



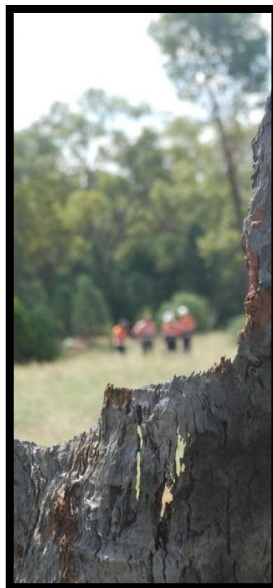
# TRITTON RESOURCES PTY LTD

ABN 88 100 095 494

## Response to Submissions

for the

# Avoca Tank Project



*Prepared by:*



**R.W. CORKERY & CO. PTY. LIMITED**

June 2016

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# Avoca Tank Project

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## 1. INTRODUCTION

This document has been prepared to respond to submissions received by the Bogan Shire Council (Council) following the public exhibition of an *Environmental Impact Statement* (EIS) accompanying an application for development consent made by Tritton Resources Pty Ltd (the Applicant) for the Avoca Tank Mine (the Proposal).

A separate submission was provided by Council and submissions were received from six government agencies. No public submissions were received. All submissions have been reproduced as **Appendix 1**. The following subsections paraphrase the submissions received and respond to the issues raised. The submissions are addressed in no particular order.

## 2. BOGAN SHIRE COUNCIL

### 2.1 INTRODUCTION

A submission was received from Bogan Shire Council on 3 December 2015 requesting a range of additional information and clarifications in order for Council to complete its assessment of the application. The following subsections include a summary of the requests and response to any issues raised.

### 2.2 PROJECT SITE

#### Summary of Submission

Council note that reference to a Project Site that covers an area of 18.6ha appears to be erroneous.

#### Response

The Applicant acknowledges this typographical error and confirms that the area within the Project Site boundary is approximately 1 846ha.

### 2.3 CURRENT MINING OPERATIONS

#### Summary of Submission

A range of additional information has been requested in relation to the concurrent operation of the Applicant's other mines within the locality. In summary, the following clarifications have been requested.

- Confirmation of the operations considered to constitute the Girilambone Copper Mine.
- Describe what mechanism exists to ensure that the two operations do not or cannot operate concurrently.
- Confirmation of traffic arrangements across the existing and proposed mining operations and the necessity of a road safety audit.

- Confirmation of access arrangement to ensure that access is able to be maintained from the proposed mine to the Murrawombie Copper Mine via the private haul road in the event that land associated with Larsens, North-East and Hartmans (ML1383) were disposed of.

## Response

The information requests have been addressed as follows.

1. The Girilambone Copper Mine has in the past referred to the combined output of the Murrawombie Copper Mine and the North East Copper Mine. This has led to some confusion and subsequently the Applicant has restricted references to the separate operation of the Murrawombie Copper Mine and the North East Copper Mine. However, references to the Girilambone Copper Mine remain in older documentation. It is also noted that Environment Protection Licence 4501 refers the combined operation of these two mines.
2. It should be noted that the Applicant considers that the ultimate limit on operations for the Proposal and the ongoing operation of the Murrawombie Copper Mine and the North East Copper Mine is the approved maximum transportation rate of 1 million tonnes (Mt) of ore per annum from these operations to the Applicant's Tritton Copper Mine for processing. Based on the projected output of the Murrawombie Copper Mine and the North East Copper Mine, the Applicant considers that this limit remains appropriate. Should it be determined that additional output is feasible from these mines, an application to modify the relevant development consent would be submitted to Council and the appropriate assessments completed.

The assertion that the ore material sourced from the proposed Avoca Tank Project would replace ore currently sourced from the Girilambone Copper Mine was not intended to infer that the operations would not operate concurrently. In order to ensure that output across the Applicants operations remains as efficient as possible, the operations would remain active and limited to a combined output of 1Mt per annum, consistent with the currently approved output. By limiting the output in this manner, the Applicant is maximising the efficient output of its operations while effectively managing potential impacts associated with the transportation of ore material within currently approved levels.

3. Traffic movements associated with the Proposal would remain within the limits currently approved for the operation of the Murrawombie Copper Mine and the North East Copper Mine. Therefore a traffic safety audit is not required.
4. The proposed haulage route for the Proposal would effectively replicate that used by the existing operation of the Murrawombie Copper Mine and the North East Copper Mine where it occurs on public roads (see Section 2.7 and Figure 2.7 of the EIS). It is acknowledged that this requires trucks to pass through land currently used for both of these operations. Should conditions require that either of these parcels of land be sold or otherwise made unavailable for use for the transportation of ore material, the Applicant would establish an alternative route



in consultation with Council and seek a modification to the relevant development consent (which would include any relevant assessments) at that time.

The Applicant has not yet developed a closure plan for the North East Copper Mine and rehabilitation activities are estimated to require a period of at least five years. The indicative mine life of the Proposal is four years (as presented in Section 2.3.5 of the EIS), indicating that the extraction of ore material associated with the Proposal would be completed before rehabilitation of the North East Mine is complete and Mining Lease 1383 relinquished. Regardless of the above, as the Applicant owns the land in question it can be reasonably assumed that no sale of land would be made if it were to in any way jeopardise the Applicant's remaining operations.

## **2.4 CUMULATIVE TRAFFIC MOVEMENTS**

### **Summary of Submission**

Council has requested clarification of a proposal referenced in the EIS for an increase in traffic movements associated with Girilambone Copper Mine from 3 to 14 movements per hour.

### **Response**

The assessment completed by Bridges Acoustics in October 2013 related to a proposal to permit truck movements during the evening and night on an occasional and intermittent basis from what was referred to in the report as the 'northern underground mining operations'. It is assumed this referred to the combined output of the Murrawombie Copper Mine and North East Copper Mine (although it is noted that operations at the Murrawombie Copper Mine were effectively suspended at this time). The increase from 3 to 14 traffic movements was incorrectly interpreted from this report and subsequently referred to in the noise impact assessment and repeated in the EIS. The actual assessment assumed that a worst-case scenario hour would result in 14 movements. Traffic counts undertaken for the assessment recorded 26 road train pass-by events over a period of approximately 7 hours and 48 minutes, an average of one pass-by every 18 minutes or 3.3 pass-by events per hour.

The modification referred to in the Bridges Acoustics report was submitted to Council on 25 July 2013 and approved on 12 November 2013 under Development Application 1995/006.

Although this reference was interpreted incorrectly in the noise impact assessment and EIS, the information recorded in the surveys completed by Bridges Acoustics and used by EMGA Mitchell McLennan (EMM) remains valid.

Approval exists for transportation of up to 1Mtpa from the combined output of the Murrawombie Copper Mine and North East Copper Mine operations to the Tritton Copper Mine. At an indicative capacity of 52t per two trailer road train and transportation operations on approximately 270 days per year, the approved average daily heavy vehicle movements is in the order of 140 movements per day (70 loads). The Applicant considers a combined output of 1Mtpa to be a reasonable limit to operations. Therefore, the heavy vehicle movements would remain consistent with the currently approved levels under the Proposal (and in conjunction with the Murrawombie Copper Mine and North East Copper Mine).

## 2.5 GREENHOUSE GASES

### Summary of Submission

Council has requested that the Applicant make reference to the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP) with regard to the assessment of greenhouse gas emissions and confirm the measures proposed to ensure that greenhouse gas emissions are minimised to the greatest extent possible.

### Response

Clause 14(1) (c) and 14(2) of the Mining SEPP states the following.

(1) Before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner, including conditions to ensure the following:

(c) that greenhouse gas emissions are minimised to the greatest extent practicable.

(2) Without limiting subclause (1), in determining a development application for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider an assessment of the greenhouse gas emissions (including downstream emissions) of the development, and must do so having regard to any applicable State or national policies, programs or guidelines concerning greenhouse gas emissions.

The primary source of greenhouse gas emissions from the Proposal would be generated by two main sources.

- Direct emissions from combustion of diesel fuel and LPG by equipment and ancillary buildings.
- Indirect emissions associated with:
  - the consumption of purchased electricity;
  - the extraction, production and transportation of diesel fuel and LPG;
  - electricity lost in delivery in the transmission and distribution network; and
  - employee travel.

The following three scopes (emission categories) of the greenhouse gas emitting sources of the Proposal have been defined in accordance with the *National Greenhouse Accounts Factors workbook* (DoE, 2015).

- Scope 1 Emissions.

These are the direct emissions from sources within the boundary of the Project Site such as the combustion of diesel and LPG by onsite equipment and where necessary in ancillary buildings. This would also include diesel fuel used for the transportation of ore material between the Project Site and the Tritton Copper Mine where it is processed.
- Scope 2 Emissions.

These are the indirect emissions from the consumption of purchased electricity by another organisation.

- Scope 3 Emissions.

These emissions are defined as all other indirect emissions that are a consequence of an organisation's activities but are not from sources owned, or controlled, by the organisation. In the case of the Proposal, this includes the indirect emissions which arise as a result of the extraction, production and transport of diesel fuel and LPG, electricity lost in transmission and emissions generated from employee travel.

The primary source of greenhouse gas emissions would result from the transportation activities required to transport ore material from the Project Site to the Tritton Copper Mine for processing. As the transportation of ore material will remain within the existing approved limit of 1Mt per annum it can reasonably be assumed that greenhouse gas emissions as a result of the Proposal would not increase beyond those currently approved for the Applicant's other approved mining operations. In summary, the cumulative level of transportation would remain within the approved level and therefore the associated greenhouse gas emissions would remain consistent with approved levels.

The remaining direct emissions would result from equipment used for underground mining operations and electricity use within buildings ancillary to mining operations (processing would occur at the Tritton Copper Mine). These operations would remain at a level consistent with current operations in order to ensure that total output does not exceed 1Mt per annum. In addition, electricity used indirectly in processing of ore material (at the Tritton Copper Mine) would remain consistent with currently approved levels and the approved production capacity of the processing facilities would not change.

The remaining sources of greenhouse gas emissions would be Scope 2 and Scope 3 emissions. While these would remain, they are indirect emissions and would remain minor in comparison with the total greenhouse gas emissions for NSW and Australia. It is therefore considered that greenhouse gas emissions would remain a minor residual impact of the Proposal.

Regardless of the above, the Applicant would continue to ensure potential greenhouse gas emissions are limited as much as practically possible through regular maintenance of its fleet of equipment and heavy vehicles and the continual improvement of electricity usage across all operations in line with best practice.

## 2.6 WATER USE AND LICENSING

### Summary of Submission

Council has requested that the Applicant confirm that the development can operate in accordance with the requirements of any Water Sharing Plan, specifically noting the relevance of the Water Sharing Plan for the *Macquarie Bogan Unregulated and Alluvial Water Sources 2012*.

### Response

Water access licences and the need for additional licences under the relevant water sharing plan have been addressed in Section 3.2 in response to the submission from the Department of Primary Industries – Water.

## 2.7 DRINKING WATER

### Summary of Submission

Council has requested that the Applicant confirm whether any potential impacts relating to water supply catchments would result from the Proposal.

### Response

The Project Site is located within the Macquarie-Bogan Catchment an area of approximately 92 000km<sup>2</sup>.

Drinking water for the town of Nyngan is supplied from a weir pond adjacent the town, located upstream of the Project Site. The villages of Girilambone and Coolabah have a raw water system comprising of a ground tank, overhead storage tank and a reticulation system. A ground tank at Wilga supplements this system for both villages. The Gongolgon Weir located approximately 100km north of the Project Site has a mean daily flow exceeds 700ML.

In the vicinity of the Project Site, water captured via overland flows is generally stored in on-farm storages and used, when available, for watering stock.

Due to the dry climate of the locality, the ephemeral nature of drainage lines and the presence of on-farm storages between the Project Site and the Bogan River, it is considered unlikely that the Proposal would impact drinking water quality or availability.

## 2.8 BUSH FIRE ASSESSMENT

### Summary of Submission

Council has requested that the bush fire assessment be undertaken in accordance with *Addendum: Appendix 3 of Planning for Bush Fire Protection (2010)*.

### Response

The assessment of bush fire hazard has been updated and is presented in **Table 1**.

**Table 1**  
**Bush fire Hazard Assessment**

Vegetation Classification	Slope	Distance to Vegetation	FDI	Bush Fire Attack Level
Semi-arid woodlands (Low Woodlands) – Shrubby sub formation	<5°	>15m	80	40

Source: Assessment based on RFS (2010) – Appendix 3 and AS359 2009

A Bush fire Attack level of 40 indicates a category in which radiant heat flux and potential flame contact could threaten building integrity. A deemed-to-satisfy outcome is achieved where the building is exposed to a radiant heat flux of less than or equal to 40kW/m<sup>2</sup> or a Bush Fire Attack Level of 40.

Based on this assessment, it is concluded that the management and mitigation measures presented in Section 4.12.3 would remain appropriate to ensure that bush fire-related risk remains low.

## 2.9 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

### Summary of Submission

Council has requested an assessment of the Proposal in the context of the objects of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

### Response

Section 10.2 of the Ecology Assessment, prepared by EnviroKey (2014) for the Proposal, includes an assessment of significance in accordance with the Significant Impact Criteria for Matters of National Environmental Significance. The EnviroKey assessment concluded that the proposed action is 'unlikely' to have a significant impact on threatened and migratory biota listed by the EPBC Act provided the mitigation measures are fully implemented.

The objects of the EPBC Act are as follows.

1. The objects of this Act are:
  - to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and
  - to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and
  - to promote the conservation of biodiversity; and
  - to provide for the protection and conservation of heritage; and
  - to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples; and
  - to assist in the co-operative implementation of Australia's international environmental responsibilities; and
  - to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and
  - to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.

EnviroKey (2014) concluded that it was unlikely that significant impacts would result from the Proposal on threatened or migratory species listed under the EPBC Act. However, impacts to threatened species that may occur in the vicinity of the Project Site cannot be completely ruled out. In order to ensure that these potential impacts are limited as much as practically possible, the Applicant has committed to preparation of the following management plans.

- *Pest Animal Management Plan*
- *Weed Management Plan*
- *Fauna Management Plan*
- *Threatened Species Monitoring Plan*

It is therefore concluded that all feasible measures would be implemented to ensure that the Proposal would not limit the achievement of the objects of the EPBC Act as they relate to matters of national environmental significance, ecologically sustainable development and the conservation of biodiversity.

