

RESPONSE TO GOVERNMENT AGENCY SUBMISSIONS

1. INTRODUCTION

This response has been prepared to address the range of issues included in the submissions provided by Tenterfield Shire Council and various State government agencies following public exhibition of the *Environmental Impact Statement* (EIS) for the Continued Operation of the Dowe's Quarry. The document addresses the submissions in no particular order.

2. TENTERFIELD SHIRE COUNCIL

2.1 INTRODUCTION

The issues raised by the Tenterfield Shire Council (Council) regarding the EIS have been summarised in the following subsections and are the result of formal notifications and additional consultation that involved meetings, correspondence and telephone discussions between various Council representatives, the Applicant, representatives of R.W. Corkery & Co and the specialist consultants involved in preparation of the EIS. The submissions provided by Council have been separated into traffic-related matters and hazard management.

2.2 TRAFFIC-RELATED ISSUES

Feedback on the public exhibition of the EIS was provided in a formal submission from the Mr Stephen Bell, Director of Engineering Services with Council on 28 October 2014. A meeting was held at the Council offices on 10 November 2014 to further discuss the requirements of Council and specifically to address the issues raised regarding the Traffic Impact Assessment undertaken for the EIS. The meeting to discuss Council's issues also involved representatives of NSW Roads and Maritime Services (RMS) (see Section 3). Attendees at the meeting included the following representatives.

- Roads and Maritime Services – Ms Liz Smith (Manager, Land Use Assessment, Network Management and Journey Management) and Mr Matt Adams (Development Assessment Officer).
- Tenterfield Shire Council – Mr Stephen Bell (Director of Engineering Services) and Ms Tamai Davidson (Senior Planner).
- Darryl McCarthy Constructions – Mr Darryl McCarthy.
- R.W. Corkery & Co. – Mr Rob Corkery.

As a result of the meeting and further correspondence between the various attendees, a range of additional assessment requirements and considerations were provided by Council. These issues are summarised and addressed in the following subsections.

Summary of Submission

The following provides a summary of the issues raised and discussed with Council.

1. Council requested that all intersection assessments be undertaken in accordance with the *Austroads Guide to Traffic Management - Part 6: Intersections, Interchanges and Crossings* and the *Austroads Guide to Road Design - Part 4 series*.
2. Council requested that the Quarry access be “squared up” to Mount Lindesay Road and designed/constructed to meet AustRoads standards and to suit predicted traffic volumes. This is to be inclusive of extending the seal of the access road.
3. Council requested that the intersection at the entrance to the Sunnyside Crushing and Screening Plant be designed and constructed to meet AustRoads standards and to suit predicted traffic volumes.
4. Council requested that the Applicant undertake detailed traffic modelling and assessment of the key intersections located along the proposed transport route. The traffic assessment should consider the existing and future traffic volumes, traffic mix, and turning movements performed at each intersection. The following intersections to be assessed.
 - Mount Lindesay Road/Quarry Access.
 - Mount Lindesay Road/Old Ballandean Road.
 - Logan Street/Naas Street.
 - Naas Street/Rouse Street.
 - New England Highway/Old Ballandean Road.
 - New England Highway/Access to Sunnyside Crushing Plant.

Where relevant, diagrams showing the turning movements and traffic volumes/traffic mix at each intersection are to be provided as well as any other relevant information. The traffic modelling and assessment should take into account the proposed Quarry life of 30 years.

5. Council requested that the Applicant provide a concept design for each intersection assessed to determine whether they meet current AustRoad standards and any relevant RMS guidelines and standards. These designs will be used to inform future Section 94 upgrade requirements at each site.
6. Council requested that the Applicant provide a brief discussion/consideration of cost effective measures that could be applied to upgrade and improve safety at the intersection of Old Ballandean Road and the New England Highway. This should include a brief comment about the practicality of such measures.
7. Following additional consultation regarding the assessment of culverts and bridges along the transportation route Council noted its agreement regarding a cooperative approach to assessing these components of the local road environment.

Response

1. The intersection design and construction guidelines are noted. All necessary intersection design or upgrade activity would comply with these guidelines unless site specific factors justify an appropriate deviation from the guideline.
2. Following assessment of the intersection of the Quarry Access Road and Mount Lindesay Road by Constructive Solutions, the Applicant proposes to square up and widen the intersection and install a give way sign on the access road so that outbound traffic gives way to inbound traffic at the intersection. The Applicant has also agreed to extend the proposed bitumen seal on the quarry access road from the originally proposed 400m to 600m to further reduce the potential for dust emission from road lift off. The Applicant respectfully requests that a suitable condition of development consent should provide for the design of the required works and application for the Section 138 Permit to be lodged within 3 months of the date of approval and that works are completed within 6 months of the receipt of all required approvals or permits.
3. Following assessment of the entrance from the New England Highway to the Sunnyside Crushing and Screening Plant by Constructive Solutions, the Applicant proposes to construct an Auxiliary Right Hand Turn at the southern entrance to the Sunnyside Crushing and Screening Plant and continue to maintain the northern entrance only for incoming trucks from the north. The Applicant would similarly appreciate a condition in a development consent that provides the lodgement of all plans and applications for a Section 13B Permit within 6 months of the date of approval of the date of approval and the works completed within 12 months of the receipt of all required approvals and permits.
4. Following consultation with Council and RMS, the Applicant conducted attended traffic intersection surveys at each of the six intersections requested by Council on Thursday 20 November 2014 and Monday 24 November 2014 between 7:00am and 10:00am and between 3:00pm to 6:00pm. The collected data included a breakdown of light vehicles and heavy vehicles. The proposed approach to the intersection surveys was confirmed with RMS representatives as being appropriate for the assessment required. The data was provided to Constructive Solutions who prepared the Traffic Impact Assessment for the EIS. Constructive Solutions reviewed the data for each intersection and completed a SIDRA intersection traffic analysis for the following four intersections.
 - New England Highway (Rouse Street) and Naas Street intersection.
 - Naas Street, Logan Street and Robert Brush Drive intersection.
 - Mount Lindesay Road, Old Ballandeen Road and Boundary Road intersection.
 - New England Highway, Bruxner Highway and Old Ballandeen Road intersection.

