



Memorandum

7 November 2017

To	Sharon Arena, Animal Plant Mineral		
Copy to	Paul Burton, TNG		
From	Adam Osbaldeston, Robert Virtue	Tel	6222 8469
Subject	Adverse Materials Supplementary Investigation	Job no.	61/29057

1 Introduction and background

The following information provides the necessary information to address the comments made by the Northern Territory Environmental Protection Authority (NTEPA) in response to the submission of the Draft Environmental Impact Statement (EIS) for the Mount Peake Project.

The information provided addresses comments made to the submitted technical report: *Mount Peake - Acid and Metalliferous Drainage Assessment of laboratory results* (GHD, November 2016). The following sections address each of the comments made by the NTEPA. For reference, the NTEPA comments are included as Attachment 1.

2 Sample information

2.1 Dates of sample collection

Samples for Stage 1 and Stage 2 were taken from core and percussion drilling samples recovered from various stages of resource drilling completed between 2009 and 2015. This is summarised below for each stage.

2.1.1 Stage 1 samples

The stage 1 assessment was based on the following analyses

Laboratory X-Ray Fluorescence (XRF): Assessment of TNG's laboratory XRF database was sourced during exploration and resource definition drilling (2012 Reverse Circulation (RC) drilling and 2015 PQ core drilling). The laboratory XRF dataset consisted of a suite of 20 elements on a total of 5301 primary samples. The 2012 drilling data was analysed in 2012, on a total of 5002 samples, and the 2015 drilling data was analysed in November/December on 299 samples.

XRF Assessment of select chip tray samples: In order to provide additional assay data on waste material (in particular sulfur data at low detection levels), a full 'soils' suite assessment was undertaken on 1023 primary samples. This was completed in December 2015.

2.1.2 Stage 2 samples

All Stage 2 sampling was completed by ALS laboratories. The samples were sourced from the 2012 RC drilling and 2015 PQ core drilling.

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Stage 2 static AMD testing was completed by the laboratory in June/July 2016.

Stage 2 kinetic and leachability testing was completed by the laboratory on a sub-set of the Stage 1 samples in July/August 2016.

2.2 Sample handling and storage procedures

2.2.1 Stage 1 samples

Samples were collected during RC drilling completed between 2009 and 2015 from the rotating splitter below the sample cyclone. All samples were sampled in the field into 10" x 14" calico bags.

Samples from PQ core drilling (as core) were cut with a diamond saw by TNG. Core and RC chips samples were then dispatched to the ALS Alice Springs laboratory for preparation. ALS then air-freighted the pulp packets to Perth ALS for analysis.

The XRF sample analysis that TNG conducted in late 2015 was on the RC chip trays that were collected from the RC drilling program in 2009-2012 and stored in TNG's storage shed in Alice Springs. The chip trays were then pulled and used to generate some 1200 XRF analyses of ore and waste.

2.2.2 Stage 2 samples

For the Stage 2 laboratory assessment, samples were taken from stored material held at ALS Adelaide and Perth and sent to ALS laboratory in Brisbane for assessment. These samples were generated from the coarse reject material from the 2012 resource drilling diamond drilling. Full PQ core was sent to Perth in December and 1 m intervals were coarse crushed (jaw crusher) to about 6 mm size for 12-18 kg/m. This was split down for analysis (1 kg) and then a split was taken to give a 2 to 5 kg sample for storage, while the rest was crushed and composited into the pilot plant testwork.

There was sufficient material to generate the 2016 testwork (NAG/NAPP etc) samples representing the ore body (209 samples). Samples representing waste were lacking in this sample set, so samples representing waste were sourced from geotechnical core drilling completed in 2016 on hanging wall/footwall waste material. This generated a total of 196 samples of various waste-types (gabbro, granite and alluvials). Samples representing the tailings stream (total of 4 samples) were taken from storage at ALS Balcatta where they had been stored since mid-2013 when a trial process-plant experimental works was completed.

As a general comment, all material used for all the analytical work had been stored in dry warm conditions and so would not have broken down appreciably, even after up to 6 years (e.g. 2009 RC drilling chip samples used in late 2015 XRF work) of storage. Firstly there was little sulfide to degrade/oxidise, and secondly the samples were always dry and under warm and low humidity conditions (Perth or Alice Springs).

2.3 Detailed and exact laboratory methods used for analysis and raw data results

The laboratory methods used by ALS are summarised below in Table 1 for static testing and Table 2 for kinetic testing.

Table 1 Stage 1 static testing - laboratory methods

Method	Description
pH (1:5)	In house: Referenced to APHA 4500H+. pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Net Acid Production Potential	In house: Referenced to Coastech Research (Canada)(Mod.). NAPP = Acid Production Potential (APP or MAP- Maximum Acid Potential) minus Neutralising Capacity (ANC). NAPP may be +ve, zero or -ve.
Electrical Conductivity (1:5)	In house: Referenced to APHA 2510. Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 104)
Net Acid Generation	In house: Referenced to Miller (1998) Titrimetric procedure determines net acidity in a soil following peroxide oxidation. Titrations to both pH 4.5 and pH 7 are reported.
Acid Neutralising Capacity (ANC)	In house: Referenced to USEPA 600/2-78-054, I. Miller (2000). A fizz test is done to semi-quantitatively estimate the likely reactivity. The soil is then reacted with an known excess quantity of an appropriate acid. Titration determines the acid remaining, and the ANC can be calculated from comparison with a blank titration.
pH (Saturated Paste)	In house: Referenced to USEPA 600/2 - 78 - 054 - pH determined on a saturated paste by ISE.
Moisture Content	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Sulfate as SO ₄ ²⁻ Total	In house: Total Sulfate is determined off a HCl digestion by ICPAES as S , and reported as SO ₄
Sulfur - Total as S (LECO)	In house: Dried and pulverised sample is combusted in a high temperature furnace in the presence of strong oxidants / catalysts. The evolved S (as SO ₂) is measured by infra-red detector
Total Metals by ICP-AES	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals by ICP-MS - Suite X	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.

Method	Description
Total Metals by ICP-MS - Suite Y	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite Z	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)

Table 2 Stage 2 kinetic testing - laboratory methods

Method	Description
pH by PC Titrator	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Conductivity by PC Titrator	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Calculated TDS (from Electrical Conductivity)	In house: Calculation from Electrical Conductivity (APHA 2510 B) using a conversion factor specified in the analytical report. This method is compliant with NEPM (2013) Schedule B(3)
Exchangeable Cations on Alkaline Soils	In house: Referenced to Rayment & Lyons (2011) Method 15C1. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with alcoholic ammonium chloride at pH 8.5. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil.
Alkalinity by PC Titrator	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO ₄ 2- by Discrete Analyser	In house: Referenced to APHA 4500-SO ₄ . Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO ₄ suspension is measured by a photometer and the SO ₄ -2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)

Method	Description
Chloride by Discrete Analyser	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L April 2003
Major Cations - Dissolved	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3). Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Water Leachable Metals by ICP-MS - Suite A	In house: Referenced to APHA 3125; USEPA SW846 - 6020, AS 4439.3, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Water Leachable Metals by ICP-MS - Suite B	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Acid Buffering Characterisation Curves (ABCC's)	In House Method: Referenced to Miller and Jeffery (1995) Determine the portion of an ANC value of a particular sample is readily available for acid neutralization.
Net Acid Generation - Kinetic (K-NAG)	In House Method: Referenced to Miller (1998) Titrimetric procedure determines net acidity in a soil following peroxide oxidation. It involves monitoring the temperature and pH of a material at set intervals, as it reacts. Variations of these parameters over time, gives an indication of how a material will behave in field conditions.

2.4 Detailed outline of the criteria against which AMD was assessed and the basis for this decision

The following sections provide a summary of any criteria used and the basis for this decision

2.4.1 Relative elemental concentrations

Section 2.3.1 of the *Mount Peake - Acid and Metalliferous Drainage Assessment* describes how a Geochemical Abundance Index (GAI) was used to compare the elemental concentration in a sample to the crustal abundance.

The purpose of comparing results to the GAI is to provide a relative indication of any elemental enrichment that may be of environmental importance. It should be noted that the GAI only considers total

concentration and does not take in to account solubility/mobility or bioavailability in the environment nor does it take in to account the toxicity of the element.

2.4.2 Sulfur concentrations

Section 2.4.1 of the *Mount Peake - Acid and Metalliferous Drainage Assessment* summarises the sulfur concentrations, and makes reference to those samples that were over 0.2% sulfur. A value of 0.2% was used as this equates to a calculated Maximum Potential Acidity (MPA) of 10 kg of H₂SO₄ per tonne.

The 10 kg value was initially chosen as a general indication, as it is commonly used as an upper limit of PAF LC, in the absence of any ANC. In this case however, it is also approximately equivalent to the 5th percentile for ANC and 3 times the 99th percentile of MPA, hence it is highly unlikely that, even allowing for some overestimation of ANC as indicated by the ABCC plots, that the NAPP would be positive with an MPA below 10 kg/t H₂SO₄.

