794																																																													X				X	X
Perth Laboratory - NATA Site # 23736																														X																																X	X	X		X
82	BMH01 S	Nov 07, 2018		Water	P18-No14222																									X																																				
83	QC1	Nov 07, 2018		Water	P18-No14223																									X																																				
84	REF1 0.3	Nov 06, 2018		Soil	P18-No14488	X		X		X		X		X		X		X		X		X		X		X		X			X		X		X		X		X		X	X		X		X			X		X		X		X		X		X		X	X		X	X	X
Test Counts						73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	7	73	8	3	73	7	73	7	73	7	73	7	73	7	73	73	7	73	7	73	7	2	73	6	73	7	73	7	73	7	73	7	73	6	73	73	8	73	67	73

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Cyanide (total)	mg/L	< 0.005			0.005	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Antimony (filtered)	mg/L	< 0.005			0.005	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Bismuth (filtered)	mg/L	< 0.005			0.005	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Molybdenum (filtered)	mg/L	< 0.005			0.005	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Silver (filtered)	mg/L	< 0.005			0.005	Pass	
Strontium (filtered)	mg/L	< 0.005			0.005	Pass	
Thallium (filtered)	mg/L	< 0.005			0.005	Pass	
Tin (filtered)	mg/L	< 0.005			0.005	Pass	
Titanium (filtered)	mg/L	< 0.005			0.005	Pass	
Uranium (filtered)	mg/L	< 0.005			0.005	Pass	
Vanadium (filtered)	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Ammonia (as N)	%	125			70-130	Pass	
Cyanide (total)	%	97			70-130	Pass	
Nitrate & Nitrite (as N)	%	105			70-130	Pass	
Nitrate (as N)	%	104			70-130	Pass	
Nitrite (as N)	%	102			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	171			70-130	Fail	
LCS - % Recovery							
Heavy Metals							
Aluminium (filtered)	%	98			80-120	Pass	
Arsenic (filtered)	%	97			80-120	Pass	
Bismuth (filtered)	%	91			80-120	Pass	
Boron (filtered)	%	111			80-120	Pass	
Cadmium (filtered)	%	87			80-120	Pass	
Chromium (filtered)	%	91			80-120	Pass	
Cobalt (filtered)	%	95			80-120	Pass	
Copper (filtered)	%	92			80-120	Pass	
Lead (filtered)	%	91			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese (filtered)			%	106			80-120	Pass	
Mercury (filtered)			%	83			70-130	Pass	
Molybdenum (filtered)			%	88			80-120	Pass	
Nickel (filtered)			%	92			80-120	Pass	
Selenium (filtered)			%	100			80-120	Pass	
Silver (filtered)			%	81			80-120	Pass	
Strontium (filtered)			%	103			80-120	Pass	
Thallium (filtered)			%	92			80-120	Pass	
Tin (filtered)			%	111			80-120	Pass	
Titanium (filtered)			%	94			80-120	Pass	
Uranium (filtered)			%	87			70-130	Pass	
Zinc (filtered)			%	99			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M18-No13420	NCP	%	79			70-130	Pass	
Cyanide (total)	M18-No15191	NCP	%	35			70-130	Fail	Q08
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium (filtered)	M18-No17522	NCP	%	88			75-125	Pass	
Antimony (filtered)	M18-No17522	NCP	%	91			75-125	Pass	
Arsenic (filtered)	M18-No17522	NCP	%	93			70-130	Pass	
Barium (filtered)	M18-No17522	NCP	%	93			75-125	Pass	
Beryllium (filtered)	M18-No17522	NCP	%	85			75-125	Pass	
Bismuth (filtered)	M18-No17522	NCP	%	73			75-125	Fail	Q08
Boron (filtered)	M18-No17522	NCP	%	80			75-125	Pass	
Cadmium (filtered)	M18-No17522	NCP	%	87			70-130	Pass	
Chromium (filtered)	M18-No17522	NCP	%	92			70-130	Pass	
Cobalt (filtered)	M18-No17522	NCP	%	92			75-125	Pass	
Copper (filtered)	M18-No17522	NCP	%	92			70-130	Pass	
Lead (filtered)	M18-No17522	NCP	%	92			70-130	Pass	
Manganese (filtered)	M18-No17522	NCP	%	101			70-130	Pass	
Mercury (filtered)	M18-No17522	NCP	%	95			70-130	Pass	
Molybdenum (filtered)	M18-No17522	NCP	%	87			75-125	Pass	
Nickel (filtered)	M18-No17522	NCP	%	92			70-130	Pass	
Selenium (filtered)	M18-No17522	NCP	%	93			70-130	Pass	
Silver (filtered)	M18-No17522	NCP	%	71			75-125	Fail	Q08
Strontium (filtered)	M18-No17522	NCP	%	96			75-125	Pass	
Tin (filtered)	M18-No17522	NCP	%	90			75-125	Pass	
Titanium (filtered)	M18-No17522	NCP	%	90			75-125	Pass	
Uranium (filtered)	M18-No17522	NCP	%	94			70-130	Pass	
Vanadium (filtered)	M18-No17522	NCP	%	92			75-125	Pass	
Zinc (filtered)	M18-No17522	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Thallium (filtered)	M18-No17522	NCP	%	94			75-125	Pass	
Spike - % Recovery									
				Result 1					
Nitrate & Nitrite (as N)	P18-No14215	CP	%	93			70-130	Pass	
Nitrate (as N)	P18-No14215	CP	%	93			70-130	Pass	
Spike - % Recovery									
				Result 1					
Nitrite (as N)	P18-No14216	CP	%	83			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
				Result 1					
Total Kjeldahl Nitrogen (as N)	B18-No16280	NCP	%	101			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M18-No13608	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cyanide (total)	M18-No15191	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nitrate & Nitrite (as N)	P18-No14213	CP	mg/L	18	17	5.0	30%	Pass	
Nitrate (as N)	P18-No14213	CP	mg/L	18	17	5.0	30%	Pass	
Nitrite (as N)	P18-No14213	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M18-No16679	NCP	mg/L	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium (filtered)	M18-No17522	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Antimony (filtered)	M18-No17522	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Arsenic (filtered)	M18-No17522	NCP	mg/L	0.003	0.003	4.0	30%	Pass	
Barium (filtered)	M18-No17522	NCP	mg/L	0.12	0.12	1.0	30%	Pass	
Beryllium (filtered)	M18-No17522	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bismuth (filtered)	M18-No17522	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Boron (filtered)	M18-No17522	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium (filtered)	M18-No17522	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M18-No17522	NCP	mg/L	0.004	0.004	7.0	30%	Pass	
Cobalt (filtered)	M18-No17522	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	M18-No17522	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	M18-No17522	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	M18-No17522	NCP	mg/L	0.35	0.35	2.0	30%	Pass	
Mercury (filtered)	M18-No17522	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Molybdenum (filtered)	M18-No17522	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nickel (filtered)	M18-No17522	NCP	mg/L	0.006	0.006	2.0	30%	Pass	
Selenium (filtered)	M18-No17522	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Silver (filtered)	M18-No17522	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Strontium (filtered)	M18-No17522	NCP	mg/L	0.34	0.34	2.0	30%	Pass	
Tin (filtered)	M18-No17522	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Titanium (filtered)	M18-No17522	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Uranium (filtered)	M18-No17522	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vanadium (filtered)	M18-No17522	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc (filtered)	M18-No17522	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Thallium (filtered)	M18-No17522	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Eurofins | mgt accreditation number 1261, corporate site 1254 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

Ryan Gilbert	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)
Matthew Deaves	Senior Analyst-Inorganic (WA)

Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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