The analysis for each intersection included three scenarios:

- background or existing traffic;

- background traffic plus development traffic; and
- projected traffic based on 1.5% annual growth over the 30 year Quarry life.

The results of the SIDRA intersection traffic analysis and accompanying diagrams are provided as **Appendix 1**. In summary, all assessed intersections operate with acceptable delays and good Level of Service under existing conditions and with the predicted increase in traffic levels over the 30 year life of the Quarry. Constructive Solutions have concluded that intersection performance is not an issue for these intersections and upgrades are not warranted based on traffic volumes. Diagrams showing the recorded turning movements and traffic volumes at each intersection are provided in the appendices of the SIDRA analysis (**Appendix 1**).

As described in points 2 and 3 above, the Applicant has agreed to upgrade the entrance of the Dowe's Quarry at Mount Lindesay Road and the southern entrance to the Sunnyside Crushing and Screening Plant from the New England Highway. As this intersection and entrance would be upgraded in accordance with alternate designs, a SIDRA analysis was not warranted. Attended traffic intersection surveys were completed for these intersections and a graphical representation of the results is provided as **Appendix 2** for Council's records. The Applicant considers that once these intersections are upgraded they would meet all necessary requirements for traffic flow and delay.

5. Constructive Solutions have undertaken an additional field survey of the following entrances/intersections that the Applicant has agreed to upgrade.
 - New England Highway with the southern entrance to the Sunnyside Crushing and Screening Plant.
 - Mount Lindesay Road with the Quarry Access Road.

The purpose of the field survey was to identify design and construction requirements for these entrances/intersections in accordance with the relevant AustRoad guidelines. The results of the field surveys including concept drawings is provided as **Appendix 3**. It is noted that the northern entrance to the Sunnyside Crushing and Screening Plant from the New England Highway would not require any upgrading works.

6. A review of the intersection of the New England Highway with Old Ballandean Road was conducted as part of additional field surveys undertaken by Constructive Solutions (Section 4 of **Appendix 3**). The survey included a review of alternate methodologies to treat the intersection that would not require an expensive upgrade to the intersection and adjacent stretches of the New England Highway. Only the right hand turn from Old Ballandean Road was considered as this is the movement that heavy vehicle drivers would use to avoid driving through the northern section of Tenterfield when accessing the Sunnyside Crushing and Screening Plant from the Dowe's Quarry.

Constructive Solutions identified a possible treatment involving a system of warning lights that would notify drivers approaching the New England Highway

on Old Ballendean Road of any traffic heading south on the New England Highway that drivers would need to give way to. This system would be similar to that used to notify over-height trucks as they approach low height clearance bridges.

Aside from the prohibitive cost for installation, Constructive Solutions expressed concern that this approach would not be 'fail-safe'. The reliance on electrical supply to the lights, potential impacts from vegetation, vandalism and glare caused by the angle of sun approaching sunset were all factors in this assessment. In addition, the original concerns regarding sight distance at the intersection and the need for trucks to accelerate uphill as they turn right would remain significant safety concerns. Finally, use of this intersection has been highlighted by quarry staff as a safety risk. Without 'fail-safe' improvements, the use of the right turn from Old Ballendean Road onto the New England Highway at this intersection would present a Work Health and Safety Risk.

7. The Applicant acknowledges the cooperative approach supported by Council and RMS to the assessment of culverts, bridges and causeways along the transport route. It remains the Applicants position that it is prepared for the Section 94 contributions to be spent on those sections of the transport route where deficiencies are identified through this assessment.