2.4.3 Leachate criteria

Section 2.5.3 of the *Mount Peake - Acid and Metalliferous Drainage Assessment* outlines various criteria against which the Australian Standard Leachate Procedure (ASLP) testing was compared. The criteria used were:

- ANZECC & ARMICANZ (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Guidelines for protection of 99% of freshwater aquatic ecosystem species (FAE99%)
- ANZECC & ARMICANZ (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Guidelines for protection of livestock watering
- Australian Drinking Water Guidelines (ADWG) (NHMRC & NRMCC, 2011). Most composite-lined landfill guidelines, such as Guidelines for the Siting, Design and Management of Solid Waste Disposal Sites In the Northern Territory (NT EPA, 2013) use an upper limit of 100 times ADWG, assuming a 100 times dilution between the waste storage and the receiving environment. Unlined burial guidelines such as ANZECC (1999) apply an upper limit of 10 times ADWG, therefore for conservative purposes a factor of 10 times ADWG has been adopted for this assessment
- Guidelines for incidental contact are on Primary Recreational Contact guidelines (nominally 10 times the ADWG).

The results were compared to the above hierarchy of guidelines in order to provide an assessment of the relative risks posed by any potential leachate that may be generated by the operations.

2.5 An explanation of the cause of NAG pH values >9

NAG tests are aimed at assessing oxidation of sulfides, and they are not designed to predict the pH of non-sulfidic waste with only slow-weathering silicates (which should be assessed with ASLP tests and other kinetic water leach tests).

Reference to relative high pH in NAG results is discussed in Charles et. al. 2015¹, in which it is noted that the use of the NAG test method on samples with elevated carbonate content can result in excessively basic pH conditions, due to the driving off of carbonic acid in the boiling step, which may be misleading and result in uncertainty in interpretation.

Further analysis of the laboratory data for the Stage 1 assessment indicates that approximately 34% of values recorded a pH (ox) of above 9, most of which were from the alluvial material. This is presented below as Figure 1.

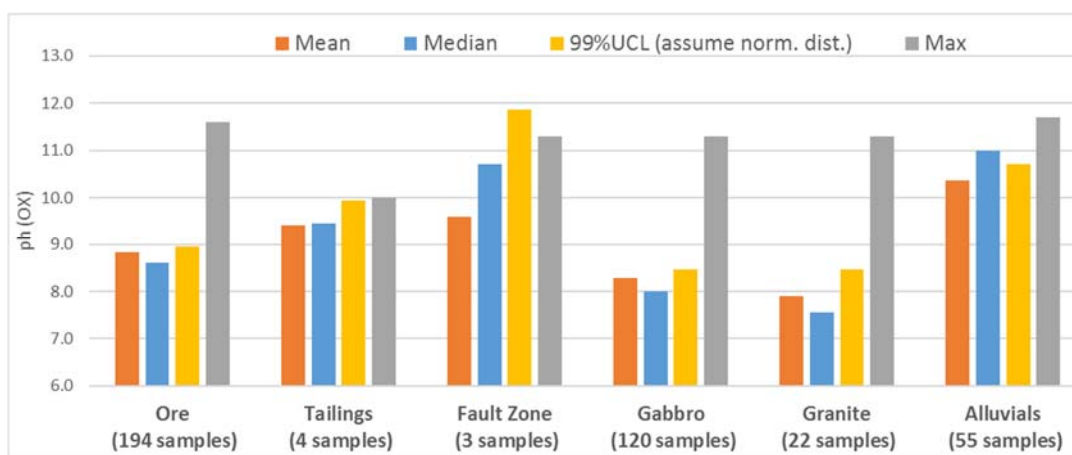


Figure 1 Laboratory pH of samples by rock type

In addition to the tests presented, TNG have commenced on-going barrel leach tests on various samples representing waste and ore. To date these samples have demonstrated relatively neutral pH, with the median pH over two rounds of sampling (8 samples) being 8.1. A summary of the laboratory results for the barrel leach tests are summarised in Attachment 2. The data presents the laboratory results taken from 109 and 209 days since the establishment of the tests. All results are for simulated rainfall. To date, there has been no leachate generated for samples under natural rainfall conditions due to lack of rainfall.

2.6 An explanation of how ANC values of 399 kg/t H₂SO₄ for a granite sample might occur

A single sample returned an ANC value of 399 kg/t H₂SO₄. The laboratory result has been checked, and there has been no error in the reporting process. As presented in Section 2.4.3 of the *Mount Peake - Acid and Metalliferous Drainage Assessment*, this anomalous result was from a granite sample (sample 1063 – EB1615818063 - 11MPRC042). The sample was taken from a depth interval between 10 to 20 m and the lithological weathering descriptions is of a mostly oxidised sample (MOX).

The reason for the high ANC is unclear, but could be related to possible mineralisation within the original granite or from high concentrations of micas and clays and residual bicarbonates in the weathered

¹ Difficulties of Interpretation of NAG Test Results on Net Neutralizing Mine Wastes: Initial Observations of Elevated pH Conditions and Theory of CO₂ Disequilibrium, Jessica Charles, Andrew Barnes, Julien Declercq, Ruth Warrender, Christopher Brough, and Robert Howell, 10th International Conference on Acid Rock Drainage & IMWA Annual Conference, Conference Paper, April 2015

granite. The high NAG pH of 11.3 is consistent with high carbonate content in the sample. As other granite samples within a similar profile (shallow and oxidised) did not show such high ANC values, the overall ANC of this waste material is significantly lower. It must also be remembered it was only 1 sample out of over 400 NAPP analyses, so its result has little impact on the overall ANC and NAPP of the waste rock.

2.7 X, Y and Z coordinates (in UTM or GDA94) for all samples collected

A summary of sample locations used during the 2015 and 2016 AMD assessments is presented as Attachment 3. All coordinates are presented in MGA Zone 53.

3 Assess the potential for alkaline mine drainage to occur. Discuss the potential impacts of highly alkaline mine drainage and expected solubility of metals at elevated pH values

Based on the ASLP results, drainage is likely to be neutral (pH between 6.5 to 8.5), with a range of 6.7 to 9.4 and a median of 8.1. This range corresponds with the minimum solubility of most commonly environmentally significant metals, including amphoteric elements aluminium and arsenic.

Consequently the material represents low risk of dissolved metals, reflected in the relatively low concentrations within the ASLP leach solutions. The occurrence and significance of alkaline NAG results, which do not indicate alkaline drainage, are addressed in Section 2.5.

4 Discuss potential seepage from Waste Rock, including review of baseline groundwater monitoring data.

As presented in the in Section 2.5.3 of the *Mount Peake - Acid and Metalliferous Drainage Assessment*, leachate analysis from the ASLP results indicates that metals aluminium, arsenic, boron, cadmium, copper, iron, lead, nickel, selenium and zinc exceeded FAE99. Of these aluminium, arsenic, copper, iron, lead, nickel, and zinc exceeded the FAE99 level by a factor of more than 10 in some samples. Only iron and aluminium exceeded more than 10 times ADWG, although as they are both relatively insoluble in circum-neutral oxidising conditions they are unlikely to be significantly elevated in actual waste rock leachate. Based on the above results, the waste rock is within the acceptable limits for unlined storage.

Since the completion of the 2016 reporting, groundwater sampling has been completed on a bore (09MPRC001) that is located within the pit. The bore is a vertical RC hole drilled in 2009 that has been cased with 6 inch PVC to around 30 metres below ground level. Groundwater ingress to the bore is likely from the upper weathered zone and minor seepage from the alluvial cover. This bore has been used to provide minor water supplies used for drilling operations. Sample results from this bore, together with the nearest pastoral bore (Boko's Bore, located 15 km from the proposed pit) are presented as Attachment 4.

The groundwater quality data for the in-pit bore is presented to demonstrate baseline groundwater quality in the area of the mine. The baseline water quality for the pit bore indicates that metal concentrations are generally elevated, both with comparison to the nearest stock bore (Boko Bore), and the assessment

criteria. For example, copper, lead, zinc and boron all exceed the FAE99%. Lead also exceeds 10 x ADWG criteria, and zinc exceeds the 10 x FAE99% criteria.

The in-pit water quality data was compared to the leachable concentrations, and it was found that concentrations of boron, copper, lead, manganese, nickel and zinc in the in-pit bore were greater than the median leachable concentrations.

The hydrogeological conceptual model for the project area has been presented in the Groundwater supplementary report (GHD, 2017). The report describes the mine site hydrogeological setting, noting that groundwater flow within the area of pit is minimal, and overlying shallow alluvial sediments (up to a depth of 20 m) do not offer significant groundwater supplies.

Any potential seepage from the Waste Rock Dump, if not captured by drainage infrastructure would likely eventually migrate to the pit. Given the lack of users of the groundwater within the area of the minesite (see supplementary report), and the general poor potential to utilise the groundwater given its relatively high salinity and elevated metals, impacts from any potential seepage from the Waste Rock (expected to be minimal) are unlikely.

Attachments:

- Attachment 1: NTEPA Comments on Environmental Impact Assessment report
- Attachment 2: Current results of barrel leach tests
- Attachment 3: Sample location data
- Attachment 4: In-pit bore water quality results

Attachment 1:

NTEPA Comments on Environmental Impact Assessment report

ATTACHMENT A: SUMMARY OF FURTHER INFORMATION REQUESTED FOLLOWING THE SUPPLEMENT TO THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT

TNG LIMITED – MOUNT PEAKE PROJECT – MAY 2017

Note: Advice on the [priority] should be considered as a guide to the amount of detail that may be required in responding to each. For example, [high] priority may require a significant amount of new or detailed material, while [low] priority may require an issue to be clarified.