The Proposal would not impact the protection and conservation of heritage nor modify any co-operative approach to the protection and management of the environment. It would not influence the recognition of the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity nor the use of indigenous peoples' knowledge for conservation purposes.

The Proposal would not limit the achievement of Australia's international environmental responsibilities.

Based on this assessment and the assessment undertaken by EnviroKey (2014) it is concluded that the Proposal would be unlikely to impact the achievement of the objects of the EPBC Act.

## **2.10 BIODIVERSITY OFFSET STRATEGY**

### **Summary of Submission**

Council requested more information relating to the OEH submission relating to offsetting of residual impacts to native vegetation.

### **Response**

This matter has been addressed in the response to the OEH submission provided in Section 5.2.

## **2.11 DEPARTMENT OF PRIMARY INDUSTRIES – WATER**

### **Summary of Submission**

Council requested more information relating to the information requested by DPI-Water.

### **Response**

This matter has been addressed in the response to the DPI - Water submission provided in Section 3.

## **3. DEPARTMENT OF PRIMARY INDUSTRIES - WATER**

### **3.1 INTRODUCTION**

The submission received from the Department of Primary Industries – Water (DPI-Water) requested additional information in order for DPI-Water to prepare and issue General Terms of Approval for the Proposal. The issues raised in the submission refer only to the groundwater assessment provided in the EIS, and the Groundwater Impact Assessment, prepared by Environmental Strategies (ES, 2014), included as Appendix 7 of the EIS. The issues raised are summarised in the subsections below and a response provided for each concern or request.

## 3.2 LICENSING

### Summary of Submission

The submission requests additional information regarding existing, linked and proposed water licensing requirements and evidence that the Applicant has considered the ability to purchase any additionally required water access entitlements.

### Response

The Applicant currently holds three Water Access Licences (WALs) to obtain water from the Macquarie and Cudgegong Regulated Rivers Water Source of the Water Sharing Plan of the same name, and a single WAL to obtain water from the Lower Bogan Unregulated River Water Source of the Water Sharing Plan for the *Macquarie Bogan Unregulated and Alluvial Water Sources 2012*. The details of these licences are as follows.

- WAL 9374 (High Security Licence) – 705ML.
- WAL 9375 (General Security Licence) – 210ML.
- WAL 9940 (Supplementary Licence) – 16ML.
- WAL 34407 (Unregulated River (Regulated Supply)) – 931ML.

In addition, the Applicant also holds three WALs to access groundwater from the Lachlan Fold Belt Murray Darling Basin (MDB) Groundwater Source of the Water Sharing Plan for the *NSW MDB Fractured Rock Groundwater Sources 2011*. The details of these licences are as follows.

- WAL 31049 (Aquifer Access) – 10ML – for the purposes of dewatering at the Pregnant Liquor Storage ponds to contain contamination.
- WAL 31090 (Aquifer Access) – 30ML – for the purposes of dewatering underground mine workings.
- WAL 31041 (Aquifer Access) – 304ML – for the purposes of dewatering as a result of open cut mining activities.

Annual inflow volumes at each of the Applicant's existing mining operations have been estimated using flow meters on pumping equipment used to dewater the various open cut and underground workings at each of the operations. The estimated annual groundwater inflow at each existing mining operation is presented in **Table 2** (reproduced from Table 4.12 in the EIS).

**Table 2**  
**Estimated Annual Groundwater Inflow**

Mining Operation	Measured Annual Inflow	
Larsons Open Cut/Underground	17ML	104ML
North East Open Cut	87ML	
Hartmans Open Cut	-	
Murrawombie Open Cut	130ML	
Tritton Underground Mine	111ML	

Source: Table 4.12 of the EIS and ES (2014) – After Table 13.

Each of the existing groundwater access licences is held within the Lachlan Fold Belt Murray Darling Basin (MDB) Groundwater Source, but under different works approvals. Following receipt of development consent, the Applicant would consult with DPI-Water regarding the best approach to manage groundwater inflows across all operations.

Based on the licenced limits to groundwater access above and estimated annual groundwater inflow in **Table 1**, the Applicant is licensed to dewater 344ML per annum and inflow has been estimated at approximately 345ML per annum. This indicates that the Applicant is currently exceeding licensed limits by approximately 1ML per annum. As the annual groundwater inflow is a conservative estimate based on average flow rates at each of the existing mining operations, the Applicant considers the volume of water removed from the groundwater setting to be conservative and most likely an over-estimation. Nonetheless, the results of the estimated annual inflow indicate that it is likely that additional groundwater entitlements would need to be purchased prior to interception of the aquifer underlying the Project Site.

The Applicant has committed to preparation of the *Water Management Plan* that would include a monitoring program to record any groundwater inflow as a result of aquifer interference from mining activities. Monitored records would be reported in the Annual Environmental Management Report (AEMR).

The Groundwater Impact Assessment (ES, 2014) predicted that inflow to the proposed Mine would reach a maximum of 111ML per annum by the final year of operations. By this time it is anticipated that operations at the North East Copper Mine would be completed and the existing level of dewatering would no longer be required. As a result, a significant portion of the existing annual inflow to the Larsons and North East Open Cut (104ML – see **Table 2**) would not be required. It should also be noted that the estimate of annual groundwater inflow to the Project Site is a conservative estimate based on operations at the Tritton Copper Mine, a much larger operation than the Proposal. To ensure that sufficient licenced water access entitlements are in place groundwater inflow to each of the existing operations would continue to be monitored and reported in the AEMR for each operation. If required, the entitlement could then be modified over time in accordance with the monitored groundwater inflow.

Information available from the NSW Water Register<sup>1</sup> indicates that the Lachlan Fold Belt Murray Darling Basin (MDB) Groundwater Source currently supplies 997 WALs (under the aquifer category) with a total share component of 67 803.7ML (based on 1ML per share). The required entitlement (111ML) represents 0.16% of the total water available from this water source. The Applicant is aware that as of 23 June 2015, approximately 379ML of allocated water was available for purchase at a price of between \$550 and \$1 000/ML.

### 3.3 ESTIMATES OF GROUNDWATER INFLOWS

#### Summary of Submission

DPI-Water has requested clarification of the methods used to estimate the groundwater inflows listed in Table 4.12 of the EIS.

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<sup>1</sup> <http://www.water.nsw.gov.au/water-licensing/registers>



## Response

As described in Section 2.2 above, annual groundwater inflow at each of the existing mining operations (see **Table 1**) was estimated using measures of flow rate on the pumping equipment used to dewater the open cut pit and underground workings at each of the operations.

These volumes were extrapolated to provide an annual estimate. This approach to estimating inflow is considered appropriate as it uses the existing inflow rate to estimate an annual rate, which takes into account the expected increase of groundwater inflow as the mining operations reach a greater depth.

## 3.4 NUMERICAL MODELLING

### Summary of Submission

DPI-Water has requested clarification of the numerical modelling referred to in the Groundwater Impact Assessment (p1-35 of Appendix 7 of the EIS).

### Response

This submission concerns the interpretation of the term ‘numerical modelling’ used in the Groundwater Impact Assessment (ES, 2014). Environmental Strategies describe the modelling used in Section 13.3 of the Groundwater Impact Assessment as:

“quantitative numerical modelling (both steady state and time variant) using empirical/analytical equations.”

DPI Water has interpreted this approach as simple analytical modelling and has requested further clarification of any strictly numerical models used. No additional modelling, other than that presented in the Groundwater Impact Assessment (ES, 2014), has been completed.

It should be noted that Attachment 1 of the DPI-Water submission states that the approach to assessment of drawdown impacts and dewatering volumes (pit inflows) is adequate. From this comment it is inferred that the submission relates to the use of terminology rather than the adequacy of the assessment completed and that no additional modelling is required.

## 3.5 GROUNDWATER MONITORING AND MITIGATION PLAN

### Summary of Submission

The submission notes the proposed impact may exceed the Level 1 minimal impact considerations of the Aquifer Interference Policy at two private bores. The submission requests that the Proposal include make good provisions to supply water to any impacted users and a conceptual monitoring and mitigation plan be included for addressing water access impacts at these two bores.

### Response

Section 3.2.1 of the Aquifer Interference Policy states the following with regards to exceedance of the Level 1 minimal impact considerations:

“...where an activity’s predicted impacts are greater than the Level 1 minimal impact considerations, but these predicted impacts exceed the Level 1 thresholds by no more than the accuracy of an otherwise robust model, then the project will be considered as having impacts that are within the range of acceptability, with extra monitoring and potential mitigation or remediation required during operation, should the project be approved.”

The submission acknowledges that there is no robust model to confirm the accuracy of the proposed impacts. As such, and in accordance with the Aquifer Interference Policy, the Applicant proposes to monitor potential impacts at surrounding private water bores. The groundwater monitoring program would be included in the *Water Management Plan* that would be prepared, within 3 months of receipt of approval, in consultation with DPI-Water.

The groundwater monitoring program would be developed to adequately assess any impacts at surrounding private bores and may involve implementation of additional monitoring bores, if required. It is expected that the *Water Management Plan* would include a series of trigger response mechanisms that would direct notification of private bore owners, mitigation measures and potential make good provisions should these be considered necessary. The Applicant anticipates that potential make good provisions may include:

- deepening and re-equipping of the affected bores; or
- provision of an alternative water supply such as from the Applicant’s licenced surface water supply infrastructure.

## 4. ENVIRONMENT PROTECTION AUTHORITY

### 4.1 INTRODUCTION

The Environment Protection Authority (EPA) has determined that it is able to issue an Environment Protection Licence (EPL) for the Proposal and has provided General Terms of Approval (GTAs) for the Project. The GTAs include a range of site-specific conditions as well as mandatory conditions that are included in all EPLs in NSW.

The Applicant agrees with the majority of the recommended conditions. Conditions that are considered unnecessary or that are considered to require modification are detailed in the following subsections. The Applicant respectfully requests that the EPA consider revising the GTAs based on the information provided below.

### 4.2 METEOROLOGICAL MONITORING STATION

#### Summary of Submission

Condition M2 of the EPA GTAs describes the requirement to monitor the following meteorological parameters.

- Rainfall.
- Wind speed and direction.
- Air temperature.
- Sigma theta.

Further to this, Condition L6.4 requires that data recorded by a meteorological station installed on site must be used to determine meteorological conditions and Condition A3 nominates an on-site weather station as EPA identification point 1.

## **Response**

The Applicant's mining operations within the Bogan Local Government Area have been active since development of the Murrawombie Copper Mine in 1992. Each mine operates under development consent and an EPL. To date, there has been no requirement to install a weather monitoring station at any of the existing operations nor has it been necessary to report on meteorological conditions. In addition, during the 23 years of operations, there has not been a single recorded noise complaint.

Furthermore, the results of the Noise Impact Assessment prepared by EMGA Mitchell McLennan (EMM, 2014 see Appendix 8 of the EIS) indicate that the Proposal would result in noise impacts less than the project-specific noise criteria ( $LA_{eq15mins}$  of 35dB), at all assessed residences.

The Applicant currently monitors rainfall at the Murrawombie Copper Mine and the Tritton Copper Mine (located approximately 6.5km to the south and 24km to the southwest of the Project Site, respectively). In addition, several Bureau of Meteorology (BOM) weather monitoring stations are located in relatively close proximity to the Project Site as follows

- Nyngan Airport Automated Weather Station (Station Number 51039), located approximately 45km southeast of the Project Site (temperature, humidity and wind).
- Girilambone (Wongala) Station (Station Number 151158), located approximately 13km to the southwest of the Project Site (rainfall).

It is proposed that these stations would be suitable to provide meteorological data that would supplement rainfall records from the nearby mining operations.

Given that the closest residences, namely R1, R2 and R3, are located approximately 5.0km, 5.0km and 2.4km from the proposed mine, that there been no recorded noise complaints in 23 years of mining operations and the fact that EMM (2014) determined that noise emissions associated with the Proposed Modification would be less than the relevant criteria at all residences, the Applicant considers monitoring of meteorological conditions at the Project Site to be an unnecessary and expensive imposition. It is therefore requested that all conditions referring to the installation of a weather monitoring station and on-site monitoring of meteorological conditions be removed from the EPA GTAs.

## 4.3 WATER MANAGEMENT PLAN

### Summary of Submission

Condition O3 and O4 of the EPA GTAs require that a *Soil and Water Management Plan* and a *Stormwater Management Scheme* be prepared and implemented.

### Response

The Statement of Commitments, provided as Appendix 4 of the EIS, described the Applicants commitment to prepare a *Water Management Plan*. That plan would be consistent with the requirements of the above documents. It is therefore requested that Condition O3 and Condition O4 be modified to reflect the Applicant's commitment to preparation of a single *Water Management Plan*.

## 4.4 WASTE ROCK MANAGEMENT PLAN

### Summary of Submission

Condition O6.1 of the EPA GTAs requires that the Applicant prepare and implement a Waste Rock Management Plan to document procedures for the management of Potentially Acid Forming (PAF) materials and to prevent potential pollution of water resources.

### Response

The Applicant agrees with the need for a plan to guide management of waste rock at the Project Site. A *Waste Rock Characterisation and Management Plan* was prepared by the Applicant in June 2012 for use at its other mining operations and reviewed and updated in January 2016. That plan would be further updated to include procedures for the management of PAF materials within the Project Site.

## 5. OFFICE OF ENVIRONMENT AND HERITAGE

### 5.1 INTRODUCTION

The submission received from the NSW Office of Environment and Heritage (OEH) considers that the EIS does not meet the Secretary's Environmental Assessment Requirements (originally provided as Director General's Requirements) for the Proposal. The Department's primary concern related to the need to offset residual impacts to native vegetation. The OEH concerns are summarised in the following subsection and a response provided that outlines the Applicant's approach to addressing the issue.

### 5.2 BIODIVERSITY OFFSET STRATEGY

#### Summary of Submission

The OEH has indicated that that the Proposal should incorporate an offset for the unavoidable biodiversity impacts associated with removal of 34ha of native vegetation and 38 hollow-bearing trees.