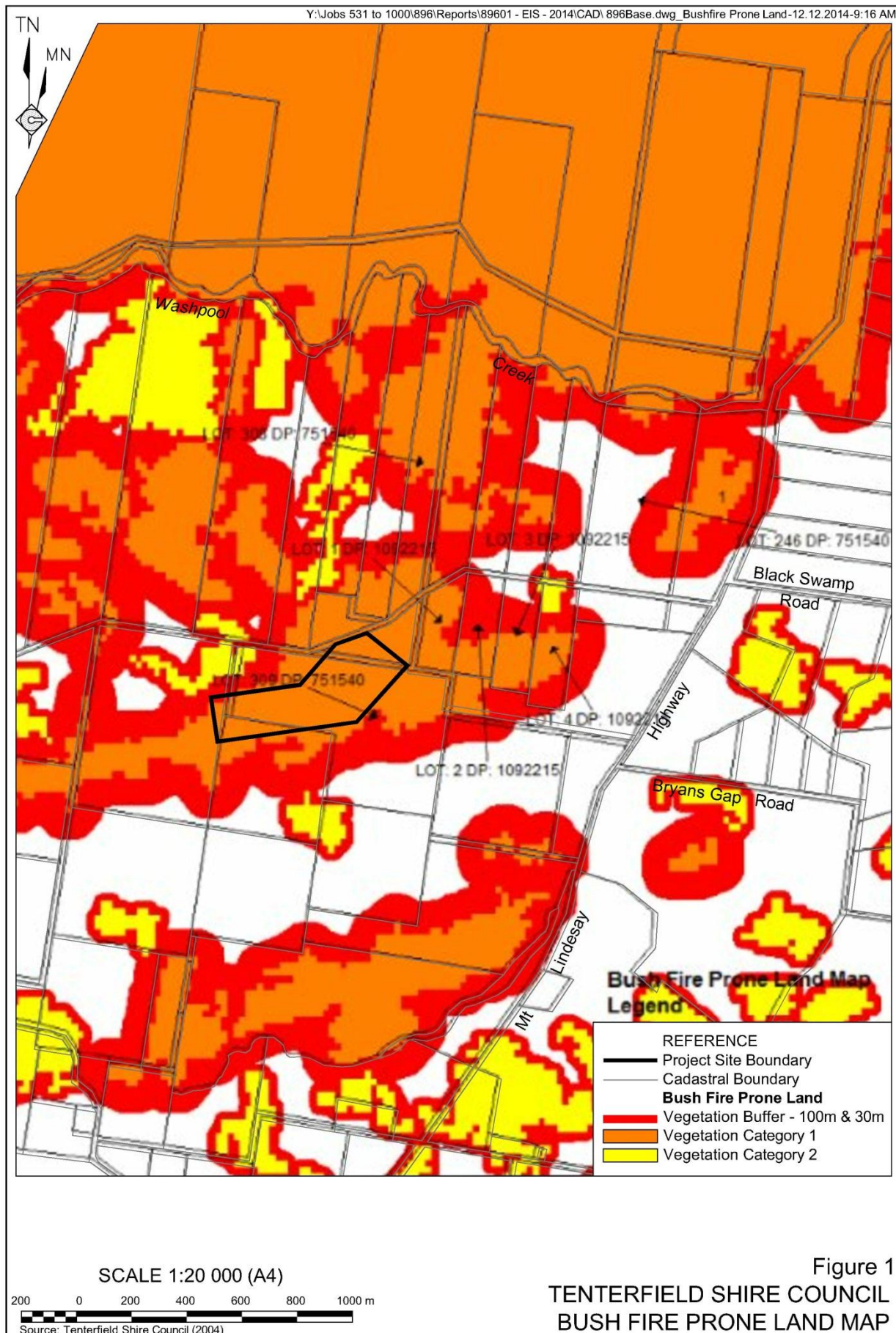
2.3 BUSHFIRE MANAGEMENT

Submission Summary and Response

During a telephone conversation with Ms Tamai Davidson of Tenterfield Shire Council on 16 October 2014, the issue of bush fire management was raised. Specifically Ms Davidson requested that the Applicant address management of the Project Site for bush fire safety.

The Tenterfield Shire Council mapping of *Bush Fire Prone Land* in the vicinity of the Project Site is displayed on **Figure 1**. The mapping indicates that the Project Site is located on bush fire prone land and therefore needs to satisfy the objectives of Rural Fire Service's guideline *Planning for Bush Fire Protection 2006* (RFS, 2006). These objectives are to:

- afford occupants of any building adequate protection from exposure to a bush fire;
- provide for a defendable space to be located around buildings;
- provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;
- ensure that safe operational access and egress for emergency service personnel and residents is available;
- provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the Asset Protection Zone (APZ); and
- ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting).



The Project Site does not include any buildings that may be at risk of fire, however, some mobile earthmoving equipment would continue to be stored at the Project Site. Trucks used for the transport of raw materials would continue to be stored at the Sunnyside Crushing and Screening Plant but would be present at the Project Site from time to time. The Project Site does not have connections to mains supply electricity or natural gas and all fuel storage and machinery maintenance would continue to be undertaken at the Sunnyside Crushing and Screening Plant. The extraction area, roads and overburden stockpiles would provide an area of at least 150m² which would remain disturbed throughout the life of the Proposal and therefore free of any vegetation. This area would provide a defensible APZ for any equipment that remained within the Project Site.

The Applicant implements bush fire mitigation measures and additional measures to assist with bush fire management under existing operations. The following management and mitigation measures would continue to be implemented under the Proposal.

- Ensure any refuelling undertaken at the Project Site is undertaken within a suitable cleared area.
- Ensure vehicles are turned off during refuelling.
- Ensure a no smoking policy is enforced in designated areas of the Project Site.
- Ensure fire extinguishers are maintained within all site vehicles.
- Ensure that a water cart (with suitable pumps and hoses) is available for use on site to assist in extinguishing any fire ignited.
- Ensure that the Quarry Access Road is regularly maintained to ensure safe access and egress from the extraction area in the event an evacuation is called.
- Training undertaken within site induction and regular tool box meetings would be provided to site personnel in relation to specific fire fighting tasks and procedures.
- In the event of a local bush fire event, all personnel would be required to assemble at the designated Emergency Assembly Area adjacent to the southern side of the clay fines area. A head count would be undertaken to confirm all site personnel and visitors are accounted for. At this time, instructions as to specific procedures to be followed, i.e. site protection or evacuation, would be provided in accordance with the Emergency and Evacuation Management Procedures and advice provided by the NSW RFS.

Notwithstanding the preparation and implementation of the above, the Applicant would ensure that all personnel recognise the authority of the NSW RFS and other emergency services, e.g. NSW Police, and adhere to any and all instructions provided by these authorities. Furthermore, access to water storages would be provided to the RFS and any reasonable assistance offered.

The Proposal would not result in an increase to the number and type of ignition sources in the local area. It is acknowledged, however, that the Project Site is located on bush fire prone land (as mapped by the Tenterfield Shire Council). The risk of a fire being initiated on the Project Site and/or detrimental impacts on public safety and assets in the event a local bush fire would continue to be minimised and managed through the implementation of the existing management and mitigation measures.

3. ROADS AND MARITIME SERVICES

Summary of Submission

The response provided by Roads and Maritime Services (RMS) included a formal response to the exhibition of the EIS and the original letter (dated 22 May 2014) that provided the assessment requirements that the RMS recommended be addressed in the EIS. The issues raised in this correspondence are summarised as follows.

1. In the formal response to the exhibition of the EIS, the RMS indicated that they considered that the EIS had not adequately addressed road safety and traffic impacts that may arise on the New England Highway. The response requested that the EIS and Traffic Impact Assessment be updated to include consideration of these impacts, specifically at the intersection of the New England Highway with the access to the Sunnyside Crushing and Screening Plant.

The submission also notes the requirement that any works on the classified road network be designed in accordance with the current Austroads Guidelines, Australian Standards and RMS Supplements and that the Applicant enter into a 'Works Authorisation Deed' with RMS.