#	Issue	Comment	Further Information Required [Priority]
1	Commitments <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">Non AMD comments blanked out</div>	The draft EIS (Vol I & EIS) and Supplement contain many statements / commitments regarding how the Project will be designed or implemented.	<ul style="list-style-type: none"> Provide a complete table of commitments so that they can be incorporated into management plans and implemented according to approvals. This is to include performance indicators and timelines for delivery [Medium].
2	Surface water	<p>The draft EIS (Vol II App F, s8) and Supplement (E36, E51-E54) provide general details on potential contamination in surface water runoff. These include listings of potential contaminant sources and pathways, mention of sediment basins/ponds, pollutant traps, response to spills, etc. However, much of this detail is dependent on the location of mine infrastructure, as noted: <i>'the assessment of the fate and transport of contaminants of concern will be updated once project design is finalised with results incorporated in the final Water Management Plan'</i> (Supplement E36). This updated information is needed in order for the NT EPA to assess the full range and extent of environmental impacts, and to provide advice with sufficient certainty. Whilst it is understood that these details are <i>'not yet developed and will be provided to support the Mining Management Plan'</i> (Supplement E87), an updated design for infrastructure layout would better enable assessment of potential contamination and erosion risks.</p> <p>Any contaminated surface water flow off the mine site has the</p>	<ul style="list-style-type: none"> Provide a site surface water flow model to illustrate where stormwater runoff from the mine will originate and travel to. This is to be based on an updated design for infrastructure layout [High]. Provide a discussion of the potential impacts on riparian habitats close to the Project from altered surface water (and/or groundwater) quality that could arise from the Project [Medium]. Provide commitment that surface water from the mine site will not enter the catchment for Mud Hut Swamp without first being filtered in sediment ponds and pollutant traps [Low]. Commit to a baseline water quality survey of Mud Hut Swamp (following rainfall), and provided details of a monitoring program to detect potential future impacts [Medium]. Provide a map of the sites where surface water samples were obtained (Appendix J of Supplement)

#	Issue	Comment	Further Information Required [Priority]
	<p>Non AMD comments blanked out</p>	<p>potential to impact downstream environments, including riparian ecosystems and lands on pastoral stations with current certification (Supplement section 3.4, E38).</p> <p>... conditions have been obtained from the Hanson River in January 2017 but not from creeks near the mine site. The Supplement (E60) states that further water and sediment sampling will occur prior to operations commencing and be monitored during operations – details to be incorporated into the adaptive site water monitoring and management plan.</p> <p>The Supplement (#18) states that the Drainage, Erosion and Sediment Control Plan (DESCP) will be updated following detailed Project design.</p> <p>The Supplement (E49) notes that due to new flood modelling, a flood protection levee will be needed to the east of the pit.</p> <p>A comment on the draft EIS requested showing the proximity of Project infrastructure to water features and flow directions. This was not provided, rather the Supplement (E63) referred back to multiple maps in the draft EIS.</p>	<p>[Low].</p> <ul style="list-style-type: none"> • Provide details of the planned water quality and sediment sampling program [Medium]. • Commit to updating the DESCSP following project design and have this DESCSP reviewed and approved by a Certified Professional in erosion and Sediment Control [Low]. • Provide details of the flood protection levee (size, location, construction material) [Low]. • Provide a single map that clearly represents all features (Wood Duck Swamp, Stirling Swamp, Mud Hut Swamp, Ti Tree and other aquifers, waterways, water control district boundaries, and water flow directions) on the same map. Include indicative water flow directions for surface and groundwater. Include all project infrastructure including the bore field [Low].
3	Waste Rock Characterisation and potential leachate from waste rock and tailings	<p>The conclusion that the waste rock, ore and tailings produced by the TNG Mt Peake project is not AMD producing has not been adequately justified.</p> <p>Potentially 20-30% of the samples analysed would produce AMD, acid mine drainage initially and alkaline mine drainage later in the mine life. This material will require encapsulation, or other management procedures, to reduce oxidation.</p> <p>Incorrect waste characterisation can lead to designs for water /waste management infrastructure and closure strategies that may be ineffective or unachievable with the materials available.</p>	<ul style="list-style-type: none"> • Include the following information on the laboratory waste rock data [High]: <ul style="list-style-type: none"> ○ Dates of sample collection; ○ Sample handling and storage procedures; ○ Detailed and exact laboratory methods used for analysis and raw data results; ○ A detailed outline of the criteria against which NMD was assessed and the basis for this decision; ○ An explanation of the cause of NAG pH values >9, which are highly irregular;

#	Issue	Comment	Further Information Required [Priority]
		<p>If robust results show that AMD is unlikely, there remains a possibility that AMD will occur at some time in future. As noted in the Supplement (E13), there will be continual barrel leach testing of stockpiled ore and stored waste to confirm the absence of AMD. In the case that AMD is detected, it will be necessary to have a reactive management plan in place based on predefined trigger values. This plan was requested but not provided in the Supplement (E21).</p> <p>Results show that waste rock may be sodic and cause soil dispersion if it comes into contact with local soils (Supplement E6). The Supplement states that this can be managed by capping waste rock dumps with non-dispersive soils and diverting runoff and treating leachate or affected soils.</p> <p>Supplement item E29 requested information on each component likely to be present in seepage at levels above baseline groundwater concentrations. This was not addressed.</p>	<ul style="list-style-type: none"> ○ An explanation of how ANC values of 399 kg/t H₂SO₄ for a granite sample might occur; ○ X, Y and Z coordinates (in UTM or GDA94) for all samples collected. ● Provide a detailed outline of potential impacts caused by highly alkaline mine drainage, including details of metal solubility at elevated pH values [High]. ● Provide details of a reactive management plan (including trigger values) if AMD is detected from waste rock, ore or tailings [High]. ● Discuss the implication of sodic leachate (or the management of it) in waste rock to be used for construction (waste rock to be used for mine-site construction) [Medium] ● Identify any substance that may be present in seepage at levels above baseline groundwater concentrations, and discuss the following [Medium]: <ul style="list-style-type: none"> ○ Potential concentrations in stormwater runoff and seepage into underlying aquifers. ○ Mobility, bioavailability and toxicity. ○ Potential pathways to sensitive receptors. ○ Include consideration of arsenic, lead, selenium, Fe, SiO₂, MgO, Al₂O₃ and TiO₂. ○ Management of any identified risks.
4	<p>Groundwater drawdown at borefield</p> <p style="border: 1px solid red; padding: 2px; display: inline-block;">Non AMD comments blanked out</p>	<p>The Supplement (E41, E42) states that phreatophytic vegetation in the borefield area (along Hanson River) may be impacted by a drawdown of 10 m or more. According to the modelling, this would affect a 6 km length of the Hanson River, including riparian and Corymbia woodland. Impacts could</p>	<ul style="list-style-type: none"> ● Consider options to decrease the water demand of the project to reduce this risk to vegetation. Much of the water demand for the project is lost at the Tailings Storage Facility (TSF), so consideration of alternative TSF options is paramount – see issue # 5. ● Provide details of a monitoring program to quantify the

Attachment 2:
Current results of barrel leach tests

**Barrel Leach Tests
Laboratory Results
(after two rounds of testing)**

TNG AMD Barrel Number				B1	B3	B5	B7	B8
Type	Ore Material			Trailing Material		mixed Waste Material	Gabbro Waste Material	Granite Waste Material
Rain type	Simulated rainfall			Simulated rainfall		Simulated rainfall	Simulated rainfall	Simulated rainfall
TNG Sample Number	MPWS 17006			MPWS 17007		MPWS 17008	MPWS 17009	MPWS 17010
Sampling Date	8/05/2017			8/05/2017		8/05/2017	8/05/2017	8/05/2017
Days Since Start	109			109		109	109	109
Client - Matrix:	WATER	Sample Type:	REG	REG	REG	REG	REG	REG
Workgroup:	EP1704773	ALS Sample number:	EP1704773001	EP1704773002	EP1704773003	EP1704773004	EP1704773005	EP1704773006
Project name/number:	Mount Peake	Sample date:	8/05/2017	8/05/2017	8/05/2017	8/05/2017	8/05/2017	8/05/2017
		Client sample ID (Primary):	MPWS 17006	MPWS 17007	MPWS 17008	MPWS 17009	MPWS 17010	MPWS 17010
		Client sample ID (Secondary):						
		Sample Site:	Alice Springs	Alice Springs	Alice Springs	Alice Springs	Alice Springs	Alice Springs
Analyte grouping/Analyte	CAS Number	Units	LOR					
EA005P: pH by PC Titrator								
pH Value		pH Unit	0.01	8.05	7.39	7.39	8.12	8.11
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C		µS/cm	1	780	85	4450	1330	624
EA016: Calculated TDS (from Electrical Conductivity)								
Total Dissolved Solids (Calc.)		mg/L	1	507	55	2890	864	406
EA06S: Total Hardness as CaCO3								
Total Hardness as CaCO3		mg/L	1	71	25	1150	66	38
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	mg/L	1	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	mg/L	1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	mg/L	1	61	27	33	85	123
Total Alkalinity as CaCO3		mg/L	1	61	27	33	85	123
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	mg/L	1	207	8	604	343	98
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	mg/L	1	82	5	1110	144	46
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	mg/L	1	12	5	255	18	7
Magnesium	7439-95-4	mg/L	1	10	3	124	5	5
Sodium	7440-23-5	mg/L	1	148	8	547	281	132
Potassium	7/09/7440	mg/L	1	21	7	51	14	14
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	mg/L	0.001	<0.001	<0.001	<0.001	0.006	0.011
Beryllium	7440-41-7	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	mg/L	0.001	0.019	0.003	0.112	0.007	0.019
Cadmium	7440-43-9	mg/L	0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001
Chromium	7440-47-3	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	7440-48-4	mg/L	0.001	0.003	<0.001	0.002	<0.001	<0.001
Copper	7440-50-8	mg/L	0.001	<0.001	<0.001	0.006	0.01	0.003
Lead	7439-92-1	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	mg/L	0.001	<0.001	0.003	0.013	<0.001	0.001
Nickel	7440-02-0	mg/L	0.001	0.011	<0.001	0.005	<0.001	<0.001
Selenium	7782-49-2	mg/L	0.01	<0.01	<0.01	0.01	<0.01	<0.01
Vanadium	7440-62-2	mg/L	0.01	0.06	0.02	<0.01	0.05	<0.01
Zinc	7440-66-6	mg/L	0.005	0.006	<0.005	0.025	<0.005	0.012
Boron	7440-42-8	mg/L	0.05	1.03	0.08	0.42	0.66	0.22
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	mg/L	0.1	0.2	0.1	0.6	1.1	3.6
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	mg/L	0.01	0.06	0.07	0.06	0.07	0.06
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	0.07
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	mg/L	0.01	<0.01	<0.01	5.98	2.29	0.19
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N		mg/L	0.01	<0.01	<0.01	5.98	2.29	0.26
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	mg/L	0.01	0.02	<0.01	<0.01	0.02	<0.01
EN05S: Ionic Balance								
Total Anions		meq/L	0.01	7.84	0.85	44.5	12.9	5.8
Total Cations		meq/L	0.01	8.4	1.02	48	13.9	6.86
Ionic Balance		%	0.01	3.42	----	3.76	3.69	8.41