## Response

The Applicant acknowledges the residual impact to approximately 34ha of native vegetation and 38 hollow-bearing trees. However it is noted that the assessment undertaken by EnviroKey (2014) concluded that a biodiversity offset strategy was not required based on the measures taken to first avoid and then mitigate the potential impacts to native vegetation. Mitigation measures specific to the Project Site include the following.

- Minimisation of the area of disturbance.
- Avoidance of areas of key habitat for the Cobar Greenhood Orchid.
- Implementation of the following management plans.
  - *Pest Animal Management Plan*
  - *Weed Management Plan*
  - *Fauna Management Plan*
  - *Threatened Species Monitoring Plan*
- Retention of those sections of the Project Site that would not be disturbed by the Proposal (approximately 1 812ha) for the existing land use, namely intermittent agriculture.

Additional mitigation measures that are standard operational controls also implemented at the Applicant's other existing operations include the following.

- Clearly mark-out the proposed disturbance footprint boundaries and identify vegetation to be cleared.
- Implement a hollow-bearing tree pre-clearance survey where a qualified professional inspects all hollows and immediate surrounds for any species prior to clearing activities. If any fauna is identified, these would be relocated to areas outside of the proposed disturbance footprint prior to clearing.
- Ensure machinery required for the Proposal remains on existing vehicular access tracks or within the proposed disturbance footprint, where practicable. Where this is not possible, machinery would be manoeuvred to avoid sapling or remaining canopy trees wherever possible.
- Place felled canopy trees in adjacent vegetation areas outside of the proposed disturbance footprint to improve existing habitats.
- Eradicate any identified noxious weed and other weed material encountered, ensuring that the weed is destroyed and/or removed using appropriate methods to ensure weeds do not spread into the remainder of the Project Site.
- Install sediment and erosion control structures, where appropriate.
- Stabilise exposed soils to prevent potential erosion.

Appendix 6 of EnviroKey (2014) provides a protocol for the removal of hollow-bearing trees, where required, to minimise the potential impacts to resident fauna such as microchiropteran bats. This protocol would be implemented through the *Fauna Management Plan*.

It should be noted that the Proposal would not be carried out in respect of land that is, or is part of, critical habitat or is likely to result in significant impacts to any threatened species, population or ecological community or its habitat currently listed within the *Threatened Species Conservation Act 1995*. Therefore a Species Impact Statement would not be required and the concurrence of the Chief Executive of OEH is not necessary. As such, the submission provided by the OEH does not represent general terms of approval but a recommendation only.

At the time of writing, Council does not have an offsetting policy for local development. It is therefore at the discretion of the approval authority to assess the requirements for offsetting based on the significance of the residual impacts presented. Should a biodiversity offset be a conditional requirement of any development consent, the Applicant would commission an appropriately qualified ecological specialist to determine a location for a suitable Biodiversity Offset Area and commence the necessary assessments to secure this area for the purpose of biodiversity conservation. This process would be undertaken in consultation with Council and any relevant government agencies.

## **6. TRADE & INVESTMENT – RESOURCES AND ENERGY**

### **6.1 INTRODUCTION**

The Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy (DRE) support the proposed Avoca Tank Project and provided recommendations for conditions to be included in any development consent.

### **6.2 REHABILITATION MANAGEMENT PLAN / MINING OPERATION PLAN**

#### **Summary of Submission**

DRE recommend that Council include within the conditions of any consent a requirement to prepare a *Rehabilitation Management Plan / Mining Operation Plan* (MOP) in consultation with DRE, OEH, Department of Planning and Environment, DPI Water, EPA and Council and in accordance with the relevant guidelines. DRE proposed that the MOP be submitted to the Secretary of DTIRIS within 3 months of approval.

#### **Response**

The Applicant recognises the need for a MOP that incorporates rehabilitation planning and management. To that end Section 2.13 of the EIS provides a proposed rehabilitation hierarchy in accordance with *ESG3: Mining Operations Plan (MOP) Guidelines*. As described in Section 2.13 of the EIS, proposed rehabilitation activities would be described in the MOP and submitted to DRE for approval following the issue of development consent and prior to the commencement of on-site activities.

## 6.3 EXPLORATION ACTIVITIES

DRE advised that exploration activities must be notified and approved by DRE prior to commencement and the relevant due diligence and environmental assessment reporting provided to the Department. All exploration activities are to be documented in the Annual Environmental Management Report.

### Response

The Applicant notes that exploration operations would be ancillary activities to the proposed Mine. As a result, the Applicant would continue to notify and report on exploration activities in accordance with DRE requirements. However, the Applicant contends that the further approvals under the EP&A Act would not be required.

## 7. ROADS AND MARITIME SERVICES

### 7.1 INTRODUCTION

Roads and Maritime Services do not object to the proposed Avoca Tank Project and provided recommendations for a condition to be included in the development consent.

### 7.2 CODE OF CONDUCT FOR TRANSPORTATION ACTIVITIES

#### Summary of Submission

RMS have recommended that a condition of consent be included requiring the preparation and implementation of the Driver's Code of Conduct relating to the transport of materials on public roads.

#### Response

A condition of approval for a recent modification to development consent 4/98 (relating to the Tritton Copper Mine) required that a Driver's Code of Conduct be implemented for all operations involving the transport of waste rock material on public roads. All relevant employees or contractors are required to sign and abide by this Driver's Code of Conduct (reproduced as **Appendix 2**).

Following receipt of development consent for the proposed Avoca Tank Mine, the Applicant would extend the existing Driver's Code of Conduct to cover all construction and operational transport activities required under the Proposal.

## 8. HERITAGE COUNCIL OF NSW

### 8.1 INTRODUCTION

A submission on the Avoca Tank Project was provided by the Heritage Council of NSW (Heritage Council) on 12 August 2015. The submission notes that the Proposal does not affect any item listed on the State Heritage Register and that the Heritage Assessment prepared by Onsite CHM adequately addressed archaeology.

## 8.2 DUE DILIGENCE HERITAGE MANAGEMENT

### Summary of Submission

The Heritage Council submission notes the potential for unforeseen archaeological impacts associated with excavation activities. The submission recommends preparation of a due diligence heritage management response strategy to document response protocols and personnel induction processes.

### Response

The Applicant notes that the Heritage Council is satisfied that the Aboriginal cultural heritage assessment undertaken for the EIS has adequately addressed known Aboriginal cultural heritage at the Project Site.

The Applicant does not consider that a stand-alone heritage management response strategy is necessary given the comprehensive nature of archaeological field surveys completed by OnSite CHM for the Proposal and input provided for the assessment by representatives of the Nyngan Local Aboriginal Land Council, Bogan Aboriginal Corporation and the Ngemba/Ngiyampaa Native Title Claim group. The assessment completed by OnSite CHM concluded that Aboriginal occupation was sparsely distributed across the Project Site and indicative of low intensity use of the landscape by Aboriginal people.

Notwithstanding this, the Applicant is aware of the potential for the unknown or unexpected discovery of items or sites of Aboriginal cultural heritage significance during earthworks. The Applicant's existing operations currently operate in accordance with a Cultural Heritage Management Plan (reproduced as **Appendix 3**). This document would be updated following development approval to incorporate operations under the Proposal.

Section 15 of the Cultural Heritage Management Plan includes protocols for management of unknown or unexpected items or sites of Aboriginal cultural heritage significance.



## REFERENCES

**Bridges Acoustics, 2013.** *Road Train Noise Assessment.* Document prepared on behalf of Tritton Resources Pty Limited.

**EMGA Mitchell McLennan (EMM), 2014.** *Avoca Tank Project Noise Impact Assessment.* Document prepared on behalf of Tritton Resources Pty Limited.

**EnviroKey, 2014.** *Avoca Tank Ecology Assessment..* Document prepared on behalf of Tritton Resources Pty Limited.

**Environmental Strategies (ES), 2014.** *Avoca Tank Groundwater Assessment* Document prepared on behalf of Tritton Resources Pty Limited.

**International Network on Acid Prevention (INAP), 2009.** *Global Acid Rock Drainage Guide (GARD Guide).* Document prepared by Golder Associates on behalf of INAP, June 2009.

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# Appendices

(Total No. of pages including blank pages = 62)

- Appendix 1 Submissions
- Appendix 2 Approved Driver's Code of Conduct
- Appendix 3 Approved Cultural Heritage Management Plan - Tritton Mines



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# Appendix 1

# Submissions

(Total No. of pages including blank pages = 28)

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*“Comfortable Country Living”*

Ref: DA2015/004

3 December 2015

Tritton Resources  
C/- R W Corkery & Co Pty Limited  
62 Hill Street  
ORANGE NSW 2800

Attention: Nicholas Warren via email: [nick@rwcorkery.com](mailto:nick@rwcorkery.com)

Dear Nicolas

**RE: DA 2015/004 – AVOCA TANK PROJECT**

Reference is made to your application for the proposed Avoca Tank Project and the environmental impact statement prepared to support the application.

Geolyse, on behalf of Council, have completed an assessment of the documentation, noting that a number of matters are outstanding by reference to comments received from regulatory stakeholders.

The assessment of the proposal documentation has revealed that the information submitted contains a number of areas where clarification is required. The following information is required before Council can finalise assessment of the application:

- a) The EIS states at Section 1.3 that the project site covers an area of 18.6 hectares. This appears to be incorrect, please confirm the correct land area.
- b) The EIS states at various locations that the winding down of operations at the Girilambone Copper Mine will coincide with the development of the Avoca Tank mine, and that impacts (including traffic and greenhouse gas emissions) will therefore remain stable.
  - a. Please confirm which operations are considered to constitute the Girilambone Copper Mine (bearing in mind Council's recent approval to enable the expansion of operations at the Murrawombie Mine)
  - b. Please either describe what mechanism exists before Council to ensure that the two operations do not or cannot operate concurrently or alternatively, please revise the assessment to include an assessment of the two operations operating concurrently.
  - c. As per b., if an updated traffic assessment is required, please also provide the road safety audit identified via the SEARs;
  - d. Please confirm what, if any, legal arrangements are proposed to ensure that access is able to be maintained from Avoca Tank to Murrawombie via the private haul road in the event that land associated with Larsens, North-East and Hartmans (ML1383) were disposed of.

Telephone: (02) 6835 9000  
Facsimile: (02) 6835 9011  
Email: [admin@bogan.nsw.gov.au](mailto:admin@bogan.nsw.gov.au)  
[www.bogan.nsw.gov.au](http://www.bogan.nsw.gov.au)  
ABN: 68 886 242 083

Address all  
communications to:  
The General Manager  
PO Box 221  
Nyngan NSW 2825

Council Chambers  
81 Cobar Street  
Nyngan  
New South Wales  
Australia

- c) Section 4.5.4.2 specifies that an application is currently before Council proposing an increase in traffic movements associated with Girilambone Copper Mine from 3 to 14 movements per hour. Please clarify the status of this application. If that application is to still intended to proceed it will be necessary to provide an updated traffic assessment (or clarification of the existing assessment) to confirm the cumulative impact of this proposed increase in movements and the proposed movements associated with the Avoca Tank operations
- d) Please provide additional clarification in respect of clause 14(1)(c) and 14(2) of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* to confirm the measures proposed to ensure that greenhouse gas emissions are minimised to the greatest extent possible.
- e) Please provide a description of measures proposed to ensure the development can operate in accordance with the requirements of any Water Sharing Plan, specifically noting the relevance of the Water Sharing Plan for the Macquarie Bogan Unregulated and Alluvial Water Sources 2012.
- f) Please confirm, for the avoidance of doubt, whether the surface waters draining from the site are part of an important water supply catchment, or what impacts the proposed development might have on surface water supplies downstream and provide any applicable mitigation measures that may be required to offset or reduce any impacts.
- g) The bush fire assessment provided appears to have been completed by reference to the methodology outlined in the former Appendix 3 of Planning for Bush Fire Protection 2006. This was updated in 2010 to reflect the revisions to Australian Standard 3959. Please provide an updated assessment addressing the requirements of Addendum: Appendix 3 to PBFP (2010).
- h) Please provide an assessment of the project in the context of the objects of the Environment Protection and Biodiversity Conservation Act 1999.
- i) We understand that NSW Office of Environment and Heritage have identified that a biodiversity offset strategy is required. Please confirm the status of this matter.
- j) We understand Department of Primary Industries (Water) has requested additional information. Please confirm the status of this request.

This request for additional information is made under clause 54 of the Environmental Planning and Assessment Regulations 2000.

Please provide the additional information within 21 days of the date of this letter being no later than **24 December 2015**.

Should you wish to discuss the above further, please contact either Kayla Volker at Bogan Shire Council on 6835 9000 or David Walker at Geolyse on 6393 5000.

Regards,



Kayla Volker  
Senior Development and Environment Officer





Contact: Tim Baker  
 Phone: 02 6841 7403  
 Fax: 02 6884 0096  
 Email: Tim.Baker@dpi.nsw.gov.au

The General Manager  
 Bogan Shire Council  
 PO Box 221  
 NYNGAN NSW 2825

Our ref: ER22616  
 File No:  
 Your Ref: 2015/004

Dear Mr Francis

**Re: Development Proposal Underground Mine Tritton Resources Pty Ltd – Notification of Development Application DA 2015/004**

Reference is made to your recent referral dated 18<sup>th</sup> March 2015 regarding the above integrated development. An initial review of the Environmental Impact Statement indicates that additional information relevant to issuing the General Terms of Approval is needed in order to complete the assessment. The Office of Water requests that Council stop the clock.

The following additional information is requested with detailed comments in Attachment 1.

- Section 4.4.7 refers generally to licensing requirements however no detail is provided on existing work approvals, linked water access licenses (WALs) and water take figures. Further detail is requested to confirm existing approvals for groundwater interception, the water take requirements and the entitlements held in linked water access licenses (WALs). Where additional entitlement is required, detail is requested on whether adequate entitlement is available in other WALs held by the proponent or whether the proponent has considered the ability to purchase the required entitlement.
- Clarification is requested on the methods used to estimate the groundwater inflows listed in Table 4.12 of the EIS. The Office of Water advises that adequate water entitlement needs to be held to account for water taken whether it is for consumptive use or incidentally by an aquifer interference activity.
- Clarification is requested of the numerical modelling referred to on page 1-35 of Appendix 7 of the EIS as no detail of this model is provided elsewhere in the report.
- A conceptual groundwater monitoring and mitigation plan is requested to understand the proposed measures to monitor and address potential impacts due to the aquifer interference activity. The estimated impact on 2 private bores exceeds the Level 1 minimal impact considerations of the Aquifer Interference Policy, hence make good provisions are requested to be included in the monitoring and mitigation plan in an unlikely event of impact. Section 4.4.8 refers to monitoring of existing bores but further detail is requested to support how this will monitor the predicted impacts of the proposed activity and that the current bores will not become obsolete due to drawdown impacts.