2. The formal response to the EIS does not mention the reason for inclusion of the original assessment requirements. It has been inferred that RMS contends that these assessment requirements have not been adequately addressed.

Response

1. As described under point 3 of the response to the issues raised by the Tenterfield Shire Council (Council) the Applicant has agreed to upgrade the intersection at the entrance to the Sunnyside Crushing and Screening Plant in a manner that reflects the discussions with both RMS and Council and which would generally be in accordance with the current Austroads Guidelines, Australian Standards and RMS Supplements. As part of this process, the Applicant would also enter into a 'Works Authorisation Deed' with RMS following the approval of the required applications.

Additional assessment of the intersections of the New England Highway with Old Ballandean Road and of the New England Highway (Rouse Street) with Naas Street in Point 4 of the response to Council (also included as **Appendix 1**), conclude that these intersections would continue to operate with acceptable delays and good Level of Service throughout the proposed life of the Quarry.

Finally, Point 6 of the response to Council included the considerations for cost effective measures that could be applied to upgrade and improve safety at the intersection of Old Ballandean Road and the New England Highway.

2. Table 1.1 of the EIS provides a list of the assessment requirements provided by the various government bodies and the location in the EIS where these items were addressed. The assessment requirements of the RMS and where these were addressed in the EIS have been extracted as **Table 1**.

The Applicant is satisfied that, given the additional information provided in this document and the response to the issues raised by Council, all assessment requirements and issues raised by RMS have been suitably addressed.

Table 1
RMS Environmental Assessment Requirements

Paraphrased Requirements	Section of EIS where issues were addressed
Roads and Maritime Services	
Assess the impact of the existing and proposed development on the state road network with consideration for a 10 year horizon.	4.2
Document the volume and distribution of traffic that would be generated by the Proposal.	2.8
Assess intersection sight distances at key intersections along the primary haul route.	4.2.2.3
Assess existing and proposed access conditions, staff, servicing and parking arrangements.	1.5, 2.8
Provide details of any relevant improvements to road intersections with consideration for the current Austroads Guidelines, particularly; <ul style="list-style-type: none"> • New England Highway & Nass Street intersection. • New England Highway, Bruxner Way and Old Ballandean Road intersection. • New England Highway and Sunnyside Crushing Facility Site access point/s. • Mount Lindesay Road and Old Ballandean Road intersection. • Mount Lindesay Road and Dowe's Quarry access road. 	4.2.2.3
Document proposed traffic management measures that would be implemented during operational periods.	4.2.4
Assess the potential impact on public transport and alternative modes of transport.	4.2.4.2
Assess potential impacts of road traffic noise and dust generation along the identified haulage route.	4.3 and 4.4
Document compliance with any Road Maintenance Contributions Plan.	4.2.3
Consider Clause 16(1) of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007	3.4 and further in 2.8 and 4.2.3

4. OFFICE OF ENVIRONMENT AND HERITAGE

4.1 INTRODUCTION

The submission provided by the OEHL indicated that the Department was satisfied with the Proposal in terms of assessment and potential impacts to the National Parks and Wildlife Service estate, flooding and historic heritage. However, the submission raised a number of issues in relation to the assessment of biodiversity and Aboriginal cultural heritage. These issues are summarised in the following subsections and a response to each issue provided.

4.2 BIODIVERSITY

Summary of Submission

The submission from OEH, as it related to biodiversity, raised six separate issues concerning the information provided in the EIS and the Ecological Assessment Report prepared for the EIS.