**Barrel Leach Tests
Laboratory Results
(after two rounds of testing)**

TNG AMD Barrel Number				B1	B3	B5	B7	B8
Type	Ore Material			Trailing Material		mixed Waste Material	Gabbro Waste Material	Granite Waste Material
Rain type	Simulated rainfall			Simulated rainfall		Simulated rainfall	Simulated rainfall	Simulated rainfall
TNG Sample Number	MPWB 17011			MPWB 17012		MPWB 17013	MPWB 17014	MPWB 17015
Sampling Date	16/08/2017			16/08/2017		16/08/2017	16/08/2017	16/08/2017
Days Since Start	209			209		209	209	209
Client - Matrix:	WATER	Sample Type:	REG	REG	REG	REG	REG	REG
Workgroup:	EP1704773	ALS Sample number:	EP1708816001	EP1708816002	EP1708816003	EP1708816004	EP1708816005	EP1708816005
Project name/number:	Mount Peake	Sample date:	16/08/2017	16/08/2017	16/08/2017	16/08/2017	16/08/2017	16/08/2017
		Client sample ID (Primary):	MPWB 17011	MPWB 17012	MPWB 17013	MPWB 17014	MPWB 17015	MPWB 17015
		Client sample ID (Secondary):						
		Sample Site:	Alice Springs	Alice Springs	Alice Springs	Alice Springs	Alice Springs	Alice Springs
Analyte grouping/Analyte	CAS Number	Units	LOR					
EA005P: pH by PC Titrator								
pH Value		pH Unit	0.01	8.5	7.78	7.67	8.35	8.25
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C		µS/cm	1	278	443	3250	734	315
EA016: Calculated TDS (from Electrical Conductivity)								
Total Dissolved Solids (Calc.)		mg/L	1	181	288	2110	477	205
EA065: Total Hardness as CaCO3								
Total Hardness as CaCO3		mg/L	1	18	93	648	23	18
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	mg/L	1	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	mg/L	1	5	<1	<1	4	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	mg/L	1	70	34	56	157	98
Total Alkalinity as CaCO3		mg/L	1	74	34	56	161	98
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	mg/L	1	52	136	637	159	25
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	mg/L	1	9	29	666	24	8
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	mg/L	1	4	19	144	6	4
Magnesium	7439-95-4	mg/L	1	2	11	70	2	2
Sodium	7440-23-5	mg/L	1	47	45	425	138	62
Potassium	7/09/7440	mg/L	1	8	12	47	6	7
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-39-2	mg/L	0.001	<0.001	<0.001	<0.001	0.01	0.01
Beryllium	7440-41-7	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	mg/L	0.001	0.002	0.014	0.038	0.004	0.006
Cadmium	7440-43-9	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	0.001
Cobalt	7440-48-4	mg/L	0.001	<0.001	<0.001	0.002	<0.001	<0.001
Copper	7440-50-8	mg/L	0.001	<0.001	<0.001	0.006	0.006	0.003
Lead	7439-92-1	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	mg/L	0.001	<0.001	0.004	0.006	<0.001	<0.001
Nickel	7440-02-0	mg/L	0.001	0.003	<0.001	0.004	<0.001	<0.001
Selenium	7782-49-2	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Vanadium	7440-62-2	mg/L	0.01	0.05	0.01	<0.01	0.07	<0.01
Zinc	7440-66-6	mg/L	0.005	<0.005	<0.005	0.019	<0.005	<0.005
Boron	7440-42-8	mg/L	0.05	0.45	0.15	0.47	0.47	0.11
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	mg/L	0.1	0.1	0.2	0.8	1	2.3
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	mg/L	0.01	0.02	0.02	0.02	0.02	0.03
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	mg/L	0.01	0.04	0.01	8.04	0.68	0.25
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N		mg/L	0.01	0.04	0.01	8.04	0.68	0.25
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	0.02
EN055: Ionic Balance								
Total Anions		meq/L	0.01	2.82	4.33	33.2	7.2	2.7
Total Cations		meq/L	0.01	2.61	4.12	32.6	6.62	3.24
Ionic Balance		%	0.01	---	2.5	0.81	4.22	9.01