2

Should you have any further queries in relation to this submission or wish to discuss further please do not hesitate to contact Tim Baker on (02) 6841 7403.

Yours sincerely



**Mitchell Isaacs**  
**Manager Strategic Stakeholder Liaison**  
**15 April 2015**

**ATTACHMENT 1**

**NSW Office of Water Detailed Comments –  
Tritton Underground Mine DA2015/004**

**Groundwater Assessment**

- Due to the nature of groundwater occurrence in the fractured rock aquifers (LFB) at this location, the impacts from mine inflows are considered to be of low risk to the quantity and quality of groundwater. NOW considers that the assessment of drawdowns impacts and dewatering volumes (pit inflows) through analytical methods and through comparisons with nearby mines in the same type of aquifers are adequate.
- Table 4.12 of the EIS provides estimates of groundwater inflows at each of the proponents operations. Clarification is requested on the relevant work approvals and linked water access licenses to confirm the current license arrangement and entitlements to account for the current and predicted water take.
- Clarification is requested on the methods used to estimate the groundwater inflows in Table 4.12 of the EIS.
- There are a range of pit dewatering volumes estimated in the report. It is recommended the proponent obtain sufficient annual water entitlement to at least a middle to high range of water take to account for any unforeseen larger mine inflows.
- The estimated impact on the identified two private bores exceeds the Level 1 minimal impact consideration of the Aquifer Interference Policy. NOW acknowledges that there is no robust model used to estimate the impacts on the existing users and the estimates provided are believed to be over estimated due to poor connectivity of aquifers in the fractured rocks. It is therefore recommended that the proposal includes a make good provision to supply water to the impacted users in an unlikely event of impact and a proposal for a groundwater monitoring and mitigation plan.
- The impact to aquifer and Groundwater Dependent Ecosystems are identified and adequately addressed.
- The Office of Water database has the following licence information for groundwater take at the Tritton and Girilambone sites.

Work Approval	WAL	Entitlement	Site
80WA716055	WAL31041	304 units	Girilambone Pits (Murrumbidgee Larsens & NE Pit)
80WA716044	WAL31090	30 units	Tritton excavation/TSF bore
80WA716017	WAL31049	10 units	Girilambone - PLS Ponds

**End of Attachment A**

Protection of the Environment Operations Act 1997

## General Terms of Approval - Issued

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Notice No: 1531800

The General Manager  
PO BOX 386  
HERMIDALE NSW 2831

Attention: Mr John Miller

Notice Number 1531800  
File Number S15/22025  
Date 21-Jul-2015

Re: "Avoca Tank Project"

### Issued pursuant to Section 91A(2) Environmental Planning and Assessment Act 1979

I refer to the development application and accompanying information provided for the Avoca Tank Project received by the Environment Protection Authority (EPA) on 25 May 2015.

The EPA has reviewed the information provided and has determined that it is able to issue a licence for the proposal, subject to a number of conditions. The applicant will need to make a separate application to EPA to obtain this licence prior to scheduled development works or activities commencing.

The general terms of approval for this proposal are provided at Attachment A. If Bogan Shire Council (Council) grants development consent for this proposal these conditions should be incorporated into the consent.

These general terms relate to the development as proposed in the documents and information currently provided to EPA. In the event that the development is modified either by the applicant prior to the granting of consent or as a result of the conditions proposed to be attached to the consent, it will be necessary to consult with EPA about the changes before the consent is issued. This will enable EPA to determine whether its general terms need to be modified in light of the changes.

Attachment B contains mandatory conditions which are attached to all Environment Protection Licences (EPL).

If you have any questions, or wish to discuss this matter further please contact Ramya Gowda on 6883 5306.

Protection of the Environment Operations Act 1997

## **General Terms of Approval - Issued**

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Notice No: 1531800

Yours sincerely

A handwritten signature in black ink, appearing to read 'Bradley Tanswell', written over a horizontal dotted line.

**Bradley Tanswell**  
Acting Unit head Far West Operations  
Environment Protection Licence  
(by Delegation)

Protection of the Environment Operations Act 1997

## General Terms of Approval - Issued

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Notice No: 1531800

### Attachment A - Avoca Tank Project

#### Administrative conditions

##### **A1. Information supplied to the EPA**

A1.1 Except as expressly provided by these general terms of approval, works and activities must be carried out in accordance with the proposal contained in:

- the development application DA 2015-004 submitted to EPA on 25 May 2015; and
- Environmental Impact Statement (EIS) for Avoca Tank Project submitted to EPA on 25 May 2015 relating to the development;

##### **A2. Fit and Proper Person**

A2.1 The applicant must, in the opinion of the EPA, be a fit and proper person to hold a licence under the Protection of the Environment Operations Act 1997, having regard to the matters in s.83 of that Act.

##### **A3. Discharges to Air**

A3.1 Location of monitoring/discharge points and areas

The following point(s) referred to in the table are identified in this licence for the purpose of monitoring and/or the settling of limits for discharge of pollutants from the plant.

EPA identification number	Type of monitoring point	Description of location
1	Weather monitoring	Weather station on mine site

*Note: the monitoring requirements may be modified by the EPA subject to ongoing review of license condition and monitoring results.*

#### Limit conditions

##### **L1. Pollution of waters**

L.1.1 Except as may be expressly provided by a licence under the Protection of the Environment Operations Act 1997 in relation of the development, section 120 of the Protection of the Environment Operations Act 1997 must be complied with in and in connection with the carrying out of the development.

Protection of the Environment Operations Act 1997

## **General Terms of Approval - Issued**

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Notice No: 1531800

### **L5. Waste**

**L5.1** The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1997.

**L5.2** This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence under the Protection of the Environment Operations Act 1997.

### **L6. Noise Limit**

**L6.1** Noise generated at the premises must not exceed the noise limits in the table below.

Location	Time Period	Noise level dB(A) (LAeq (15 min))
All residences	Day	35
	Evening	35
	Night	35

**L6.2** For purpose of condition L6.1;

- Day is defined as the period from 7:00 am to 6:00 pm Monday to Saturday and 8:00am to 6:00 pm Sunday and Public Holidays.

**L6.3** The noise limits set out in condition L6.1 apply under all meteorological conditions except for the following:

- wind speed greater than 3 metres/second at 10 metres above ground level.
- stability category F temperature inversion condition and wind speed greater than 2 metres/second at 10 metres above ground level; or
- stability category G temperature inversion conditions.

**L6.4** For the purpose of condition L6.3:

- Data recorded by a meteorological station installed on site must be used to determine meteorological conditions; and
- Temperature inversion condition (stability category) are to be determined by the sigma-theta method referred to in Part E4 of appendix E to the NSW Industrial Noise Policy.

**L6.5** To determine compliance:

- with the Leq (15 min) noise limit in condition L6.1, the noise measurement equipment must be located:
  - approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
  - within 30 metres of a dwelling facade, but not closer than 3m, where any dwelling on the property is situated more than 30 m from the property boundary closest to the premises or, where applicable; and
  - within approximately 50 m of the boundary of a National Park or a nature reserve.

Protection of the Environment Operations Act 1997

## General Terms of Approval - Issued

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Notice No: 1531800

- b. with the LA(1 minute) noise limits in condition L6.1, the noise measurement equipment must be located within 1 metre of a dwelling facade;
- c. with the noise limits in condition L6.1, the noise measurement equipment must be located
  - at most affected point at a location where there is no dwelling at the location; or
  - at the most affected point within an area at a location prescribed by condition L6.5 (a).

L6.6 A non compliance of condition L6.1 will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by condition L6.1; and/or
- at a point other than the most affected point at a location.

L6.7 For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

### **L7. Blasting**

L7.1 Blasting at the premises is limited to the following on each day on which blasting is permitted or as otherwise approved in writing by the EPA:

- A maximum of 3 blasts per day. This condition does not apply to blasts that generate ground vibration of 0.5mm/s or less at any residence on privately owned land, or blasts required to ensure the safety of the site or its workers.

### **Overpressure**

L7.2 The overpressure level from blasting operations on the premises must not:

Exceed 115dB (Lin Peak) for more than 5% of the total number of blasts over a period of 12 months; and

Exceed 120dB (Lin Peak) at any time,

The air blast overpressure values stated above apply when the measurements are performed with equipment having a lower cut-off frequency of 2Hz or less. If the instrumentation has a higher cut off frequency then a correction of 5dB should be assessed to the measured value. Equipment with a lower cut-off frequency exceeding 10Hz should not be used for the purpose of measuring air blast overpressure.

### **Ground vibration (ppv)**

L7.3 Ground vibration peak particle velocity from the blasting operations at the premises must not:

Exceed 5mm/s for more than 5% of the total number of blasts over a period of 12 months; and

Exceed 10mm/s at any time,

when measured at any point within 1 metre of any affected residential boundary or other noise sensitive location such as a school or hospital.



Protection of the Environment Operations Act 1997

## General Terms of Approval - Issued

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Notice No: 1531800

### **Operating conditions**

#### **01. Odour**

01.1 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

01.2 No condition of this licence identifies a potentially offensive odour for the purpose of Section 129 of the Protection of the Environment Operations Act 1997.

#### **02. Dust**

02.1 Activities occurring at the premises must be carried out in a manner that will minimise emissions of dust from the premises.

02.2 Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading.

02.3 The premises must be maintained in a condition which minimises or prevent the emission of dust from the premises.

#### **03. Stormwater/sediment control - Construction Phase**

03.1 An *Soil and Water Management Plan (SWMP)* must be prepared and implemented. The plan must describe the measures that will be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities. The *SWMP* should be prepared in accordance with the requirements for such plans outlined in *Managing Urban Stormwater: Soils and Construction* (available from the Department of Housing).

#### **04. Stormwater/sediment control - Operation Phase**

04.1 A Stormwater Management Scheme must be prepared for the development and must be implemented. Implementation of the Scheme must mitigate the impacts of stormwater run-off from and within the premises following the completion of construction activities. The Scheme should be consistent with the Stormwater Management Plan for the catchment. Where a Stormwater Management Plan has not yet been prepared the Scheme should be consistent with the guidance contained in *Managing Urban Stormwater: Council Handbook* (available from the EPA).

#### **05. Bunding requirement**

07.1 All above ground storage facilities containing flammable and combustible liquid must be bunded in accordance with Australian Standards AS 1940-200.

Protection of the Environment Operations Act 1997

## General Terms of Approval - Issued



Notice No: 1531800

### ***O6. Waste Rock Management Plan***

O6.1 The proponent must prepare and implement a Waste Rock Management Plan documenting procedures for the management of potentially Acid Forming Material to prevent pollution of water or groundwater and provide a copy to the EPA prior to commencement of operations.

### ***Monitoring and recording conditions***

#### ***M1 Monitoring records***

M1.1 The results of any monitoring required to be conducted by the EPA's general terms of approval, or a licence under the Protection of the Environment Operations Act 1997, in relation to the development or in order to comply with the load calculation protocol must be recorded and retained as set out in conditions M1.2 and M1.3.

M1.2 All records required to be kept by the licence must be:

in a legible form, or in a form that can readily be reduced to a legible form;

kept for at least 4 years after the monitoring or event to which they relate took place; and

produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected: the date(s) on which the sample was taken;

the time(s) at which the sample was collected;

the point at which the sample was taken; and

the name of the person who collected the sample.

#### ***M2 Requirement to Monitor Weather***

M2.1 For each monitoring point specified in the table below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.

##### Weather - Monitoring Point 1 - Weather Station Location on the Mine Site

Parameter	Units of measure	Frequency	Averaging period	Sampling Method
Rainfall	mm	Continuous	24 hour	AM - 4
Wind speed and direction	m/s & degrees	Continuous	15 minute	AM-2 and AM-4
Air Temperature	Degrees (C)	Continuous	15 minute	AM-4
Sigma theta	Degrees (C)	Continuous	15 minute	Am-2 and AM-4

Protection of the Environment Operations Act 1997

## General Terms of Approval - Issued

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Notice No: 1531800

### ***M4. Testing methods - concentration limits***

**M4.1** Monitoring for the concentration of a pollutant emitted to the air required to be conducted by the EPA's general terms of approval, or a licence under the Protection of the Environment Operations Act 1997, in relation to the development or in order to comply with a relevant local calculation protocol must be done in accordance with:

any methodology which is required by or under the POEO Act 1997 to be used for the testing of the concentration of the pollutant; or

if no such requirement is imposed by or under the POEO Act 1997, any methodology which the general terms of approval or a condition of the licence or the protocol (as the case may be) requires to be used for that testing; or

if no such requirement is imposed by or under the POEO Act 1997 or by the general terms of approval or a condition of the licence or the protocol (as the case may be), any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The Clean Air (Plant and Equipment) Regulation 1997 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".)

Protection of the Environment Operations Act 1997

## General Terms of Approval - Issued

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Notice No: 1531800

### *Reporting conditions*

**R1.1** The applicant must provide an annual return to the EPA in relation to the development as required by any licence under the Protection of the Environment Operations Act 1997 in relation to the development. In the return the applicant must report on the annual monitoring undertaken (where the activity results in pollutant discharges), provide a summary of complaints relating to the development, report on compliance with licence conditions and provide a calculation of licence fees (administrative fees and, where relevant, load based fees) that are payable. If load based fees apply to the activity the applicant will be required to submit load-based fee calculation worksheets with the return.

Protection of the Environment Operations Act 1997

## **General Terms of Approval - Issued**

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Notice No: 1531800

### **Attachment – B**

## **Mandatory Conditions for all EPA licences**

### **Administrative conditions**

#### **Operating conditions**

##### **Activities must be carried out in a competent manner**

Licensed activities must be carried out in a competent manner.