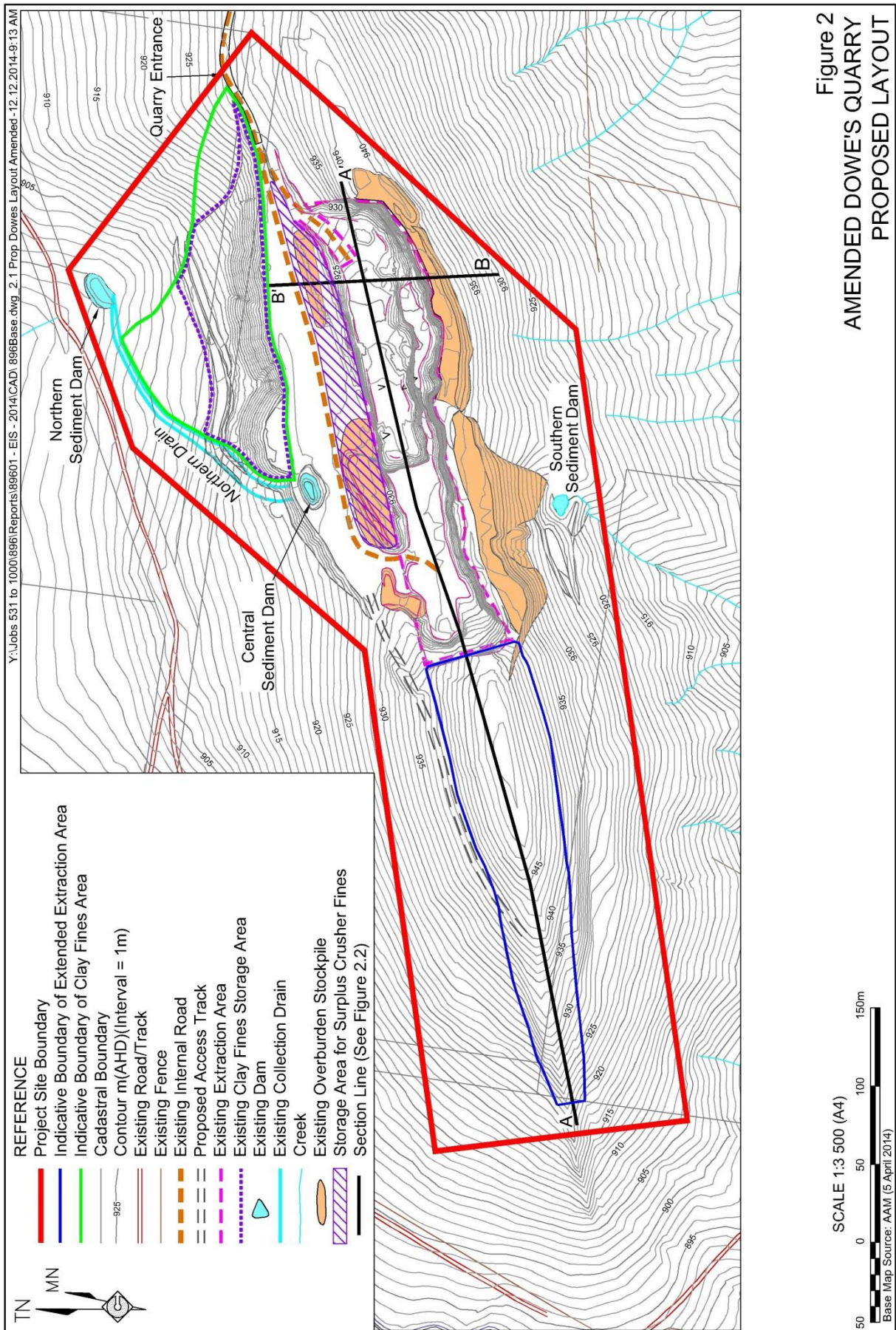
1. Threatened hollow-dependent Fauna – The submission raised a concern that assessment of the significance of potential impacts to local threatened fauna and flora was not adequate due to insufficient characterisation of the local populations of these species through appropriate nocturnal and other surveys. The OEH recommended that additional surveys and assessment be completed and include targeted nocturnal surveys.
2. The submission raised concern that the Ecological Assessment Report did not consider all threatened species that have previously been recorded in the vicinity of the Project Site and which would therefore have potential to occur on site. Additional species that were specifically mentioned include the following.
 - Painted Honeyeater.
 - Spotted Harrier.
 - Turquoise Parrot.
 - McNutts Wattle.
 - Austral Toadflax.
3. The submission also raised concern regarding the lack of reptiles and amphibians recorded in surveys completed within the Project Site which the Department felt was indicative of an inadequate survey effort. Specific reference was made to the Border Thick-tailed Gecko.
4. The submission recommended that the Applicant provide suitable offset lands to compensate for predicted impacts to native vegetation and potential impacts to threatened fauna.
5. The OEH recommended that an *Environmental Management Plan* be included as part of the EIS, and that conditions of approval should include the requirement for spotlighting to be conducted the night before clearing of hollow-bearing trees and the measures specified in the EPA General Terms of Approval and the Ecological Assessment Report regarding biodiversity rehabilitation.
6. The submission referenced several editorial errors in the Ecological Assessment Report.

Response

A teleconference was held with OEH officers on 17 October 2014 to discuss the Proposal and specifically potential habitat impacts associated with removal of hollow-bearing trees and the requirements associated with establishment of a Biodiversity Offset Area (BOA). Following this discussion, the Applicant reconfigured the design of the clay fines area in order to avoid

removal of four hollow-bearing trees. A revised site layout incorporating the redesigned clay fines area is provided **Figure 2**. Based on this revised layout it is now proposed that 1.7ha of native vegetation and five trees determined to be habitat or hollow-bearing trees would be removed. This is reduced from the originally proposed 2.1ha of native vegetation and nine habitat or hollow-bearing trees.

In order to address the issues raised by the OEH, Eco Logical Australia (ELA) was commissioned to complete additional surveys within the Project Site. The field surveys were completed on 28 and 30 October 2014 by Mr Brad Dries, senior ecologist with ELA. A set of additional information was prepared by ELA comprising an overview of the additional surveys and an impact assessment based on the survey results and the recommended proposal for a suitable location for a BOA. This additional information is attached as **Appendix 4**.



A response to the issues raised by the OEH is provided in numbered order below and relies on the information provided by ELA.

1. Targeted surveys, including nocturnal searches, were undertaken by ELA for threatened hollow-dependent fauna. A focus was placed on species raised in discussion with OEH officers during the teleconference. The survey methods used to survey for hollow-dependent fauna are provided in Table 1 of **Appendix 4**. Although not included in targeted searches, the following species were also considered in the assessment completed by ELA.
 - the Masked Owl (*Tyto novaehollandiae*).
 - Barking Owl (*Ninox connivens*).
 - Sooty Owl (*Tyto tenebricosa*).
 - Yellow-bellied Glider (*Petaurus australis*).
 - Squirrel Glider (*Petaurus norfolcensis*).

A summary of the targeted survey results and assessment is presented in **Table 2**. In summary, the additional surveys did not identify any of the targeted species and ELA concluded that there would be no significant impacts upon these species.

2. Targeted surveys for the additional threatened species included in the OEH response were completed by ELA. The survey methods used for these species are provided in Table 1 of **Appendix 4**. A summary of the survey results and assessment is presented in **Table 2**. No individuals of any of these targeted species were identified during the surveys. ELA concluded that existing hollow-bearing trees could provide nesting habitat for the Turquoise Parrot, however potential impacts to this species would remain minimal due to the presence of other species within existing hollows and the abundance of suitable habitat in contiguous vegetation. ELA also concluded that there would be negligible impacts upon the remaining threatened species included in the assessment.

In accordance with Section 5(a) of the *Environmental Planning and Assessment Act 1979* (EP&A Act), an assessment of significance (7 Part Test) was carried out on the Turquoise Parrot as a threatened species considered potentially likely to occur within the Project Site. This assessment is provided in **Appendix 4** and concludes that the Proposal is unlikely to result in significant impact upon this species.

3. Targeted surveys were undertaken for the Border Thick-tailed Gecko with no individuals identified. The survey methods used for these species are provided in Table 1 of **Appendix 4**. A summary of the survey results and assessment is presented in **Table 2**. ELA concluded that as the Proposal would not impact known critical habitat of this species and no individuals were observed, an assessment of significance is not required under either the EP&A Act or the *Environment Protection and Biodiversity Conservation Act 1999*. No other threatened reptiles or amphibian species were identified during the surveys nor were any considered likely to occur.