Attachment 3:
Sample location data

Mount Peak - AMD 2016 Laboratory samples



SAMPLE_NO	BATCH	SR	RESULTS DATE	Column1	LAB BATCH	HOLE_ID	EASTING (MGA53)	NORTHING (MGA53)	FROM (m)	TO (m)	WTHG_CODE	LITH SIMPLE	WASTE/ORE/TAILS	SAM_TYPE
AMD1001	1	EB1615818	27/06/16	Stage 1, 2A & 2B	AD15192227/327301	12MPCRC044	322.578	7.605.600	0	15	SOX	QSP	W	RC_COMP
AMD1002	1	EB1615818	27/06/16	Stage 1 & 2A	AD15192227/327301	12MPCRC045	322.503	7.605.705	0	15	SOX	QSP	W	RC_COMP
AMD1003	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC046	322.603	7.605.705	0	12	SOX	QSP	W	RC_COMP
AMD1004	1	EB1615818	27/06/16	Stage 1 & 2A	AD15192227/327301	12MPCRC047	322.449	7.605.800	0	11	SOX	QSP	W	RC_COMP
AMD1005	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC049	322.536	7.605.900	0	10	SOX	QSP	W	RC_COMP
AMD1006	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC051	322.680	7.605.900	0	12	SOX	QSP	W	RC_COMP
AMD1007	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC052	322.549	7.606.000	0	10	SOX	QSP	W	RC_COMP
AMD1008	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC055	322.536	7.606.100	0	8	SOX	QSP	W	RC_COMP
AMD1009	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC056	322.636	7.606.100	0	8	SOX	QSP	W	RC_COMP
AMD1010	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC060	322.560	7.606.300	0	7	SOX	QSP	W	RC_COMP
AMD1011	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC060	322.560	7.606.300	8	14	MOX	GABBRO	W	RC_COMP
AMD1012	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC069	322.438	7.606.400	0	8	SOX	QSP	W	RC_COMP
AMD1013	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC081	322.557	7.606.500	0	7	SOX	QSP	W	RC_COMP
AMD1014	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC081	322.557	7.606.500	7	17	MOX	GABBRO	W	RC_COMP
AMD1015	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC082	322.662	7.606.500	0	7	SOX	QSP	W	RC_COMP
AMD1016	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC082	322.662	7.606.500	7	22	MOX	GABBRO	W	RC_COMP
AMD1017	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC082	322.662	7.606.500	22	37	WOX	GABBRO	W	RC_COMP
AMD1018	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC085	322.801	7.606.600	0	8	SOX	QSP	W	RC_COMP
AMD1019	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC085	322.801	7.606.600	10	30	MOX	GABBRO	W	RC_COMP
AMD1020	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC085	322.801	7.606.600	30	54	FR	GABBRO	W	RC_COMP
AMD1021	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC087	322.690	7.606.700	0	7	SOX	QSP	W	RC_COMP
AMD1022	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC087	322.690	7.606.700	7	27	MOX	GABBRO	W	RC_COMP
AMD1023	1	EB1615818	27/06/16	Stage 1, 2A & 2B	AD15192227/327301	12MPCRC087	322.690	7.606.700	27	44	FR	GABBRO	W	RC_COMP
AMD1024	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC091	322.875	7.606.800	0	7	SOX	QSP	W	RC_COMP
AMD1025	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC091	322.875	7.606.800	7	22	MOX	GABBRO	W	RC_COMP
AMD1026	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC091	322.875	7.606.800	22	37	FR	GABBRO	W	RC_COMP
AMD1027	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC092	322.650	7.606.900	0	7	SOX	QSP	W	RC_COMP
AMD1028	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC092	322.650	7.606.900	7	27	MOX	GABBRO	W	RC_COMP
AMD1029	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC092	322.650	7.606.900	27	47	FR	GABBRO	W	RC_COMP
AMD1030	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC097	322.850	7.607.100	0	5	SOX	QSP	W	RC_COMP
AMD1031	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC097	322.850	7.607.100	5	25	MOX	GABBRO	W	RC_COMP
AMD1032	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC097	322.850	7.607.100	25	40	FR	GABBRO	W	RC_COMP
AMD1033	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC097	322.850	7.607.100	40	55	FR	GABBRO	W	RC_COMP
AMD1034	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC100	322.950	7.607.300	0	5	SOX	QSP	W	RC_COMP
AMD1035	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC100	322.950	7.607.300	5	20	SOX	GABBRO	W	RC_COMP
AMD1036	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC100	322.950	7.607.300	20	35	FR	GABBRO	W	RC_COMP
AMD1037	1	EB1615818	27/06/16	Stage 1 & 2A	AD15192227/327301	12MPCRC102	322.814	7.606.900	0	5	SOX	QSP	W	RC_COMP
AMD1038	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC102	322.814	7.606.900	5	20	SOX	GABBRO	W	RC_COMP
AMD1039	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	12MPCRC102	322.814	7.606.900	20	40	WOX	GABBRO	W	RC_COMP
AMD1040	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC023	322.600	7.605.800	0	10	SOX	QSP	W	RC_COMP
AMD1041	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC025	322.450	7.606.000	0	12	SOX	QSP	W	RC_COMP
AMD1042	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC026	322.675	7.606.200	0	12	SOX	QSP	W	RC_COMP
AMD1043	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC027	322.475	7.606.200	0	9	SOX	QSP	W	RC_COMP
AMD1044	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC027	322.475	7.606.200	9	14	SOX	GABBRO	W	RC_COMP
AMD1045	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC029	322.690	7.606.400	0	10	SOX	QSP	W	RC_COMP
AMD1046	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC029	322.690	7.606.400	12	22	MOX	GABBRO	W	RC_COMP
AMD1047	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC029	322.690	7.606.400	22	32	FR	GABBRO	W	RC_COMP
AMD1048	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC035	322.660	7.606.800	0	7	SOX	QSP	W	RC_COMP
AMD1049	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC035	322.660	7.606.800	7	27	MOX	GABBRO	W	RC_COMP
AMD1050	1	EB1615818	27/06/16	Stage 1, 2A & 2B	AD15192227/327301	11MPCRC035	322.660	7.606.800	27	47	FR	GABBRO	W	RC_COMP
AMD1051	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC037	322.750	7.607.000	0	5	SOX	QSP	W	RC_COMP
AMD1052	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC037	322.750	7.607.000	5	15	SOX	GABBRO	W	RC_COMP
AMD1053	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC037	322.750	7.607.000	15	25	WOX	GABBRO	W	RC_COMP
AMD1054	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC037	322.750	7.607.000	25	35	FR	GABBRO	W	RC_COMP
AMD1055	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC037	322.750	7.607.000	35	45	FR	GABBRO	W	RC_COMP
AMD1056	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC041	322.850	7.607.400	0	3	SOX	QSP	W	RC_COMP
AMD1057	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC041	322.850	7.607.400	5	15	MOX	GRN	W	RC_COMP
AMD1058	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC041	322.850	7.607.400	15	25	WOX	GRN	W	RC_COMP
AMD1059	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC041	322.850	7.607.400	25	35	FR	GRN	W	RC_COMP
AMD1060	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC041	322.850	7.607.400	35	45	FR	GRN	W	RC_COMP
AMD1061	1	EB1615818	27/06/16	Stage 1 & 2A	AD15192227/327301	11MPCRC041	322.850	7.607.400	45	48	WOX	FLT	W	RC_COMP
AMD1062	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC042	322.350	7.606.200	0	8	SOX	QSP	W	RC_COMP
AMD1063	1	EB1615818	27/06/16	Stage 1 & 2A	AD15192227/327301	11MPCRC042	322.350	7.606.200	10	20	MOX	GRN	W	RC_COMP
AMD1064	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC042	322.350	7.606.200	20	32	FR	GRN	W	RC_COMP
AMD1065	1	EB1615818	27/06/16	Stage 1 & 2A	AD15192227/327301	11MPCRC042	322.350	7.606.200	32	36	MOX	FLT	W	RC_COMP
AMD1066	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC042	322.350	7.606.200	36	50	WOX	GABBRO	W	RC_COMP
AMD1067	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	11MPCRC042	322.350	7.606.200	50	60	FR	GABBRO	W	RC_COMP
AMD1068	1	EB1615818	27/06/16	Stage 1 & 2A	AD15192227/327301	11MPCRC042	322.350	7.606.200	60	70	FR	GABBRO	W	RC_COMP
AMD1069	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	09MPCRC111	322.402	7.606.598	0	6	SOX	QSP	W	RC_COMP
AMD1070	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	09MPCRC111	322.402	7.606.598	6	16	MOX	GRN	W	RC_COMP
AMD1071	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	09MPCRC111	322.402	7.606.598	16	26	WOX	GRN	W	RC_COMP
AMD1072	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	09MPCRC111	322.402	7.606.598	26	36	FR	GRN	W	RC_COMP
AMD1073	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	09MPCRC111	322.402	7.606.598	36	46	FR	GRN	W	RC_COMP
AMD1074	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	09MPCRC111	322.402	7.606.598	46	56	FR	GRN	W	RC_COMP
AMD1075	1	EB1615818	27/06/16	Stage 1, 2A & 2B	AD15192227/327301	09MPCRC111	322.402	7.606.598	56	62	MOX	FLT	W	RC_COMP
AMD1076	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	09MPCRC113	322.853	7.607.228	0	4	SOX	QSP	W	RC_COMP
AMD1077	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	09MPCRC013	322.853	7.607.228	4	10	MOX	GABBRO	W	RC_COMP
AMD1078	1	EB1615818	27/06/16	Stage 1	AD15192227/327301	09MPCRC013	322.853	7.607.						