This includes:

the processing, handling, movement and storage of materials and substances used to carry out the activity; and  
the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

##### **Maintenance of plant and equipment**

All plant and equipment installed at the premises or used in connection with the licensed activity:

- a. must be maintained in a proper and efficient condition; and
- b. must be operated in a proper and efficient manner.

### **Monitoring and recording conditions**

#### **Recording of pollution complaints**

The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

The record must include details of the following:

- the date and time of the complaint;
- the method by which the complaint was made;
- any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- the nature of the complaint;
- the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- if no action was taken by the licensee, the reasons why no action was taken.

The record of a complaint must be kept for at least 4 years after the complaint was made.

Protection of the Environment Operations Act 1997

## General Terms of Approval - Issued

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Notice No: 1531800

The record must be produced to any authorised officer of the EPA who asks to see them.

### Telephone complaints line

The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

This condition does not apply until 3 months after this condition takes effect.

## Reporting conditions

### Annual Return documents

#### *What documents must an Annual Return contain?*

The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

- a. Statement of Compliance; and
- b. Monitoring and Complaints Summary.

A copy of the form in which the Annual Return must be supplied to the EPA accompanies this licence. Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

#### *Period covered by Annual Return*

An Annual Return must be prepared in respect of each reporting, except as provided below

*Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.*

Where this licence is transferred from the licensee to a new licensee,

- a. the transferring licensee must prepare an annual return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b. the new licensee must prepare an annual return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

*Note: An application to transfer a licence must be made in the approved form for this purpose.*

Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an annual return in respect of the period commencing on the first day of the reporting period and ending on

- a. in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
- b. in relation to the revocation of the licence - the date from which notice revoking the licence operates.

Protection of the Environment Operations Act 1997

## General Terms of Approval - Issued

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Notice No: 1531800

### ***Deadline for Annual Return***

The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

### ***Notification where actual load can not be calculated***

(Licences with assessable pollutants)

Where the licensee is unable to complete a part of the Annual Return by the due date because the licensee was unable to calculate the actual load of a pollutant due to circumstances beyond the licensee's control, the licensee must notify the EPA in writing as soon as practicable, and in any event not later than the due date.

The notification must specify:

- a. the assessable pollutants for which the actual load could not be calculated; and
- b. the relevant circumstances that were beyond the control of the licensee.

### ***Licensee must retain copy of Annual Return***

The licensee must retain a copy of the annual return supplied to the EPA for a period of at least 4 years after the annual return was due to be supplied to the EPA.

### ***Certifying of Statement of Compliance and Signing of Monitoring and Complaints Summary***

Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

- a. the licence holder; or
- b. by a person approved in writing by the EPA to sign on behalf of the licence holder.

A person who has been given written approval to certify a Statement of Compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review this licence.

### ***Notification of environmental harm***

Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act

Notifications must be made by telephoning the EPA's Pollution Line service on 131 555.

The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

### ***Written report***

Where an authorised officer of the EPA suspects on reasonable grounds that:

- a. where this licence applies to premises, an event has occurred at the premises; or
- b. where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,

Protection of the Environment Operations Act 1997

## General Terms of Approval - Issued

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Notice No: 1531800

and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

The request may require a report which includes any or all of the following information:

- a. the cause, time and duration of the event;
- b. the type, volume and concentration of every pollutant discharged as a result of the event;
- c. the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; and
- d. the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- e. action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f. details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;
- g. any other relevant matters.

The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

## General conditions

### Copy of licence kept at the premises or on the vehicle or mobile plant

A copy of this licence must be kept at the premises or on the vehicle or mobile plant to which the licence applies.

The licence must be produced to any authorised officer of the EPA who asks to see it.

The licence must be available for inspection by any employee or agent of the licensee working at the premises or operating the vehicle or mobile plant.





Office of  
Environment  
& Heritage

**COPI**

Date: 10 April 2015  
Your reference: DA2015/004  
Our reference: DOC15/97818  
Contact: Michelle Howarth 02 6883 5339

Derek Francis  
General Manager  
Bogan Shire Council  
PO Box 221  
Nyngan NSW 2825

Dear Derek

**RE: Avoca Tank Project**

I refer to your request dated 18 March 2015 seeking comment from the Office and Environment and Heritage (OEH) on the exhibited Environmental Impact Statement (EIS) for the proposed Avoca Tank Project.

We have reviewed the information provided against our requirements sent to the Department of Planning and Environment on 3 September 2013. OEH considers that the EIS does not meet the Director General's requirements. Specifically, a Biodiversity Offset Strategy should be prepared to offset the area of impact. Further details are provided in Attachment A.

If you have any questions regarding this matter please contact Michelle Howarth, Conservation Planning Officer on 02 6883 5339.

Yours sincerely

**SONYA ARDILL**  
**Senior Team Leader Planning, North West Region**  
**Regional Operations**

Attachment A: Biodiversity Comments

## Biodiversity Comments

---

### 1 Biodiversity Offsets

Section 4.3.7 of the EIS states 'a Biodiversity Offset Strategy is not required for the proposal because the general principles of 'avoid and minimise' have been adopted'.

OEH notes that the proponent has modified the footprint of the project to avoid key habitat for the Cobar Greenhead Orchid and to minimise the area of disturbance. However, from the information provided in the EIS, it is understood that the proposal will still result in the clearing of approximately 34 hectares of native vegetation and the removal of up to 38 hollow-bearing trees. The site assessment found that habitat condition and quality across the study area is moderate to good due to the diversity of microhabitats and the condition of native vegetation. The area to be impacted provides potential habitat for a large number of threatened species. The EIS identified 21 threatened species listed under the *Threatened Species Conservation Act*, 2 of which are also listed under the *Environment Protection and Biodiversity Act*, and 3 migratory species that are either known or have the potential to occur within the area. Based on this information these impacts should be offset.

The proposed offsets package should meet the OEH's principles for the use of biodiversity offsets in NSW, which are available at:

<http://www.environment.nsw.gov.au/biodivoffsets/oehoffsetprincip.htm>

In addition the proposed biodiversity offset package should:

- Identify the conservation mechanisms to be used to ensure the long term protection and management of the offset sites, and;
- Include an appropriate Management Plan that has been developed as a key amelioration measure to ensure any compensatory offsets, retained habitat enhancement features within the development footprint and/or impact mitigation measures (including proposed rehabilitation and/or monitoring programs) are appropriately managed and funded.

### Recommendations

- 1.1 That a biodiversity offset package be developed to adequately offset the area of impact.
- 1.2 That an appropriate Management Plan be developed to ensure offsets are appropriately managed and funded.
- 1.3 That the conservation mechanisms to be used in securing the offset be identified



OUT15/9277

Mr Timothy Riley  
Manager Environmental Services  
Bogan Shire Council  
P.O. Box 221  
Nyngan, NSW 2825

Dear Mr Riley

**Development Proposal Avoca Tank Underground Mine  
Tritton Resources Pty Ltd  
Notification of Development Application DA 2015/004**

I refer to your letter of 12 March 2015 inviting comments from the Department of Trade and Investment (DTIRIS), Division of Resources and Energy (DRE) regarding development application lodged by Tritton Resources Pty Ltd for the Avoca Tank underground mine proposal.

DRE has reviewed the *Environmental Impact Statement for the Avoca Tank Project*, dated July 2014 and provides the following comments which are directed at specific areas of responsibility within DRE for this proposal.

The proposed Avoca Tank Mine Project lies within EL 6126 held by Tritton Resources Pty Limited. The project will require a mining lease to be granted under the *Mining Act (1992)*.

DRE supports the proposed project

Subject to the approval of development consent for this proposal, DRE recommends that the following conditions be incorporated in any development approval:

**1. Rehabilitation Management Plan/Mining Operation Plan (RMP/MOP)**

The proponent must prepare and implement a Rehabilitation Management Plan / Mining Operations Plan for the project area to the satisfaction of the Secretary of DTIRIS. This Plan must be:

- a) prepared in consultation with the DRE, Office of Environment and Heritage, Planning and Environment, NSW Office of Water, NSW EPA and Broken Hill City Council;
- b) prepared in accordance with the relevant DRE guidelines and in consultation with the DRE; and
- c) submitted to the Secretary of DTIRIS within 3 months of this approval.

Department of Trade & Investment, Regional Infrastructure & Services  
Division of Resources and Energy  
PO Box 344 Hunter Region Mail Centre NSW 2310  
516 High St Maitland NSW 2323  
Tel: 02 4931 6666 Fax: 02 4931 6776  
ABN 72 189 919 072  
[www.industry.nsw.gov.au](http://www.industry.nsw.gov.au)

## 2 Exploration Activities

- a) Exploration activities must be notified to, and approved by, DRE prior to commencement. Relevant due diligence assessment reports and environmental assessment reports must be provided and must address the following:
- summary of the Proposed Activity;
  - description of the Site(s);
  - existing Environment – including general description, surface and groundwater, threatened species, populations and ecological communities, aboriginal cultural heritage values, historic and natural heritage values;
  - impact assessment;
  - summary of Impacts;
  - conclusions; and
  - Statement of Commitments
- b) Details of exploration activities must be documented in the Annual Environmental Management Report.

DRE supports in principle the proposed Avoca Tank Project as a responsible utilisation of the State's mineral resources.

Should you have any enquires regarding this matter please contact Steve Cozens, Senior Project Officer, Industry Coordination on (02) 9842 8573.

Yours sincerely

  
Adrian Delany  
Acting Director Industry Coordination

cc: Mitchell Bland, orange@rwcorkery.com

5.5.15



Transport  
Roads & Maritime  
Services

SF2013/091019; WST13/00067/03

BOGAN SHIRE COUNCIL

FILE 23 APR 2015 R/N

ASSIGNEE:

General Manager  
Bogan Shire Council  
PO Box 221  
NYNGAN NSW 2825

Dear Sir

**DA2015/004: Part Lot 10, Lots 135 & 144 DP 751315 and Part Lot 3 DP 751342;  
Booramugga Road, Girilambone; Underground Mine (Avoca Tank Project)**

Thank you for your letter dated 18 March 2015 referring DA2015/004 to Roads and Maritime Services for comment. It is noted the application has been referred to Roads and Maritime in accordance with Clause 16(2) of *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

The information submitted in support of the application has been reviewed and the following aspects of the proposed development are noted:

- The proposed mine (to be known as Avoca Tank Mine) is expected to operate for seven (7) years.
- Ore material would be transported from the mine site to the Tritton Copper Mine for processing. This will involve registered road trains using private haul roads, Booramugga and Yarrandale Roads. Following processing, gold, copper and silver would then be transported to Hermidale Rail Siding. This proposed haulage route is an extension to the existing haulage routes used by applicant as part of its Girilambone Copper Mine operations.
- Approximately 50 road train movements per day would operate between Tritton Copper Mine and Avoca Tank Mine. The applicant advises this is similar to existing movements on the public road network currently generated by Girilambone Copper Mine operations. Girilambone Copper Mine is approaching its end of life and haulage operations generated by the proposed Avoca Tank Mine will replace current haulage operations at Girilambone Copper Mine.
- Deliveries and staff accessing the site will use the intersection of Mitchell Highway (HW7) and Booramugga Road. This intersection is sealed with some widening and is located within a 70km/h speed zone. Mitchell Highway at this location carries on average 663 vehicles per day.
- The proposed development will employ 55 staff. Employment positions generated by the Avoca Tank Mine are expected to replace positions concluding at Girilambone Copper Mine.

Roads and Maritime does not object to the proposed development and provides the following recommended condition of consent for Council's consideration:

- The proponent is to prepare and implement a code of conduct relating to transport of materials on public roads as part of the considerations under Clause 16(1) of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

Roads and Maritime Services

51 - 55 Currajong Street Parkes NSW 2870  
PO Box 334 Parkes NSW 2870 DX 20256  
www.rms.nsw.gov.au | 13 17 82

Please forward a copy of Council's determination of the application to Roads and Maritime at the same time it is sent to the applicant. Should you require further information please contact Andrew McIntyre (02) 6861 1453.

Yours faithfully



20 APR 2015

Susie Mackay  
Network & Safety Manager  
Western



3 Marist Place  
Parramatta NSW 2150

Locked Bag 5020  
Parramatta NSW 2124  
DX 8225 PARRAMATTA

Telephone: 61 2 9873 8500  
Facsimile: 61 2 9873 8599

[heritage@heritage.nsw.gov.au](mailto:heritage@heritage.nsw.gov.au)  
[www.heritage.nsw.gov.au](http://www.heritage.nsw.gov.au)

File: SF15/21665  
Job ID No: DOC15/105483  
Your Ref: DA/2015/004

Mr Derek Francis  
General Manager  
Bogan Shire Council  
PO Box 221  
NYNGAN NSW 28251

Attention: Kayla Volker Via email: [kayla.volker@bogan.nsw.gov.au](mailto:kayla.volker@bogan.nsw.gov.au)

Dear Mr Francis

**RE: Comments on exhibited EIS for proposed Avoca Tank underground mine (DA/15/004)**

I refer to your letter received on 24 March 2015, requesting comments from the Heritage Council of NSW (Heritage Council) regarding the Environmental Impact Statement (EIS) on exhibition for the above proposal.

The underground mine, located 7km northwest of the village of Girilambone. The mine would comprise box cut and underground mining infrastructure, extension of haul road and ancillary surface infrastructure.

The following comments are based on the documents on exhibition accessed on R W Corkery & Co website.

The proposal does not affect any item listed on the State Heritage Register (SHR). However, the proposal involves excavation and may have potential archaeological impact. The Historic Heritage Assessment prepared by Onsite CHM dated May 2014 adequately addressed archaeology. Based on the report's findings, the following recommendation of the report should be implemented:

*A due diligence heritage management response strategy be prepared to respond to the low possibility of exposing relics during earthworks. As well as detailing response protocols, the strategy should include information to be transmitted to site personnel as part of any induction so they are aware of the possibility and protocols.*

If historical archaeological deposits are discovered during works, work must immediately cease in the affected area(s) and the Heritage Council of NSW must be notified. A suitably qualified and experienced archaeologist must be contacted to assess the finds. Additional assessment and approval may be required prior to works continuing in the affected area(s) based on the nature of the discovery.