Table 2
Threatened Species Assessment

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Species	Relevant Listing	Survey Approach	Results	Conclusions
Powerful Owl (<i>Ninox strenua</i>)	Vulnerable (TSC Act)	Targeted surveys including nocturnal searches, hollow suitability assessment	<p>No Powerful Owls were identified during any surveys of the Project Site.</p> <p>Trees with suitable hollows for Powerful Owl breeding occur within the Project Site, however these trees are outside the areas of proposed disturbance.</p> <p>Any indirect impacts from noise, dust and vibration will remain consistent with existing impacts.</p>	It is unlikely that impacts to Powerful Owl will occur outside of negligible indirect impacts caused by the potential loss of 1.7 ha of foraging habitat.
Brush-tailed Phascogale (<i>Phascogale tapoatafa</i>)	Vulnerable (TSC Act)	Targeted surveys including nocturnal searches, hollow suitability assessment	<p>No Brush-tailed Phascogales were identified during any surveys of the Project Site.</p> <p>ELA (2014b) found that hollows within the size range preferred by this species may exist in the disturbance area. However, these trees were being used as habitat by other non-threatened species.</p> <p>Only one hollow was confirmed during the assessment to be of suitable size. This tree was located outside the Project Site.</p> <p>Any indirect impacts from noise, dust and vibration will remain consistent with existing impacts.</p>	The removal of trees containing hollows that may be of suitable size for this species would be unlikely to have a significant impact due to the presence of other non-threatened species within the hollows of these trees at present and the relative abundance of suitable hollows within contiguous vegetation.
Turquoise Parrot (<i>Neophema pulchella</i>)	Vulnerable (TSC Act)	Targeted surveys; hollow suitability assessment	<p>No Turquoise Parrots were identified during any surveys of the Project Site.</p> <p>ELA (2014b) found that hollows within the size range preferred by this species may exist in the disturbance area. However, these trees were being used as habitat by other non-threatened species.</p> <p>Any indirect impacts from noise, dust and vibration will remain consistent with existing impacts.</p>	<p>The removal of four hollow-bearing trees within the disturbance area will impact potential habitat for the Turquoise Parrot.</p> <p>ELA (2014b) considered that this impact would be negligible considering the abundance of other suitable habitat nearby and the presence of other species within the existing hollows.</p>
Painted Honeyeater (<i>Grantiella picta</i>)	Vulnerable (TSC Act)	Targeted surveys including nocturnal searches; mistletoe availability.	<p>No Painted Honeyeaters were identified during any surveys of the Project Site.</p> <p>Mistletoe was recorded on trees outside the proposed disturbance areas.</p> <p>Any indirect impacts from noise, dust and vibration will remain consistent with existing impacts.</p>	ELA (2014b) considered that impacts to the Painted Honeyeaters would be negligible as no recorded mistletoe would be removed through the proposed activities.

Table 1 (Cont'd)
Threatened Species Assessment

Page 2 of 2

Species	Relevant Listing	Survey Approach	Results	Conclusions
Spotted Harrier (<i>Circus assimilis</i>)	Vulnerable (TSC Act)	Targeted surveys including nocturnal searches;	No Spotted Harriers or raptor nests were identified during any surveys of the Project Site. Suitable open grassy woodland habitat occurs within the Project Site.	ELA (2014b) considered that any impacts to potential nesting or foraging habitat for the Spotted Harrier would be negligible.
Austral Toadflax (<i>Thesium australe</i>)	Vulnerable (TSC Act and EPBC Act)	Targeted surveys; searches for host plant Kangaroo Grass (<i>Themeda australis</i>)	Targeted searches identified four tussocks of Kangaroo Grass within the disturbance areas of the Project Site. No Austral Toadflax was identified on any of these individuals.	ELA (2014b) considered there would be no impact to Austral Toadflax given the small number of Kangaroo Grass species identified.
Border Thick-tailed Gecko (<i>Uvidicolus sphyrurus</i>)	Vulnerable (TSC Act and EPBC Act)	Targeted surveys including nocturnal searches; micro-habitat assessment.	No Border Thick-tailed Geckoes were identified during any surveys of the Project Site. Assessment of micro-habitat confirmed that the rocky outcrops within the Project Site may provide shelter for this species. No exfoliating granite or deep leaf litter was present within the Project Site, which is the preferred habitat of this species. Any indirect impacts from noise, dust and vibration will remain consistent with existing impacts.	ELA (2014b) considered there would be minimal impacts to potentially occurring Border Thick-tailed Geckoes based on the absence of exfoliating granite and deep leaf litter.
McNutt's Wattle (<i>Acacia macnuttiana</i>)	Vulnerable (TSC Act and EPBC Act)	Targeted surveys.	No McNutt's Wattles were identified during any surveys of the Project Site.	The Proposal would have no impact on known individuals of this species.
Source: ELA (2014)				

4. The OEH recommended that a Biodiversity Offset Area (BOA) be established to compensate for the removal of native vegetation and the potential impacts to threatened species. Following the reconfiguration of the clay fines area, the removal of native vegetation due to the extension of the extraction area will be limited to 1.7ha and five trees considered to be habitat or hollow-bearing trees will be removed, avoiding impacts to potentially occurring threatened species.

ELA (2014) undertook a biometric field assessment of vegetation within the property owned by Mr Rod Dowe to identify a suitable BOA. Vegetation within the proposed extended extraction area and clay fines area was identified as Forest Ecosystem 42 (New England Blackbutt). A suitable BOA was identified on Mr Dowe's property adjacent to the Bald Rock National Park which contains the same vegetation type as within the proposed extended extraction area and clay fines stockpile. The Applicant has therefore proposed that a BOA of 6.4ha be established through a conservation agreement or similar covenant.