SAMPLE_NO	BATCH	SR	RESULTS DATE	Column1	LAB BATCH	HOLE_ID	EASTING (MGA53)	NORTHING (MGA53)	FROM (m)	TO (m)	WTHG_CODE	LITH SIMPLE	WASTE/ORE/AI LS	SAM_TYPE
AMD1107	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC011	322.402	7.606.598	80	100	FR	ORE	0	RC_COMP
AMD1108	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC011	322.402	7.606.598	100	120	FR	ORE	0	RC_COMP
AMD1109	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC011	322.402	7.606.598	120	136	FR	ORE	0	RC_COMP
AMD1110	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC013	322.853	7.607.228	31	40	FR	ORE	0	RC_COMP
AMD1111	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC013	322.853	7.607.228	40	60	FR	ORE	0	RC_COMP
AMD1112	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC013	322.853	7.607.228	60	80	FR	ORE	0	RC_COMP
AMD1113	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC014	322.951	7.607.399	40	60	FR	ORE	0	RC_COMP
AMD1114	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC014	322.951	7.607.399	60	80	FR	ORE	0	RC_COMP
AMD1115	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC023	322.600	7.605.800	10	22	MOX	ORE	0	RC_COMP
AMD1116	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC023	322.600	7.605.800	22	40	WOX	ORE	0	RC_COMP
AMD1117	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC023	322.600	7.605.800	40	51	FR	ORE	0	RC_COMP
AMD1118	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC025	322.450	7.606.000	22	35	MOX	ORE	0	RC_COMP
AMD1119	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC025	322.450	7.606.000	35	55	FR	ORE	0	RC_COMP
AMD1120	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC026	322.675	7.606.200	20	32	MOX	ORE	0	RC_COMP
AMD1121	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC027	322.475	7.606.200	14	25	MOX	ORE	0	RC_COMP
AMD1122	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC027	322.475	7.606.200	25	39	WOX	ORE	0	RC_COMP
AMD1123	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC027	322.475	7.606.200	39	60	FR	ORE	0	RC_COMP
AMD1124	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC027	322.475	7.606.200	60	80	FR	ORE	0	RC_COMP
AMD1126	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC027	322.475	7.606.200	80	100	FR	ORE	0	RC_COMP
AMD1127	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC027	322.475	7.606.200	100	120	FR	ORE	0	RC_COMP
AMD1128	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC029	322.690	7.606.400	60	80	FR	ORE	0	RC_COMP
AMD1129	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC029	322.690	7.606.400	80	100	FR	ORE	0	RC_COMP
AMD1130	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC029	322.690	7.606.400	100	113	FR	ORE	0	RC_COMP
AMD1131	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC029	322.690	7.606.400	113	126	FR	ORE	0	RC_COMP
AMD1132	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC035	322.660	7.606.800	50	70	FR	ORE	0	RC_COMP
AMD1133	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC035	322.660	7.606.800	70	90	FR	ORE	0	RC_COMP
AMD1134	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC035	322.660	7.606.800	90	102	FR	ORE	0	RC_COMP
AMD1135	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC037	322.750	7.607.000	50	70	FR	ORE	0	RC_COMP
AMD1136	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC037	322.750	7.607.000	70	88	FR	ORE	0	RC_COMP
AMD1137	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC041	322.850	7.607.400	50	70	FR	ORE	0	RC_COMP
AMD1138	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC041	322.850	7.607.400	70	90	FR	ORE	0	RC_COMP
AMD1139	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC041	322.850	7.607.400	90	110	FR	ORE	0	RC_COMP
AMD1140	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC042	322.350	7.606.200	70	90	FR	ORE	0	RC_COMP
AMD1141	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC042	322.350	7.606.200	90	105	FR	ORE	0	RC_COMP
AMD1142	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	11MPRC044	322.350	7.606.200	105	120	FR	ORE	0	RC_COMP
AMD1143	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC042	322.578	7.605.600	15	25	MOX	ORE	0	RC_COMP
AMD1144	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC045	322.503	7.605.705	17	33	MOX	ORE	0	RC_COMP
AMD1145	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC045	322.503	7.605.705	33	45	FR	ORE	0	RC_COMP
AMD1146	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC046	322.603	7.605.705	13	23	MOX	ORE	0	RC_COMP
AMD1147	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC049	322.536	7.605.900	11	30	MOX	ORE	0	RC_COMP
AMD1148	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC049	322.536	7.605.900	30	47	FR	ORE	0	RC_COMP
AMD1149	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC051	322.680	7.605.900	14	30	WOX	ORE	0	RC_COMP
AMD1151	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC051	322.680	7.605.900	30	48	FR	ORE	0	RC_COMP
AMD1152	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC052	322.549	7.606.000	12	29	MOX	ORE	0	RC_COMP
AMD1153	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC055	322.536	7.606.100	10	30	MOX	ORE	0	RC_COMP
AMD1154	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC055	322.536	7.606.100	30	50	FR	ORE	0	RC_COMP
AMD1155	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC056	322.636	7.606.100	12	24	WOX	ORE	0	RC_COMP
AMD1156	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC060	322.560	7.606.300	30	50	FR	ORE	0	RC_COMP
AMD1157	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC060	322.560	7.606.300	50	70	FR	ORE	0	RC_COMP
AMD1158	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC069	322.438	7.606.400	10	30	WOX	ORE	0	RC_COMP
AMD1159	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC069	322.438	7.606.400	30	50	FR	ORE	0	RC_COMP
AMD1160	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC069	322.438	7.606.400	50	70	FR	ORE	0	RC_COMP
AMD1161	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC069	322.438	7.606.400	70	90	FR	ORE	0	RC_COMP
AMD1162	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC069	322.438	7.606.400	90	110	FR	ORE	0	RC_COMP
AMD1163	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC081	322.557	7.606.500	24	36	WOX	ORE	0	RC_COMP
AMD1164	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC081	322.557	7.606.500	36	50	FR	ORE	0	RC_COMP
AMD1165	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC082	322.662	7.606.500	40	60	FR	ORE	0	RC_COMP
AMD1166	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC082	322.662	7.606.500	60	80	FR	ORE	0	RC_COMP
AMD1167	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC082	322.662	7.606.500	80	94	FR	ORE	0	RC_COMP
AMD1168	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC082	322.662	7.606.500	94	108	FR	ORE	0	RC_COMP
AMD1169	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC085	322.801	7.606.600	54	68	FR	ORE	0	RC_COMP
AMD1170	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC085	322.801	7.606.600	68	82	FR	ORE	0	RC_COMP
AMD1171	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC087	322.690	7.607.700	44	60	FR	ORE	0	RC_COMP
AMD1172	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC091	322.875	7.606.800	40	60	FR	ORE	0	RC_COMP
AMD1173	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC092	322.650	7.606.900	50	70	FR	ORE	0	RC_COMP
AMD1174	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC092	322.650	7.606.900	70	90	FR	ORE	0	RC_COMP
AMD1176	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC097	322.850	7.607.100	64	80	FR	ORE	0	RC_COMP
AMD1177	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC097	322.850	7.607.100	80	96	FR	ORE	0	RC_COMP
AMD1178	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC100	322.950	7.607.300	40	55	FR	ORE	0	RC_COMP
AMD1179	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	12MPRC102	322.814	7.606.900	50	70	FR	ORE	0	RC_COMP
AMD1180	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC008	322.401	7.606.190	26	40	WOX	ORE	0	RC_COMP
AMD1181	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC008	322.401	7.606.190	40	60	FR	ORE	0	RC_COMP
AMD1182	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC008	322.401	7.606.190	60	80	FR	ORE	0	RC_COMP
AMD1183	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC008	322.401	7.606.190	80	100	FR	ORE	0	RC_COMP
AMD1184	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC010	322.601	7.606.403	100	120	FR	ORE	0	RC_COMP
AMD1185	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC010	322.601	7.606.403	40	60	FR	ORE	0	RC_COMP
AMD1186	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC010	322.601	7.606.403	60	80	FR	ORE	0	RC_COMP
AMD1187	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC010	322.601	7.606.403	80	100	FR	ORE	0	RC_COMP
AMD1188	2	EB1615819	29/06/16	Stage 1	AD16071486/308070	09MPRC010	322.601	7.606.403	100	120	FR	ORE	0	