[Helping the community conserve our heritage](#)

Should any Aboriginal objects be uncovered by the work, excavation or disturbance of the area is to stop immediately and the Office of Environment & Heritage (Enviroline 131 555) is to be notified in accordance with Section 89A of the *National Parks and Wildlife Act 1974* (NPW Act). Aboriginal objects in NSW are protected under the NPW Act. Unless the objects are subject to a valid Aboriginal Heritage Impact Permit, work must not recommence until approval to do so has been provided by the Office of Environment & Heritage.

If you have any further enquiries regarding this matter, please contact Rajat Chaudhary, Heritage Officer Heritage Division, Office of Environment and Heritage on (02) 9873 8521.

Yours sincerely



**Katrina Stankowski**  
A/Manager, Conservation  
Heritage Division  
Office of Environment & Heritage  
12 August 2015

**As Delegate of the Heritage Council of NSW**



# Appendix 2

## Approved Driver's Code of Conduct

(Total No. of pages including blank pages = 4)

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**Planning Services  
Resource Assessments**  
Contact: Matthew Riley  
Phone: 9228 6339  
Email: [matthew.riley@planning.nsw.gov.au](mailto:matthew.riley@planning.nsw.gov.au)

Mr Nathan Jones  
Environmental Advisor  
Tritton Resources Pty Ltd  
PO Box 386  
Nyngan NSW 2825

Dear Mr Jones

**Tritton Copper Mine (DA 41/98)  
Code of Conduct**

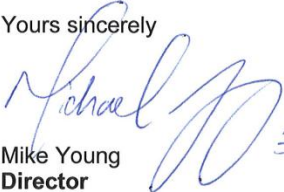
Thank you for forwarding the Code of Conduct as required under condition 37A of schedule 2 of the modified development consent for the Tritton Copper Mine (DA 41/98).

The Department has reviewed the amended Code of Conduct as provided on 31 July 2015, and is satisfied that it complies with the requirements set out in the relevant condition of the development consent.

Consequently, I wish to advise you that the Secretary has approved the Code of Conduct.

If you have any enquiries, please contact Matthew Riley on the details above.

Yours sincerely

  
Mike Young 31.7.15.  
**Director**  
**Resource Assessments**  
as the Secretary's nominee



**Form**  
**Driver's Code of Conduct**  
**TRL-ENV-FRM-020**

**Applicability of Procedure**

This procedure applies to the transportation of waste rock on public roads conducted by Tritton Resources employees or contractors.

**Objective**

This Driver's Code of Conduct has been established to minimise the impact of Tritton Resources operations on the environment and motorists using the public road network and to ensure a high quality, reliable and safe service.

**Process**

The driver will:

- Be required to sign and comply with this code of conduct
- Comply with all NSW regulations regarding speed, load limits and driving hours;
- Make themselves familiar with the Personal Protection Equipment requirements for each work site and strictly adhere to them;
- Comply with all rules and regulations such as speed restrictions when operating on Tritton Resources sites or other private property;
- Ensure that all loads are correctly covered before entering a public road;
- Limit the use of the engine brake and other noise driving practices in built-up areas;
- Show courtesy to all road users at all times; and
- Ensure that your actions bring credit upon yourself, Tritton Resources and the transport industry in general.
- Ensure that all vehicles exporting waste rock enter and exit the site via the haul road entrance/Yarrandale Road intersection
- Ensure that the transportation of waste rock only occurs between 7.00am and 10.00pm

Driver's Name (please print)	
Driver's Signature	
Date	

All signed code of conducts will be captured in InTuition as a compliance record.

# Appendix 3

## Approved Cultural Heritage Management Plan - Tritton Mines

(Total No. of pages including blank pages = 28)



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# Cultural Heritage Management Plan

**Tritton Mine (ML1544),  
Murrawombie Mine (ML1280), North East Mine  
(ML1383), Girilambone Regional (EL6126), Coolabah  
(EL8083), Girilambone East (EL8084), Tritton Regional  
(EL4962), Miandetta (EL6785), and Hermidale (EL6346)**



<b>Document Title</b>			Cultural Heritage Management Plan		
<b>Document Owner</b>			HSET Manager		
<b>Revision</b>	<b>Company</b>	<b>Date</b>	<b>Originator</b>	<b>Reviewed</b>	<b>Approved</b>
Original	EnviroKey Steve Sass	26/05/13	Rodney Cooper		
Revision 1	Straits Resources Limited	23/01/15	Tritton Mines	John Miller Chris Raymond Derek Garment Nathan Jones Paul Calvin	John Miller General Manager

Signature:  Date: 22/06/2015

First Revision completed by Paul Calvin Heritage and Native Title Consultant Straits Resources Limited

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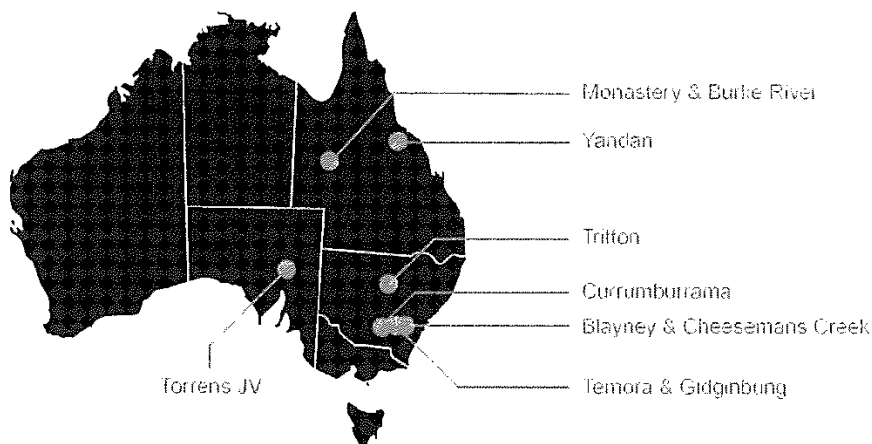
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A

## 1. INTRODUCTION

Straits Resources (ASX: SRQ) is an established copper mining and exploration company listed on the Australian Securities Exchange.

Straits' flagship asset is the Tritton copper operations in NSW which produce approximately 25,000 tonnes of copper, in, combined, annually in the form of concentrate and 'copper cement'. The operations incorporate multiple mines and a 1.6 million tonne per annum concentrator.



Tritton Resources Limited (The Company) operates the Tritton Copper Mine (ML1544), Murrawombie Mine (ML1280), and North-East Mine (ML1383) within NSW. The Company also has six (6) Exploration Licences (EL's) Girilambone Regional (EL6126), Coolabah (EL8083), Girilambone East (EL8084), Tritton Regional (EL4962), Miandetta (EL6785), and Hermidale (EL6346). The ML's and EL's are located west and north-west of Nyngan, in the Bogan Local Government Area (LGA) within the central west region of New South Wales (see Map 1).

In preparing the CHMP, the following documents have been considered:

- ML1544, ML1383, and ML1280 Lease Documents
- Development Consents DA1/91, 5/95, 6/95 and 41/98
- MOP 1544 Environmental Impact Statements (RWC 1990; 1995; 1998)
- Straits Corporate Policies and Standards
- Other relevant environmental legislation and regulations

The objectives of the CHMP have been derived from legislative requirements and industry best practice. The CHMP represents a working document that provides:

- Legislative requirements and obligations
- Clearly defined responsibilities
- Identifies heritage items within the management area
- A strategy for the management of heritage items
- Opportunity for training and review

**1.1 Government and Community Relations**

The company has an active program of community participation that sees it contribute to various education support activities, charities, sporting groups and community development programs. In particular, the company endeavours to contribute to long term community prosperity by providing opportunities for people from the region to gain skills, livelihood and invest in the local area.

Wherever possible the company endeavours to seek and support local service providers to mining and exploration activities. This is consistent with Straits Community and Heritage Policy, whereby the company seeks to be an active participant in the economic and social wellbeing of the communities in which we operate and commensurate with the economic opportunities particular to each location.

The company has a preference of employing locally, and training people in the various skills required to become an integral member of a mine workforce. Approximately 70% of the company’s workforce have been employed from the areas surrounding the mine operations including a large proportion from the area (Nyngan/Hermidale/Girilambone). The company injects around \$21 million into the local economy in salary and wages alone.

The company fosters good working relationships with all government departments that it has interactions with, from local shires through to federal government administrative bodies. This has helped the company form strong working relationships with local people in all areas where it operates and this in turn has assisted in the growth of the company.

**1.2 Community and Heritage Policy**

A core value of the company is to develop open and lasting relationships of mutual understanding and respect with all communities and stakeholders within the areas in which we operate.

**2. PURPOSE**

**2.1 Cultural Heritage Management Plan (CHMP)**

The purpose of this Cultural Heritage Management Plan is to ensure the company is compliant with the Office of Environment and Heritage (OEH) NSW and various NSW State and Federal legislation related to Aboriginal Cultural Heritage.



## 2.2 Cultural values

The company acknowledges the cultural significance of landscapes, places, objects, customs and traditions (and their contexts) that communities have inherited from the past and aspires to conserve these for current and future generations. These values can relate to physical or 'tangible' sites, places and objects; and 'intangible' cultural practices associated with those landscapes, sites, places and objects, and include traditional, historical and contemporary associations of people with heritage places. Natural elements of the environment may also have cultural meanings and values.

## 3. STAKEHOLDERS

### 3.1 Awareness of Stakeholders

There are numerous stakeholders, the company liaise with, which include local land owners, Bogan Shire Council, local industry groups, Bogan Aboriginal Corporation, Nyngan Local Aboriginal Land Council, and Native Title Services Corporation (NTSCorp).

The Tritton Community Consultative Committee, was established on 22 February 2013 as a means to share information and maintain relationships with the various stakeholders. Its' members consist of representatives from local business, farmers, Bogan Shire Council, Bogan Aboriginal Corporation, Nyngan Local Aboriginal Land Council and NTSCorp. This committee meets once a quarter to discuss issues related to the company's operation and the community.

## 4. MANAGEMENT AREA

The CHMP applies to all lease and licence areas operated by the company, including; The Tritton Copper Mine (ML1544), Murrawombie Mine (ML1280), North-East Mine (ML1383), Girilambone Regional (EL6126), Coolabah (EL8083), Girilambone East (EL8084), Tritton Regional (EL4962), Miandetta (EL6785), and Hermidale (EL6346). The extent of the Management Area is provided in Map 1.

The total tenure holding of the company is approximately 2,000 square kilometres. The management area lies approximately 45km west/north west of the township of Nyngan, within central west New South Wales. Nyngan, with a population of approximately 2,000, is the closest regional centre. The villages of Hermidale, and Girilambone are the nearest communities, being located within EL6346 and EL6126 respectively.

The tenements lie on the Cobar (SH/55-14) and Bourke (SH/55-10) 1:250,000 map sheets within the Bogan Shire. The area is of low relief and drained by ephemeral creeks flowing into the Bogan River, a tributary of the Darling River. Much of the area has been cleared of native timber and is now cropping land (generally growing wheat or canola) or grassland. Extensive stands of regrowth native timber occupy areas of poor soil within the Bogan Shire, Parish of Girilambone

## 5. REGULATORY FRAMEWORK/LEGISLATION

### 5.1 National Parks & Wildlife Act 1974

The National Parks and Wildlife Act 1974 (NPW Act) establishes the fundamental functions of the NSW National Parks and Wildlife Service. These functions include the conservation of nature, objects, features, places and management of land reserved under this Act.

The NPW Act also sets out to protect and preserve Aboriginal heritage values. Part 6 of this Act refers to Aboriginal objects and places and prevents persons from impacting on an Aboriginal place or relic, without consent or permit.

### 5.2 Heritage Act 1977

The *Heritage Act 1977* defines 'environmental heritage' as places, buildings, works, relics, moveable objects and precincts. A property is a heritage item if it is:

- Listed in the heritage schedule of the local council's Local Environmental Plan (LEP);
- Listed on the State Heritage Register, a register of places and items of particular importance to the people of NSW; or
- Listed in the National Heritage Database.

### 5.3 NSW Aboriginal Land Rights Act 1983

A Local Aboriginal Land Council has the following functions in relation to Aboriginal culture and heritage:

- To take action to protect the culture and heritage of Aboriginal persons in the Council's area, subject to any other law,
- To promote awareness in the community of the culture and heritage of Aboriginal persons in the Council's area.

### 5.4 Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)

The Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (ATSIHP Act) can protect areas and objects that are of particular significance to Aboriginal people. The ATSIHP Act allows the Environment Minister, on the application of an Aboriginal person or group of persons, to make a declaration to protect an area, object or class of objects from a threat of injury or desecration.

## 6. PART 6 NATIONAL PARKS AND WILDLIFE ACT 1974 (NPW ACT)

### 6.1 Aboriginal cultural heritage consultation requirements for proponents 2010

The purpose of the NPW Act is to establish the requirements, surrounding consultation with the registered Aboriginal parties, as part of the heritage assessment process. To determine potential impacts of proposed activities on Aboriginal objects and places, and to create a framework to inform decision makers, if a need is required, to make application for an Aboriginal Heritage Impact Permit (AHIP).

The aim is to facilitate positive Aboriginal cultural heritage outcomes by:

- Affording an opportunity for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects(s) and/or place(s), in the area of the proposed project, to be involved in consultation such that information about cultural significance can be provided to Office of Environment and Heritage (OEH) to inform decisions regarding applications for an AHIP, and
- Providing Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects (s) and/or place(s), in the area of the proposed project, with the opportunity to participate in decision making regarding the management of their cultural heritage by providing proponents information regarding cultural significance and inputting into management options.

## 7. NATIONAL PARKS AND WILDLIFE REGULATION 2009 (NPW REGULATION)

### 7.1 Due Diligence Code of Practice for the Protection of Aboriginal Objects

The NPW Act provides that a person who exercises due diligence in determining that their actions will not harm Aboriginal objects, has a defense against prosecution for the strict liability offence, if they later unknowingly harm an object without an AHIP.

The NPW Act allows for a generic code of practice to explain what due diligence means. Carefully following this code of practice which is adopted by the National Parks and Wildlife Regulation 2009 (NPW Regulation), would be regarded as 'due diligence'. This code of practice can be used for all activities across all environments.

This code sets out the reasonable and practicable steps which individuals and organisations need to take in order to:

- Identify whether or not Aboriginal objects are, or are likely to be, present in an area,
- Determine whether or not their activities are likely to harm Aboriginal objects (if present),
- Determine whether an AHIP application is required.