Biometric vegetation plots were also completed within the proposed BOA. These plots identified additional habitat features including the presence of Koala feed trees, exfoliating granite and an array of hollow-bearing trees. These further indicate that the proposed BOA is a suitable offset location. The proposed BOA is displayed in Figure 4 of **Appendix 4**.

ELA also assessed the proposed BOA against the principles for the use of biodiversity offsets in NSW for development that is not State Significant Development (SSD) or State Significant Infrastructure (SSI). This assessment is provided in Table 4 of **Appendix 4** and concludes that the proposed BOA is appropriate to offset any biodiversity impacts relating to the Proposal.

To provide certainty that the proposed BOA was of suitable size to offset the impacts to native vegetation, ELA applied the Credit Calculator for Major Projects and BioBanking to give an indication of the impact credits that would need to be offset and the offset area required to meet these credit requirements for the Forest Ecosystem 42 (New England Blackbutt). The results of this assessment are provided in Table 4 and Table 5 of **Appendix 4** and conclude that the proposed 6.4ha BOA would provide sufficient credits to offset the proposed biodiversity impacts associated with the Proposal.

The Applicant is satisfied that establishment of the proposed BOA would provide a suitable offset for proposed impacts to native vegetation and potentially occurring threatened species within the Project Site. It is proposed that agreements relating to the BOA would be finalised within 12 months of receipt of development consent. This would involve a conservation agreement or similar covenant for the proposed BOA that would preserve the vegetation on that land in perpetuity.

5. It is the view of the Applicant that an *Environmental Management Plan* would be an unnecessary requirement. It should be noted that the Applicant would abide by the description of operations and any operational controls and management measures included in the EIS that specify how environmental issues will be

managed on site together with any specific conditions. In addition, the Applicant has been operating the existing Dowe's Quarry for the past 27 years without significant environmental detriment or complaints from the Tenterfield and district community.

The Applicant is satisfied with the OEH request regarding night-spotting for fauna species prior to the removal of the five trees previously noted by ELA as being either hollow-bearing or significant habitat trees.

The General Terms of Approval already provided by the EPA do not specify conditions with regard to biodiversity issues. Should approval be received, the Applicant would abide by the contents of the EIS including the Ecological Assessment Report and the matters covered in **Appendix 4**.

6. The Applicant notes the editorial errors in the Ecological Assessment Report included with the EIS. Although these errors were present, they have not diminished the opportunity for OEH or any other reader to accurately assess the Proposal.

4.3 ABORIGINAL CULTURAL HERITAGE

Summary of Submission

The submission provided by OEH raised concerns regarding consultation undertaken during preparation of the Aboriginal Cultural Heritage Assessment. Further to the submission, a teleconference was held on 17 October 2014 with officers of OEH to discuss the issues raised and to seek further information. Based on the written submission and the discussions during the teleconference, the principal concerns have been summarised as follows.

1. The OEH raised concerns that the archaeologist did not consult with suitable Aboriginal representatives regarding the development of the assessment methodology or involve Aboriginal stakeholders in field surveys.
2. The OEH response raised concerns that as there is no feedback from the Aboriginal community regarding the Proposal, that the consultation process has been insufficient and that the assessment was not informed by an Aboriginal perspective.
3. The OEH requests that further consultation be completed in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010).

Response

Archaeological Surveys and Reports Pty Ltd (ASR), who was commissioned to undertake the Aboriginal Heritage Assessment Report for the EIS, have compiled some additional information in response to the OEH submission. ASR also completed additional consultation with Ms Helen Duroux, CEO of the Moombahlene Local Aboriginal Land Council (LALC) regarding the 'Leechs Gully Reserve'. Correspondence relating to the 'Leechs Gully Reserve' is included as **Appendix 5**.

A response to the issues raised by the OEH is provided in numbered order below.

1. ASR contends that consultation with Aboriginal stakeholders regarding the development of assessment methodology and involvement in the field survey was not necessary. This conclusion is based on Section 1.4 of the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH, 2011) which states that:

'Consultation must adhere to the requirements set out in clause 80C of the NPW Regulation where:

- *an application for an AHIP will be made, or*
- *undertaking test excavation according to OEH's Code of practice for archaeological investigation of Aboriginal objects in NSW.*

OEH also recommends following these requirements wherever there is any uncertainty a proposed activity could potentially harm any Aboriginal objects or places and the proponent is required to undertake a cultural heritage assessment.'

The Proposal did not require an application for an AHIP or test excavations. In addition, a desktop assessment undertaken prior to the field survey did not indicate the likely presence of artefacts or other items of cultural heritage significance and no cultural material was identified during subsequent field surveys. As a result ASR concluded that, in accordance with the guidelines, consultation with Aboriginal stakeholders regarding the development of the assessment methodology and involvement in field surveys was not required.

2. A comprehensive log of consultation activities undertaken both prior to preparation of the Aboriginal Heritage Assessment Report and in response to the submission and discussion provided by the OEH is provided in **Table 3**.

During consultation, ASR relied upon the *Tenterfield LGA Aboriginal Heritage Study* commissioned by the Tenterfield Shire Council in 2013. This study involved comprehensive consultation with 19 Aboriginal parties likely to have knowledge relevant to the Tenterfield Shire Local Government Area. It was within this report that the 'Leechs Gully Reserve' was identified.

As a result of initial consultation with the various organisations listed in Table 2 on 21 March 2014, ASR identified the following Aboriginal stakeholders for the Proposal.

- Kwiembal Elders Indigenous Group.
- Ngoorabul Elders.
- Moombahlene LALC.
- Ms Natalene Mercy.

A copy of the Aboriginal Heritage Assessment Report was forwarded to each of these stakeholders for review and comment on 5 June 2014.

Responses to requests for information and feedback regarding the report have been received from two registered Aboriginal stakeholders. Ms Natalene Mercy indicated that she was satisfied with the ASR report (in an email dated 25 June 2014). Ms Helen Duroux, CEO of the Moombahlene LALC, indicated that she could not provide feedback on significant sites in the vicinity of the Project Site as she is not a 'Sites Officer'. Ms Duroux indicated that the heritage significance of the 'Leechs Gully Reserve' related to a 4.5 acre area that was lived on by her grandparents and is significant to her family for this reason. The location of the home of Ms Duroux's grandparents, over 1km from the Project Site, does not indicate that any significant Aboriginal heritage value would exist over the Project Site.