SAMPLE_NO	BATCH	SR	RESULTS DATE	Column1	LAB BATCH	HOLE_ID	EASTING (MGA53)	NORTHING (MGA53)	FROM (m)	TO (m)	WTHG_CODE	LITH SIMPLE	WASTE/ORE/A	SAM_TYPE
AMD1224	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC072	322.525	7.606.400	70	90	FR	ORE	0	RC_COMP
AMD1226	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC072	322.525	7.606.400	90	110	FR	ORE	0	RC_COMP
AMD1227	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC072	322.525	7.606.400	110	124	FR	ORE	0	RC_COMP
AMD1228	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC083	322.812	7.606.500	54	70	FR	ORE	0	RC_COMP
AMD1229	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC083	322.812	7.606.500	70	90	FR	ORE	0	RC_COMP
AMD1230	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC083	322.812	7.606.500	90	110	FR	ORE	0	RC_COMP
AMD1231	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC084	322.450	7.606.600	35	50	WOX	ORE	0	RC_COMP
AMD1232	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC084	322.450	7.606.600	50	70	FR	ORE	0	RC_COMP
AMD1233	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC086	322.575	7.606.700	19	35	MOX	ORE	0	RC_COMP
AMD1234	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC086	322.575	7.606.700	35	50	FR	ORE	0	RC_COMP
AMD1235	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC094	322.864	7.606.900	34	56	FR	ORE	0	RC_COMP
AMD1236	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC095	322.875	7.607.000	34	46	FR	ORE	0	RC_COMP
AMD1237	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC098	322.925	7.607.200	66	80	FR	ORE	0	RC_COMP
AMD1238	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC099	322.850	7.607.300	20	40	MOX	ORE	0	RC_COMP
AMD1239	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC099	322.850	7.607.300	40	60	WOX	ORE	0	RC_COMP
AMD1240	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC099	322.850	7.607.300	60	80	FR	ORE	0	RC_COMP
AMD1241	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC099	322.850	7.607.300	80	100	FR	ORE	0	RC_COMP
AMD1242	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC099	322.850	7.607.300	100	116	FR	ORE	0	RC_COMP
AMD1243	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC101	322.900	7.607.400	26	40	WOX	ORE	0	RC_COMP
AMD1244	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC101	322.900	7.607.400	40	60	FR	ORE	0	RC_COMP
AMD1245	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC101	322.900	7.607.400	60	80	FR	ORE	0	RC_COMP
AMD1246	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC036	322.825	7.607.000	6	20	MOX	GABBRO	W	RC_COMP
AMD1247	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC036	322.825	7.607.000	20	34	WOX	GABBRO	W	RC_COMP
AMD1248	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC036	322.825	7.607.000	34	48	FR	GABBRO	W	RC_COMP
AMD1249	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	09MPRC020	322.604	7.606.796	6	22	MOX	GRN	W	RC_COMP
AMD1251	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC031	322.300	7.606.400	12	22	MOX	GRN	W	RC_COMP
AMD1252	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC031	322.300	7.606.400	22	36	FR	GRN	W	RC_COMP
AMD1253	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC031	322.300	7.606.400	36	52	FR	GRN	W	RC_COMP
AMD1254	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC031	322.300	7.606.400	52	68	FR	GRN	W	RC_COMP
AMD1255	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC039	322.725	7.607.200	4	14	MOX	GRN	W	RC_COMP
AMD1256	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC039	322.725	7.607.200	14	30	FR	GRN	W	RC_COMP
AMD1257	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC039	322.725	7.607.200	30	50	FR	GRN	W	RC_COMP
AMD1258	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC039	322.725	7.607.200	50	70	FR	GRN	W	RC_COMP
AMD1259	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC039	322.725	7.607.200	70	89	FR	GRN	W	RC_COMP
AMD1260	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC038	322.875	7.607.200	6	24	MOX	GABBRO	W	RC_COMP
AMD1261	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC038	322.875	7.607.200	24	40	WOX	GABBRO	W	RC_COMP
AMD1262	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC038	322.875	7.607.200	40	54	FR	GABBRO	W	RC_COMP
AMD1263	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC038	322.875	7.607.200	54	66	FR	GABBRO	W	RC_COMP
AMD1264	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC043	322.350	7.606.400	14	34	WOX	GRN	W	RC_COMP
AMD1265	2	EB1615820	04/07/16	Stage 1 & 2A	AD16071486/308070	12MPRC101	322.900	7.607.400	6	26	MOX	GABBRO	W	RC_COMP
AMD1266	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC098	322.925	7.607.200	4	22	MOX	GABBRO	W	RC_COMP
AMD1267	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC098	322.925	7.607.200	22	38	WOX	GABBRO	W	RC_COMP
AMD1268	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC098	322.925	7.607.200	38	53	FR	GABBRO	W	RC_COMP
AMD1269	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC098	322.925	7.607.200	53	66	FR	GABBRO	W	RC_COMP
AMD1270	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC093	322.764	7.606.900	6	26	MOX	GABBRO	W	RC_COMP
AMD1271	2	EB1615820	04/07/16	Stage 1, 2A & 2B	AD16071486/308070	12MPRC093	322.764	7.606.900	26	36	FR	GABBRO	W	RC_COMP
AMD1272	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC093	322.764	7.606.900	36	51	FR	GABBRO	W	RC_COMP
AMD1273	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC025	322.450	7.606.000	13	21	MOX	GABBRO	W	RC_COMP
AMD1274	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC095	322.875	7.607.000	7	20	MOX	GABBRO	W	RC_COMP
AMD1275	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC095	322.875	7.607.000	20	34	MOX	GABBRO	W	RC_COMP
AMD1277	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC094	322.864	7.606.900	5	20	MOX	GABBRO	W	RC_COMP
AMD1278	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC094	322.864	7.606.900	20	34	WOX	GABBRO	W	RC_COMP
AMD1279	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC028	322.300	7.606.200	14	40	WOX	GABBRO	W	RC_COMP
AMD1280	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC028	322.300	7.606.200	40	60	FR	GABBRO	W	RC_COMP
AMD1281	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC090	322.553	7.606.800	6	30	MOX	GABBRO	W	RC_COMP
AMD1282	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC090	322.553	7.606.800	30	50	WOX	GABBRO	W	RC_COMP
AMD1283	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC083	322.812	7.606.500	10	22	MOX	GABBRO	W	RC_COMP
AMD1284	2	EB1615820	04/07/16	Stage 1, 2A & 2B	AD16071486/308070	12MPRC083	322.812	7.606.500	22	36	FR	GABBRO	W	RC_COMP
AMD1285	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC083	322.812	7.606.500	36	54	FR	GABBRO	W	RC_COMP
AMD1286	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC080	322.599	7.606.450	10	30	WOX	GABBRO	W	RC_COMP
AMD1287	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC075	322.840	7.606.400	10	30	WOX	GABBRO	W	RC_COMP
AMD1288	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC075	322.840	7.606.400	30	46	FR	GABBRO	W	RC_COMP
AMD1289	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC073	322.574	7.606.400	10	28	MOX	GABBRO	W	RC_COMP
AMD1290	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC073	322.574	7.606.400	28	41	FR	GABBRO	W	RC_COMP
AMD1291	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC062	322.837	7.606.300	10	30	WOX	GABBRO	W	RC_COMP
AMD1292	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC060	322.560	7.606.300	14	30	WOX	GABBRO	W	RC_COMP
AMD1293	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC058	322.780	7.606.100	12	30	MOX	GABBRO	W	RC_COMP
AMD1294	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC048	322.408	7.605.900	10	28	MOX	GABBRO	W	RC_COMP
AMD1295	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	12MPRC048	322.408	7.605.900	28	44	FR	GABBRO	W	RC_COMP
AMD1296	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC043	322.350	7.606.400	34	54	FR	GABBRO	W	RC_COMP
AMD1297	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC043	322.350	7.606.400	54	74	FR	GABBRO	W	RC_COMP
AMD1298	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC043	322.350	7.606.400	74	90	FR	GABBRO	W	RC_COMP
AMD1299	2	EB1615820	04/07/16	Stage 1	AD16071486/308070	11MPRC028	322.300	7.606.200	60	80	FR	GABBRO	W	RC_COMP
AMD1301	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH011	322.548	7.605.800	20	21	MOX	ORE	0	DDH_1m
AMD1302	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH011	322.548	7.605.800	30	31	WOX	ORE	0	DDH_1m
AMD1303	3	EB1615512	23/06/16	Stage 1		12MPDDH011	322.548	7.605.800	40	41	FR	ORE	0	DDH_1m
AMD1304	3	EB1615512	23/06/16	Stage 1		12MPDDH011	322.548	7.605.800	50	51	FR	ORE	0	DDH_1m
AMD1305	3	EB1615512	23/06/16	Stage 1		12MPDDH011	322.548	7.605.800	60	61	FR	ORE	0	DDH_1m
AMD1306	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH012	322.453	7.605.900	30	31	FR	GABBRO		



SAMPLE_NO	BATCH	SR	RESULTS DATE	Column1	LAB BATCH	HOLE_ID	EASTING (MGA53)	NORTHING (MGA53)	FROM (m)	TO (m)	WTHG_CODE	LITH SIMPLE	WASTE/ORE/TAILS	SAM_TYPE
AMD1341	3	EB1615512	23/06/16	Stage 1		12MPDDH016	322.610	7.606.300	20	21	MOX	GABBRO	O	DDH_1m
AMD1342	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH016	322.610	7.606.300	30	31	FR	ORE	O	DDH_1m
AMD1343	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH016	322.610	7.606.300	40	41	FR	ORE	O	DDH_1m
AMD1344	3	EB1615512	23/06/16	Stage 1		12MPDDH016	322.610	7.606.300	50	51	FR	ORE	O	DDH_1m
AMD1345	3	EB1615512	23/06/16	Stage 1		12MPDDH016	322.610	7.606.300	60	61	FR	ORE	O	DDH_1m
AMD1346	3	EB1615512	23/06/16	Stage 1		12MPDDH016	322.610	7.606.300	70	71	FR	ORE	O	DDH_1m
AMD1347	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH016	322.610	7.606.300	80	81	FR	ORE	O	DDH_1m
AMD1348	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH016	322.610	7.606.300	90	91	FR	ORE	O	DDH_1m
AMD1349	3	EB1615512	23/06/16	Stage 1, 2A & 2B		12MPDDH016	322.610	7.606.300	100	101	FR	ORE	O	DDH_1m
AMD1350	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH016	322.610	7.606.300	110	111	FR	GABBRO	O	DDH_1m
AMD1351	3	EB1615512	23/06/16	Stage 1		12MPDDH016	322.610	7.606.300	120	121	FR	ORE	O	DDH_1m
AMD1352	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH016	322.610	7.606.300	130	131	FR	ORE	O	DDH_1m
AMD1353	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH016	322.610	7.606.300	140	141	FR	ORE	O	DDH_1m
AMD1354	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH017	322.374	7.606.300	20	21	MOX	ORE	O	DDH_1m
AMD1355	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH017	322.374	7.606.300	30	31	WOX	ORE	O	DDH_1m
AMD1356	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH017	322.374	7.606.300	40	41	FR	ORE	O	DDH_1m
AMD1357	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH017	322.374	7.606.300	50	51	FR	ORE	O	DDH_1m
AMD1358	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH017	322.374	7.606.300	60	61	FR	ORE	O	DDH_1m
AMD1359	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH017	322.374	7.606.300	100	101	FR	ORE	O	DDH_1m
AMD1360	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH017	322.374	7.606.300	130	131	FR	GABBRO	O	DDH_1m
AMD1361	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH017	322.374	7.606.300	160	161	FR	ORE	O	DDH_1m
AMD1362	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH018	322.651	7.606.400	80	81	FR	ORE	O	DDH_1m
AMD1363	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH018	322.651	7.606.400	120	121	FR	ORE	O	DDH_1m
AMD1364	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH019	322.548	7.606.400	70	71	FR	ORE	O	DDH_1m
AMD1365	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH019	322.548	7.606.400	130	131	FR	ORE	O	DDH_1m
AMD1366	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH020	322.450	7.606.500	70	71	FR	ORE	O	DDH_1m
AMD1367	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH020	322.450	7.606.500	130	131	FR	GABBRO	O	DDH_1m
AMD1368	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH021	322.552	7.606.600	40	41	FR	ORE	O	DDH_1m
AMD1369	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH021	322.552	7.606.600	80	81	FR	GABBRO	O	DDH_1m
AMD1370	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH022	322.651	7.606.600	60	61	FR	ORE	O	DDH_1m
AMD1371	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH022	322.651	7.606.600	70	71	FR	ORE	O	DDH_1m
AMD1372	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH023	322.717	7.606.800	60	61	FR	ORE	O	DDH_1m
AMD1373	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH023	322.717	7.606.800	110	111.2	FR	ORE	O	DDH_1m
AMD1374	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	50	51	FR	ORE	O	DDH_1m
AMD1375	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	70	71	FR	ORE	O	DDH_1m
AMD1376	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH021	322.552	7.606.600	19	20	MOX	GABBRO	W	DDH_1m
AMD1377	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH021	322.552	7.606.600	21	22	MOX	GABBRO	W	DDH_1m
AMD1378	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH021	322.552	7.606.600	23	24	MOX	GABBRO	W	DDH_1m
AMD1379	3	EB1615512	23/06/16	Stage 1, 2A & 2B		12MPDDH022	322.651	7.606.600	38	39	FR	GABBRO	W	DDH_1m
AMD1380	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH022	322.651	7.606.600	40	41	FR	GABBRO	W	DDH_1m
AMD1381	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH022	322.651	7.606.600	41	42	FR	GABBRO	W	DDH_1m
AMD1382	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH022	322.651	7.606.600	42	42	FR	GABBRO	W	DDH_1m
AMD1383	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH022	322.651	7.606.600	44	45	FR	GABBRO	W	DDH_1m
AMD1384	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH022	322.651	7.606.600	46	47	FR	GABBRO	W	DDH_1m
AMD1385	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH023	322.717	7.606.800	39	40	FR	GABBRO	W	DDH_1m
AMD1386	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH023	322.717	7.606.800	40	41	FR	GABBRO	W	DDH_1m
AMD1387	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH023	322.717	7.606.800	42	43	FR	GABBRO	W	DDH_1m
AMD1388	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH023	322.717	7.606.800	43	44	FR	GABBRO	W	DDH_1m
AMD1389	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH023	322.717	7.606.800	45	46	FR	GABBRO	W	DDH_1m
AMD1390	3	EB1615512	23/06/16	Stage 1, 2A & 2B		12MPDDH023	322.717	7.606.800	46	47	FR	GABBRO	W	DDH_1m
AMD1391	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH023	322.717	7.606.800	48	49	FR	GABBRO	W	DDH_1m
AMD1392	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH023	322.717	7.606.800	49	50	FR	GABBRO	W	DDH_1m
AMD1393	3	EB1615512	23/06/16	Stage 1		12MPDDH023	322.717	7.606.800	51	52	FR	GABBRO	W	DDH_1m
AMD1394	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH023	322.717	7.606.800	52	53	FR	GABBRO	W	DDH_1m
AMD1395	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	28	29	MOX	GABBRO	W	DDH_1m
AMD1396	3	EB1615512	23/06/16	Stage 1		12MPDDH024	322.825	7.607.200	29	30	MOX	GABBRO	W	DDH_1m
AMD1397	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	31	32	MOX	GABBRO	W	DDH_1m
AMD1398	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	32	33	MOX	GABBRO	W	DDH_1m
AMD1399	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	34	35	MOX	GABBRO	W	DDH_1m
AMD1400	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	36	37	MOX	GABBRO	W	DDH_1m
AMD1401	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	38	39	MOX	GABBRO	W	DDH_1m
AMD1402	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	40	41	WOX	GABBRO	W	DDH_1m
AMD1403	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	42	43	WOX	GABBRO	W	DDH_1m
AMD1404	3	EB1615512	23/06/16	Stage 1 & 2A		12MPDDH024	322.825	7.607.200	44	45	WOX	GABBRO	W	DDH_1m
AMD1405	3	EB1615512	23/06/16	Stage 1 & 2A		TAILSO01						TAILS	T	TAILS_NM
AMD1406	3	EB1615512	23/06/16	Stage 1 & 2A		TAILSO02						TAILS	T	TAILS_NM
AMD1407	3	EB1615512	23/06/16	Stage 1 & 2A		TAILSO03						TAILS	T	TAILS_NM
AMD1408	3	EB1615512	23/06/16	Stage 1 & 2A		TAILSO04						TAILS	T	TAILS_NM