## 8. LEGAL REQUIREMENTS AND OBLIGATIONS

### 8.1 Aboriginal Heritage

When dealing with aboriginal sites/objects, certain legal requirements and obligations must be met before any construction or development commences within the management areas, if there is a risk of damaging or destroying a heritage site. These legal requirements and obligations state that:

- All Aboriginal relics (sites and objects), other than those made for sale, are protected under *New South Wales National Parks and Wildlife Services Act 1974*. Aboriginal archaeological relics are non-renewable resources, valued for the information on the lifestyle of Aboriginal people in the past they can provide, and are also valued by some Aboriginal communities who have maintained cultural links with specific sites in their 'country'.
- It is illegal to damage or destroy a site or relic without the prior consent of the Office of Environment and Heritage (OEH). Any such disturbance requires a permit from OEH. Should evidence of unrecorded sub - surface archaeological deposits be uncovered as a result of mine operations, the company will cease work at that particular location immediately. Should archaeological material be located at any time, OEH will be notified immediately of the discovery for advice.

## 9. AUDITS OF ABORIGINAL SITES

### 9.1 Method of Audits and Storage

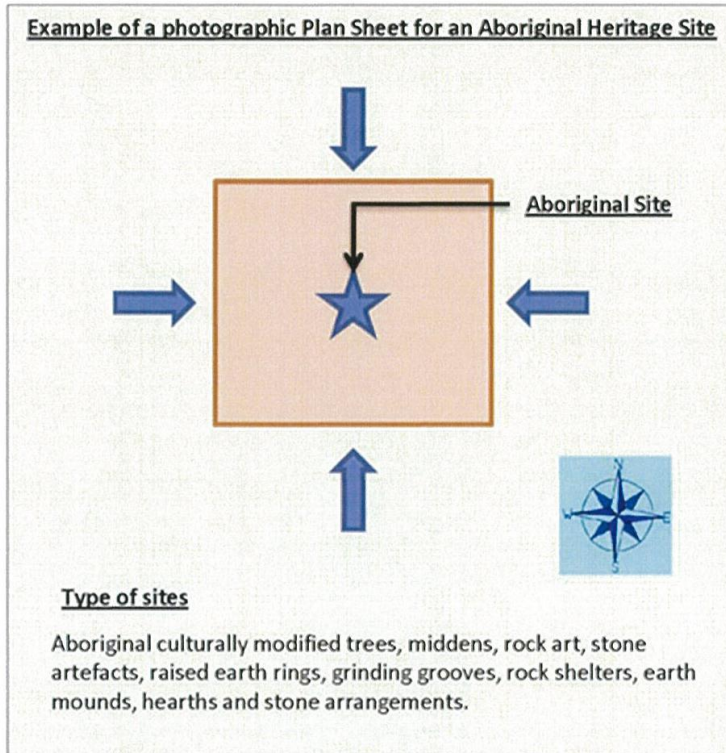
Auditing will consist mainly of digital recording e.g. photographs and written notes outlining the condition of the site on the day of the audit. All records will be retained in a central database which will be located on the company server.

### 9.2 Frequency of Audits

All sites will be audited annually by way of sample audits of 25% of all heritage locations quarterly. Additionally, following prospecting operations approval that are proximal to heritage sites, monthly audits will be conducted as part of the implemented prospecting heritage management strategy. At the conclusion of prospecting operations, sample auditing will resume on a quarterly basis.

### 9.3 Photographic Plan Sheet

The aboriginal site or object closest to true north can be used as 'nominal north' for the purpose of describing the directions in which the images were taken. This is easier than trying to work out exact directions in relation to true north.



## 10. HERITAGE

The company, where culturally significant areas had been established through authorised Heritage Assessments, will consult regularly with affected groups whose sites may be impacted due to Mining Lease or Exploration Licence activity. These consultations would be prior to any application for an Aboriginal Heritage Impact Permit (AHIP).

These meetings are to be facilitated by the company, Registered Aboriginal Parties (RAPs) and are to be held in a co-operative manner enabling the company to present information on a range of matters associated with mining and exploration.

Matters discussed at these meetings would include but not be limited to the timing and conducting of Heritage Assessments, management, and conservation of indigenous sites and areas of preservation within the parameters of the Lease or Licence.

The objective for the company with regard to culturally significant areas is to:

- Ensure that any activity on a Mining Lease or Exploration Licence complies with the requirements of the NPW Act, and



- Ensure that changes to the biological and physical environment resulting from mining and exploration do not adversely affect cultural associations with the area.

## 10.2 Protection of Sites

The company is committed to ensure, through due diligence code of practice, that culturally significant areas are located, recorded and protected. The company is committed to avoid disturbing culturally significant areas within the Mining Leases and Exploration licences. However, it is acknowledged that it may not always be practicable to avoid impacting sites.

The results of a Heritage Assessment Report will be used to identify the location and significance of sites in consultation with Registered Aboriginal Parties (RAPs), with reference to proposed exploration and mining activities and where practicable, avoid a known site by using a prescribed buffer agreed by all parties.

In some cases it may be unavoidable that a site may need to be considered for some level of disturbance. Should the company need to disturb a site or disturb the physical environment in a way that negatively affects culturally significant values, then consultation with RAPs will be undertaken prior to lodging an Aboriginal Heritage Impact Permit (AHIP). The company will support RAPs to apply for a care agreement with OEH in accordance with NPW Act 1974 for long-term safekeeping of transferred Aboriginal object(s).

The company will only consider making an application for an Aboriginal Heritage Impact Permit to destroy damage, alter, remove, or conceal in accordance with the National Parks and Wildlife Act 1974 – NSW, after it has exhausted all options to avoid impacting the Aboriginal site in question, and only after consultation with the affected RAPs has occurred.

Additionally, the CHMP contains procedures for the protection and mitigation of any sites that may be uncovered during mining and exploration (e.g. human burials, stratified deposits) as well as procedures for the physical management of Aboriginal sites in close proximity to mining and exploration (e.g. fencing and signposting engravings) as necessary.

## 11. HISTORIC HERITAGE

Under the NSW *Heritage Act 1977* it is an offence to disturb (destroy or remove) historic relics without the prior consent of the NSW Heritage Council. In the event of historic relics being discovered during mining or exploration activities within the management area, work is to cease immediately within the proximate location of the relic and await further direction from the NSW Heritage Council.

## 12. RESPONSIBILITIES AND ACCOUNTABILITIES

### 12.1 General manager

The General Manger must ensure appropriate resources are made available to maintain this management plan.

### 12.2 Manager Health Safety Environment & Training (HSET)

The HSET Manager shall ensure that the requirements of the Cultural Heritage Management Plan (CHMP) are fully implemented.

### 12.3 Environmental officers

The Environment Officers shall implement all the requirements of this CHMP.

### 12.4 All personnel

All staff and contractors undertaking any surface disturbance work within the management area must observe and comply with the requirements of the CHMP, and must complete the heritage induction that is incorporated into the company Site Induction.

If staff and contractors find any potential aboriginal or historic heritage site / artefact they must stop work and notify their supervisor immediately.

## 13. EXISTING HERITAGE

### 13.1 Historic Heritage

Searches of the Bogan LEP, Australian Heritage Places Inventory and NSW Heritage Office failed to locate any items of historic heritage within or adjacent to the management area.

However, several historic items are known from the vicinity of the Bonnie Dundee Copper Mine site (CWAHS 1997) which is located in the north-west portion of ML1544 and north of Yarrandale Road. The locations of these items are not mapped given that the specific locations are unknown.

CWAHS (1997) identify at least two pieces of mining equipment that were deemed greater than 50 years of age, which are therefore included under the *Heritage Act 1977* as 'relics'. These items are identified as a:

- Steel winch
- Headframe Winder (headframe totally demolished and wheel relocated in a pile of timber near the mine shaft)

In the event that any future historical archaeological relics not assessed or anticipated by Tritton Mines are found during the works, all works in the immediate vicinity are to cease and a qualified archaeologist be contacted to assess the situation and consult with the Heritage Branch of the OEH regarding the most appropriate course of action.

**13.2 Aboriginal Heritage**

A search conducted using Aboriginal Heritage Information Management System (AHIMS) administered by OEH reveals a total of 64 items within the management area (AHIMS 2012). These consist of:

- 14 within ML1544
- 36 within ML1383
- 1 within ML1280
- 7 within EL6126
- 6 within EL4962

**13.3 Appendix 1**

Appendix 1 identifies each existing aboriginal heritage item within the management area with way points for each and set in AMG 66 and AGD 94 to assist in locating each site as required.

**14. MANAGEMENT STRATEGY**

**14.1 Management of Existing Locations**

All aboriginal and historic heritage items are protected under the *NPW Act* and the *Heritage Act 1977*.

Given this; **Table 1** details management objectives and measures that must be performed within the management area.

**Table 1** Objectives and measures relating to heritage items within the management area.

Management Objective	Management Measure
Heritage training of the company staff and contractors	All staff and unescorted contractors of the company will undertake heritage (aboriginal and historic) awareness as part of the company site induction training.
Protect all aboriginal and historic heritage items from any disturbance or damage	Prior to any surface disturbance or vegetation removal, a Surface Disturbance Permit is approved. No activities will be conducted within 50m of a known heritage site without specific approval from the General Manager.

## 15. MANAGEMENT OF UNANTICIPATED ABORIGINAL OBJECTS

This section provides procedures that will be followed if unanticipated Aboriginal objects are discovered at any time throughout the life of the Project.

Aboriginal objects are protected from harm by Section 86 of the National Parks and Wildlife Act 1974 (NPW Act). Harm refers to any act or omission that:

- Destroys, defaces or damages the object;
- Moves the object from the land on which it is situated;
- Causes or permits the object to be harmed (OEH 2010 DD: 16).

Individuals and/or companies who contravene the Act can incur both monetary fines ranging from \$55,000 to \$1.1 million and 1 to 2 years imprisonment.

Examples of Aboriginal objects as defined under the NPW Act include, but are not limited to:

- Human skeletal remains;
- Aboriginal culturally modified trees;
- Middens;
- Rock art;
- Stone artefacts;
- Raised earth rings;
- Grinding grooves;
- Rock shelters;
- Earth mounds;
- Hearths; and
- Stone arrangements.

### 15.1 Unanticipated Aboriginal objects

If unanticipated Aboriginal objects are uncovered at any time throughout the life of the Project the following actions will be implemented:

- Step 1 – No further earth disturbing works planned will be undertaken in the vicinity of the suspected item of Aboriginal heritage significance.
- Step 2 – A buffer of 20m x 20m will be established around the suspected item of Aboriginal heritage significance. Non authorised entry or earth disturbance will not be allowed within this buffer zone until the area has been assessed.
- Step 3 – A qualified archaeologist or the OEH will be contacted to make an assessment of the discovery and prepare an assessment report, including

recommended mitigation measures, if required. The draft report will then be provided to the OEH & DP&I as well as Registered Aboriginal Parties identified during consultation in accordance with the requirements of Stage 4 of Aboriginal cultural heritage consultation requirements for proponents – April 2010 (or subsequent versions).

## **15.2 Discovery of Skeletal Remains**

If suspected human skeletal remains are uncovered at any time throughout the life of the project the following actions will be implemented:

- Step 1 – The suspected skeletal remains shall not be touched or disturbed.
- Step 2 – A buffer zone of 50m x 50m shall be established around the suspected remains and all work in the vicinity of the suspected remains would be suspended until the area has been assessed.
- Step 3 – The General Manager will notify the Nyngan Police, to conduct an assessment of the discovery.
- Step 4 – If skeletal remains are found to be aboriginal, appropriate, mitigation procedures would then be developed in consultation with DP&I, OEH and Registered Aboriginal Parties.

If the skeletal remains are found to be older than 100 years but non-Aboriginal, the General Manager will:

1. notify the Heritage Council of NSW; and
2. await further advice before proceeding with work in the area.

## **16. INADVERTENT DAMAGE TO HERITAGE ITEM**

In the event that inadvertent damage occurs to any historic items within the management area, the following procedure shall be followed:

1. Cease work immediately within the direct vicinity of the item and cordon off with flagging tape.
2. The General Manager and Environmental Officer shall be notified
3. The General Manager and Environmental Officer will:
  - a) Request a qualified archaeologist, NLALC, NTSCorp and BAC (aboriginal) / NSWHC (historic) to assess the significance of the damage and the item.
  - b) Notify the OEH with advice from archaeologist, NLALC, NTSCorp and the BAC (aboriginal) / NSWHC (historic) for further procedure.
4. The General Manager will implement any procedures or recommendations issued by the OEH.

## 17. INDUCTIONS AND REVIEW

### 17.1 Inductions

Prior to staff and contractors undertaking any surface work within the management area, they must undergo heritage awareness inductions. The induction will help staff and contractors identify heritage items when working within the management area, identify unrecorded heritage items, and minimise the risk of accidental damage to an item.

### 17.2 Appendix 2

Appendix 2 gives examples of Scar Trees, Ovens/Hearths (Mound) and Artefacts which could be found during surface disturbance work activities.

### 17.3 Review

The CCCHMP will be reviewed biannually, or on a more regular basis, as required.

## 18. REFERENCES

### 18.1 Original references

AHIMS. (2012) Aboriginal Heritage Information Management System.