Attachment 4:
In-pit bore water quality results

CERTIFICATE OF ANALYSIS

Work Order : **EP1710779**
Client : **TNG Limited**
Contact : Mr Kim Grey
Address : Lvl 1, 282 Rokeby Road
 Subiaco 6008
Telephone : ----
Project : Mount Peake
Order number : ----
C-O-C number : ----
Sampler : AARON MOSS
Site : ALICE SPRINGS
Quote number : EP/341/17
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 4
Laboratory : Environmental Division Perth
Contact : Customer Services EP
Address : 10 Hod Way Malaga WA Australia 6090
Telephone : +61-8-9209 7655
Date Samples Received : 29-Sep-2017 12:55
Date Analysis Commenced : 29-Sep-2017
Issue Date : 05-Oct-2017 20:20



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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Efua Wilson	Metals Chemist	Perth Inorganics, Malaga, WA
Indra Astuty	Instrument Chemist	Perth Inorganics, Malaga, WA
Jeremy Truong	Laboratory Manager	Perth Inorganics, Malaga, WA



General Comments

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

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

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

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

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

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

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

- EA016: Calculated TDS is determined from Electrical conductivity using a conversion factor of 0.65.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID		Boko's	Mt Peak Bore	----	----	----
Client sampling date / time		27-Sep-2017 11:45		27-Sep-2017 11:00		----	----	----
Compound	CAS Number	LOR	Unit	EP1710779-001	EP1710779-002	-----	-----	-----
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.45	6.78	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	8200	1590	----	----	----
EA016: Calculated TDS (from Electrical Conductivity)								
Total Dissolved Solids (Calc.)	----	1	mg/L	5330	1030	----	----	----
EA065: Total Hardness as CaCO3								
Total Hardness as CaCO3	----	1	mg/L	1780	238	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	186	16	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	186	16	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1120	108	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	2390	457	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	365	44	----	----	----
Magnesium	7439-95-4	1	mg/L	211	31	----	----	----
Sodium	7440-23-5	1	mg/L	1220	196	----	----	----
Potassium	7440-09-7	1	mg/L	53	18	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Boron	7440-42-8	0.05	mg/L	1.16	0.33	----	----	----
Barium	7440-39-3	0.001	mg/L	0.028	0.036	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	0.003	----	----	----
Manganese	7439-96-5	0.001	mg/L	0.002	0.202	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.002	0.006	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	0.115	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Boko's	Mt Peak Bore	----	----	----
Client sampling date / time				27-Sep-2017 11:45	27-Sep-2017 11:00	----	----	----	
Compound	CAS Number	LOR	Unit	EP1710779-001	EP1710779-002	-----	-----	-----	
				Result	Result	----	----	----	
EG020F: Dissolved Metals by ICP-MS - Continued									
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	----	----	----	
Zinc	7440-66-6	0.005	mg/L	<0.005	0.144	----	----	----	
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----	
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L	2.9	<0.1	----	----	----	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	0.64	0.03	----	----	----	
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	----	----	----	
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L	0.01	0.42	----	----	----	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	0.44	----	----	----	
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.01	1.59	----	----	----	
EN055: Ionic Balance									
Total Anions	----	0.01	meq/L	94.4	15.4	----	----	----	
Total Cations	----	0.01	meq/L	90.0	13.7	----	----	----	
Ionic Balance	----	0.01	%	2.41	5.92	----	----	----	

	Mercury	Chromium	Cobalt	Copper	Lead	Manganese	Arsenic	Nickel	Selenium	Beryllium	Vanadium	Zinc
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 99%				0.001	0.001	1.2	0.0008	0.008	0.005			0.0024
10 x ANZECC 2000 FW 99%				0.01	0.01	12	0.008	0.08	0.05			0.024
ANZECC 2000 Stock Watering	0.002	1	1	0.5	0.1		0.5	1	0.02			20
<i>ADWG 2015 Health</i>	<u>0.001</u>	<u>0.05</u>		<u>2</u>	<u>0.01</u>	<u>0.5</u>	<u>0.01</u>	<u>0.02</u>	<u>0.01</u>			
<i>ADWG 2015 Aesthetic</i>												<u>3</u>
10 x ADWG	0.01	0.5		20	0.1	5	0.1	0.2	0.1			30
Boko's	<0.0001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.002	<0.01	<0.001	<0.01	<0.005
Mt Peak Bore	<0.0001	<0.001	0.001	0.003	<u>0.115</u>	0.202	<0.001	0.006	<0.01	<0.001	<0.01	0.144

	Barium	Boron	Cadmium	pH Value	Total Alkalinity as CaCO3	Total Dissolved Solids (Calc.)	Electrical Conductivity @ 25°C	Fluoride	Chloride	Sulfate as SO4 - Turbidimetric	Reactive Phosphorus as P	Ammonia as N
Unit	mg/L	mg/L	mg/L	pH Unit	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 99%		0.09	0.00006									0.032
10 x ANZECC 2000 FW 99%		0.9	0.0006									0.32
ANZECC 2000 Stock Watering		5	0.01			4000		2		1000		
<i>ADWG 2015 Health</i>	<u>2</u>	<u>4</u>	<u>0.002</u>									
<i>ADWG 2015 Aesthetic</i>						<u>600</u>			<u>250</u>			<u>0.5</u>
10 x ADWG	20	40	0.02									
Boko's	0.028	1.16	<0.0001	7.45	186	5330	8200	2.9	<u>2390</u>	1120	0.01	<u>0.64</u>
Mt Peak Bore	0.036	0.33	<0.0001	6.78	16	<u>1030</u>	1590	<0.1	<u>457</u>	108	1.59	0.03

	Total Anions	Total Cations	Ionic Balance	Nitrate as N	Nitrite as N	Nitrite + Nitrate as N	Calcium	Magnesium	Sodium	Potassium	Total Hardness as CaCO3
Unit	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 99%				0.0038				1.2			
10 x ANZECC 2000 FW 99%				0.038				12			
ANZECC 2000 Stock Watering				90	9.1		1000				
<i>ADWG 2015 Health</i>				<u>11.29</u>				<u>0.5</u>			
<i>ADWG 2015 Aesthetic</i>								<u>0.1</u>	<u>180</u>		
10 x ADWG				112.9				5			
Boko's	94.4	90	2.41	0.01	<0.01	0.01	365	211	<u>1220</u>	53	1780
Mt Peak Bore	15.4	13.7	5.92	0.42	0.02	0.44	44	31	<u>196</u>	18	238