CWAHS. (1997) An archaeological survey for the proposed Tritton Copper Mine Development between Hermidale and Girilambone, western New South Wales. *A report prepared by J. Kelton of Central West Archaeological and Heritage Services Pty. Ltd.*

OEH. (2010) Due diligence code of practice for the protection of Aboriginal Objects in New South Wales. *Department of Environment, Climate Change & Water, Hurstville, N.S.W.*

RWC. (1990) Girilambone Copper Project Environmental Impact Statement. *A report prepared by R.W Corkery & Co. Pty Limited for Nord Australex Nominees Pty Ltd.*

RWC. (1995) Environmental Impact Statement for the development of the Girilambone North Copper Mines. *A report prepared by R.W Corkery & Co. Pty Limited for Girilambone Copper Company Pty Ltd.*

RWC. (1998) Tritton Copper Project: Environmental Impact Statement. *A report prepared by R.W Corkery & Co. Pty Limited for Nord Australex Nominees Pty Ltd and Straits Mining Pty Ltd.*

TRL. (2010) Mining Operations Plan for ML1544: Tritton Mine Site January 2011 - December 2015. *Tritton Resources Limited.*

### 18.2 References Used for Review

NSW Aboriginal Land Rights Act 1983

Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)  
Aboriginal cultural heritage consultation requirements for proponents 2010  
Due Diligence Code of Practice for the Protection of Aboriginal Objects  
Applying for an Aboriginal Heritage Impact Permit  
Guide to Determining and Issuing Aboriginal Heritage Impact Permits  
Care of Aboriginal Objects and Care agreements  
Unity Mining – November 2013 - Sandra Wallace  
Snapper Mineral Sands Project – Aboriginal Cultural Heritage Management Plan –  
November 2007 - James Dornan  
Pine Dale Coal Mine - Yarraboldy Extension - March 2011 - R.W. Corkery & Co. Pty  
Limited  
Austar Coal Mines Pty Ltd (Austar) – May 2013 - Umwelt (Australia) Pty Ltd  
Boggabri Coal Pty Limited - December, 2013 - Boggabri Coal Pty Limited (BCPL) - A  
Besant  
Gerroa Sand Mine Extension - February 2009 - Biosis Research  
Holcim (Australia) Pty Ltd – June 2011 - Umwelt (Australia) Pty Ltd  
Integra Coal Operations“ Open Cut Project” - June 2012 - AECOM Australia Pty Ltd  
Liddell Colliery open cut coal mine – January 2008 – Umwelt (Australia) Pty Ltd  
Moolarben Coal Operations Pty Ltd (MCO) - May 2013 - P Kuskie  
Cobaki and Terranora Broadwater - August 2006 - Bundjalung Mapping Project School of  
Environmental Science & Management Southern Cross University  
Tomingly Gold Project (TGP) – October 2012 – OzArk

## 19 APPENDICES

1. Existing aboriginal heritage item within the management area
2. Scar Trees, Ovens/Hearths (Mound) and Artefacts
3. MAP - Sites Located on ML's and EL's



# Appendix 1

## Existing Aboriginal Heritage item within the management area



Appendix 1 Existing Aboriginal Heritage items within the management area from AHIMS.

Site Name	AMG 66			Site Type	Lease / Licence	AGD 94		
	Zone	Easting	Northing			Zone	Easting	Northing
T-ST-27 (Coolabah) Tritton	55	473490	6528640	Scarred Tree	1544	55	473603.7001	6528824.268
T-ST-28 (Coolabah) Tritton	55	473240	6528070	Scarred Tree	1544	55	473353.7026	6528254.274
T-ST-29 (Coolabah) Tritton	55	472910	6528980	Scarred Tree	1544	55	473023.7039	6529164.269
T-ST-36 (Coolabah) Tritton	55	473020	6527960	Scarred Tree	1544	55	473133.7035	6528144.276
T-ST-37 (Coolabah) Tritton	55	474040	6528790	Scarred Tree	1544	55	474153.6979	6528974.257
T-ST-3 (Coolabah) Kooregah	55	474170	6528700	Scarred Tree	1544	55	474283.6936	6528884.266
T-ST-2 "Kooregah" Hermidale/Girilambone Rd	55	474200	6526890	Scarred Tree	1544	55	474313.692	6527074.264
T-ST-4 "Kooregah" Hermidale/Girilambone Rd	55	474170	6528700	Scarred Tree	1544	55	474283.6936	6528884.266
T-ST-1 "Kooregah" Hermidale/Girilambone Rd	55	474480	6527750	Scarred Tree	1544	55	474593.6962	6527934.269
T-ST-16 (Coolabah) Tritton	55	472170	6527520	Scarred Tree	1544	55	472283.7053	6527704.286
T-ST-17 (Coolabah) Tritton	55	472070	6527350	Scarred Tree	1544	55	472183.708	6527534.29
T-ST-39	55	472300	6527900	Scarred Tree	1544	55	472413.7011	6528084.288
T-IF-2 (Coolabah) Kooregah	55	474170	6528870	Isolated Find	1544	55	474283.6936	6529054.261
T-ST-21 (Coolabah) Tritton	55	472560	6527720	Scarred Tree	1544	55	472673.7008	6527904.275
GM-HS-30 (Hearth);Girilambone Copper Mine	55	487750	6544150	Mound (Oven)	1383	55	487863.7004	6544334.151
GC-IF-2;Girilambone Copper Mine	55	485890	6544590	Isolated Find	1383	55	486003.7018	6544774.151
GC-IF-3;Girilambone Copper Mine	55	485890	6544590	Isolated Find	1383	55	486003.7018	6544774.151
GC-IF-4;Girilambone Copper Mine	55	485470	6544510	Isolated Find	1383	55	485583.708	6544694.158
GCM-HS-1 (Hearth);Girilambone Copper Mine	55	486760	6542930	Mound (Oven)	1383	55	486873.7043	6543114.159
GM-HS-2 (Hearth);Girilambone Copper Mine	55	486760	6542930	Mound (Oven)	1383	55	486873.7043	6543114.159
GM-HS-3 (Hearth);Girilambone Copper Mine;	55	485840	6544060	Mound (Oven)	1383	55	485953.7072	6544244.159
GM-HS-4 (Hearth);Girilambone Copper Mine	55	485850	6544050	Mound (Oven)	1383	55	485963.7012	6544234.161
GM-HS-5 (Hearth);Girilambone Copper Mine	55	485780	6544040	Mound (Oven)	1383	55	485893.7022	6544224.153

Site ID	Site Name	AMG 66			Site Type	Lease / Licence	AGD 94		
		Zone	Easting	Northing			Zone	Easting	Northing
45	GM-HS-6_(Hearth);Girilambone Copper Mine	55	487140	6543990	Mound (Oven)	1383	55	487253.6976	6544174.153
46	GM-HS-7_(Hearth);Girilambone Copper Mine	55	485890	6544320	Mound (Oven)	1383	55	486003.7018	6544504.156
47	GM-HS-8_(Hearth);Girilambone Copper Mine	55	485890	6544320	Mound (Oven)	1383	55	486003.7018	6544504.156
48	GM-HS-9_(Hearth);Girilambone Copper Mine	55	485950	6544370	Mound (Oven)	1383	55	486063.7068	6544554.156
49	GM-HS-10_(Hearth);Girilambone Copper Mine	55	485950	6544370	Mound (Oven)	1383	55	486063.7068	6544554.156
50	GM-HS-11_(Hearth);Girilambone Copper Mine	55	486210	6544530	Mound (Oven)	1383	55	486323.7065	6544714.153
51	GM-HS-12_(Hearth);Girilambone Copper Mine	55	486210	6544530	Mound (Oven)	1383	55	486323.7065	6544714.153
52	GM-HS-13_(Hearth);Girilambone Copper Mine	55	486240	6544570	Mound (Oven)	1383	55	486353.7049	6544754.155
53	GM-HS-14_(Hearth);Girilambone Copper Mine	55	486240	6544570	Mound (Oven)	1383	55	486353.7049	6544754.155
54	GM-HS-15_(Hearth);Girilambone Copper Mine	55	485950	6544610	Mound (Oven)	1383	55	486063.7068	6544794.157
56	GM-HS-17_(Hearth);Girilambone Copper Mine	55	485430	6544440	Mound (Oven)	1383	55	485543.7074	6544624.152
57	GM-HS-18_(Hearth);Girilambone Copper Mine	55	485430	6544440	Mound (Oven)	1383	55	485543.7074	6544624.152
58	GM-HS-19_(Hearth);Girilambone Copper Mine	55	485430	6544440	Mound (Oven)	1383	55	485543.7074	6544624.152
59	GM-HS-20_(Hearth);Girilambone Copper Mine	55	485940	6544650	Mound (Oven)	1383	55	486053.7046	6544834.159
60	GM-HS-21_(Hearth);Girilambone Copper Mine	55	486120	6544750	Mound (Oven)	1383	55	486233.7031	6544934.159
61	GM-HS-22_(Hearth);Girilambone Copper Mine	55	486120	6544750	Mound (Oven)	1383	55	486233.7031	6544934.159
62	GM-HS-23_(Hearth);Girilambone Copper Mine	55	485890	6544590	Mound (Oven)	1383	55	486003.7018	6544774.151
63	GM-HS-24_(Hearth);Girilambone Copper Mine;	55	485470	6544510	Mound (Oven)	1383	55	485583.708	6544694.158
64	GM-HS-25_(Hearth);Girilambone Copper Mine	55	485470	6544510	Mound (Oven)	1383	55	485583.708	6544694.158

**RESPONSE TO SUBMISSIONS**

Report No. 859/06

Appendix 3

**TRITTON RESOURCES PTY LTD**

Avoca Tank

Site ID	Site Name	AMG 66			Site Type	Lease / Licence	AGD 94		
		Zone	Easting	Northing			Zone	Easting	Northing
6	GC-ST-1;Girilambone Copper Mine	55	486330	6543890	Scarred Tree	1383	55	486443.7	6544074.154
7	GC-ST-2;Girilambone Copper Mine	55	486800	6543740	Scarred Tree	1383	55	486913.6967	6543924.154
8	GC-ST-3;Girilambone Copper Mine	55	487140	6543990	Scarred Tree	1383	55	487253.6976	6544174.153
9	GC-ST-4;Girilambone Copper Mine;	55	485420	6544380	Scarred Tree	1383	55	485533.7052	6544564.154
10	GC-ST-5;Girilambone Copper Mine	55	485470	6544510	Scarred Tree	1383	55	485583.708	6544694.158
11	GC-ST-7;Girilambone Copper Mine	55	485780	6544830	Scarred Tree	1383	55	485893.7022	6545014.152
12	GC-ST-6;Girilambone Copper Mine	55	485780	6544830	Scarred Tree	1383	55	485893.7022	6545014.152
55	GM-HS-16_(Hearth);Girilambone Copper Mine	55	485670	6544480	Mound (Oven)	1383	55	485783.7027	6544664.154
5	Girilambone_6	55	488800	6541700	Open camp site	1280	55	488913.6932	6541884.159
Stage 1	Avoca Tank 1	55	484966	6548490	Stone artefact scatter	6126	55	485079.7137	6548674.147
Stage 1	Avoca Tank 2	55	484857	6548245	Isolated stone artefact	6126	55	484970.7119	6548429.147
Stage 1	Avoca Tank 2	55	484835	6547528	Hearth 1	6126	55	484948.712	6547712.153
Stage 1	Avoca Tank 2	55	484815	6547517	Hearth 2	6126	55	484928.7158	6547701.155
Stage 1	Avoca Tank 2	55	484729	6547486	Hearth 3	6126	55	484842.7199	6547670.152
Stage 1	Avoca Tank 4	55	485027	6547775	Historic Scar Tree and Aboriginal Stockman's camp	6126	55	485140.7165	6547959.153
Stage 2	Avoca Tank 5	55	481436	6548043	2 x isolated stone artefacts	6126	55	481549.7172	6548227.168
Budgery 1	Budgery	55	470722	6509812	Possible scar tree	4962	55	470835.6609	6509996.38
Budgery 2	Budgery	55	470804	6509563	Isolated stone artefacts	4962	55	470917.6575	6509747.371
Budgery 3	Budgery	55	469103	6510411	Isolated stone artefact	4962	55	469216.6718	6510595.378
Budgery 4	Budgery	55	469790	6509438	Isolated stone artefact	4962	55	469903.6661	6509622.376
Budgery 5	Budgery	55	469773	6509543	Isolated stone artefact	4962	55	469886.6631	6509727.385

## Appendix 2

# Examples of Culturally Significant Objects

**Appendix 2 Scar Trees, Ovens/Hearths (Mound) and Artefacts**

**Scarred Trees**

Scarred trees could be the result of the removal of bark or wood for the making of a canoe, vessel, boomerangs, shelter, or medicine (**Figure 1**). The shape and size of a scar may indicate the purpose of which the bark or wood was removed from the tree. Scarred trees associated with burial sites are usually in groups of two or more trees (OEH 2010).



**Figure 1** Example of Scarred Tree (OEH 2010)

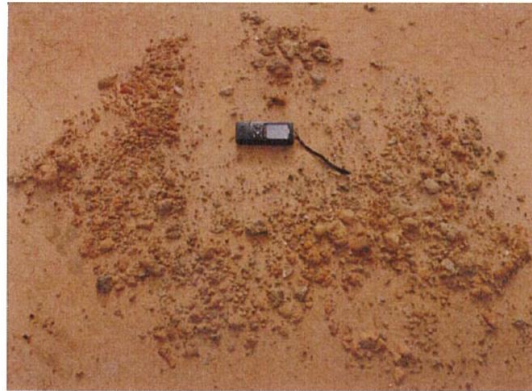
If a scarred or carved tree is found within the management area the procedure detailed in subsection 15.1 will be implemented.

**Oven or Hearth (Mound)**

Oven or hearth sites are the remains of an open fireplace used to provide warmth and lighting. They are also used for cooking food and sometimes to signal from one group to another. Oven or hearths are roughly circular piles of burnt clay or heat fractured rock with associated charcoal fragments, burnt bone, shell and stone artefacts (OEH 2010) (**Figure 2**).

If an Oven or hearth is found within the management area the procedure detailed in subsection 15.1 will be implemented.

A



**Figure 2** Example of Oven or Hearth (Mound) GPS as size reference (OEH 2010).

### Artefacts

Artefacts can be a variety of different materials and used for a variety of purposes. The most common aboriginal objects are stone tools, which include spear points, surface scatters, grinding stones, ground-edge axes. Stone artefacts often have sharp edges, or are of a stone type that is different from the natural rock in the area and are often small in size (OEH 2010).

Other artefacts include material remains of aboriginal people activities such as charcoal, animals bone, shell and ochre. The size of scattered artefacts may vary from one square metre to larger areas and may contain a few thousand artefacts (OEH 2010).

If an artefact is found within the management area the procedure detailed in subsection 15.1 will be implemented.



**Figure 3** Example of Stone Artefacts (OEH 2010).

## **Appendix 3**

# **MAP – Sites Located on ML'S and EL'S**

Appendix 3 MAP – Sites Located on ML'S and EL'S