Table 3
ASR Consultation Log

Page 1 of 2

Date	Stakeholder(s)	Form of Contact	Comments
21 March 2014	OE&H Planning and Aboriginal Heritage Section - Northeast; The NSW and ACT Registry of the National Native Title Tribunal; Moombahlene (LALC); Tenterfield Shire Council; NTSCORP Limited; Northern Rivers Catchment Management Authority; and The Office of the Registrar, Aboriginal Land Rights Act.	Letter	Initial contact requesting that each organisation provide the names of any registered Aboriginal stakeholders who should be consulted for the Proposal. A total of 19 Aboriginal parties were identified as a result of this consultation.
26 March 2014	AHIMS	Extensive Database Search	Search for sites within a 24km ² area centred on the Project Site. One site, a modified tree, had been recorded in Leechs Gully, however, the map reference places it 2,400m to the northeast of Leechs Gully
2 April 2014		Field Survey	Completed in accordance with the requirements of "Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW". Survey time approximately 7.5 hours
9 April 2014	General public	Advertisement placed in the Tenterfield Star newspaper	The advertisement invited all registered Aboriginal stakeholders with an interest in the Proposal to contact ASR to provide any cultural information specific to the Project Site. No responses were received.
5 June 2014	Registered Aboriginal Stakeholders	Registered Mail	A draft copy of the Archaeological Assessment was sent to each of the 19 registered Aboriginal parties by registered mail. The accompanying correspondence requested that they provide ASR with any additional information that directly related to the Project Site so that it could be taken into consideration in the final report.
10 June 2014	Moombahlene LALC	Telephone	ASR received a telephone message to contact Ms Helen Duroux, CEO of Moombahlene LALC.
16 June 2014	Moombahlene LALC	Telephone	ASR left a message with Moombahlene LALC that their call had been returned.
17 June 2014	Moombahlene LALC	Telephone	Ms Duroux stated that she had wanted Sites Officers to participate in the field survey. ASR explained that under the <i>Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW</i> (OEH 2011) there was no requirement for Aboriginal Sites Officers to be employed in an Archaeological Assessment (see pages 6/7, Section 2.3, Clause 80C of the NPWS Regulation). It was explained that an assessment was based on a "desktop study" of known information; complemented by any additional information provided by the registered stakeholders; and a "ground-proofing" of the Predictive Model for site location.

**Table 2 (Cont'd)
ASR Consultation Log**

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Date	Stakeholder(s)	Form of Contact	Comments
25 June 2014	Ms Natalene Mercy	Email	Email received stating that Ms Mercy was satisfied with the report.
11.55am, 3 November 2014	Moombahlene LALC	Telephone	Left a message on the answering machine asking Ms Duroux, to return the call.
2.07pm, 3 November 2014	Moombahlene LALC	Telephone	ASR telephoned Moombahlene LALC but there was no reply.
2.35pm, 3 November 2014	Moombahlene LALC	Email	Email correspondence to Ms Duroux requested a meeting with anyone directly or indirectly associated with Leechs Gully Mission or who could provide any cultural information associated with the Project Site.
10.47am, 5 November 2014	Moombahlene LALC	Telephone	No reply so ASR left a message with the LALC answering machine.
2.10pm, 6 November 2014	Moombahlene LALC	Telephone	No reply so ASR left a message with the LALC answering machine.
10.05am, 7 November 2014 and 10.12am, 7 November 2014	Moombahlene LALC	Telephone	Two messages recorded on the ASR answering machine from Ms Duroux asking for a return call.
10.55am, 7 November 2014	Moombahlene LALC	Telephone	No reply so ASR left a message with the LALC answering machine.
Afternoon of 7 November 2014	Moombahlene LALC	Telephone	Ms Duroux advised ASR that Leechs Gully was not a mission site but a reserve, and that her grandparents had lived there, but that the land now belonged to the Land Council. Ms Duroux said that she remembered having seen the ASR report but that she had never read it. ASR said that a copy of the report would be sent to her and give her a few days to think about it (before making additional contact).
11.30am, 10 November 2014	Moombahlene LALC	Telephone	No reply so ASR left a message with the LALC answering machine including that the job was now "pretty urgent".
1.12pm, 10 November 2014	Moombahlene LALC	Telephone	ASR asked whether Ms Duroux had read the report yet, to which she replied, "not yet". She added that it would take a few more days yet.
10.55am, 17 November 2014	Moombahlene LALC	Telephone	Ms Duroux said that there was no cultural significance attached to Leechs Gully Reserve other than that her grandparents had lived there. ASR asked Ms Duroux if she could send an email stating that she had read the report and had nothing to add.
11.13am, 17 November 2014	Moombahlene LALC	Email	Ms Duroux provided correspondence to ASR in which she stated that she could not, "ascertain if there are significant sites in the area ... as I am not an Aboriginal Sites Officer" (see Appendix 5)

Source: Archaeological Surveys and Reports 2014

Responses to requests for information and feedback regarding the report have been received from two registered Aboriginal stakeholders. Ms Natalene Mercy indicated that she was satisfied with the ASR report (in an email dated 25 June 2014). Ms Helen Duroux, CEO of the Moombahlene LALC, indicated that she could not provide feedback on significant sites in the vicinity of the Project Site as she is not a 'Sites Officer'. Ms Duroux indicated that the heritage significance of the 'Leechs Gully Reserve' related to a 4.5 acre area that was lived on by her grandparents and is significant to her family for this reason. The location of the home of Ms Duroux's grandparents, over 1km from the Project Site, does not indicate that any significant Aboriginal heritage value would exist over the Project Site.

During consultation for the Proposal, no responses to correspondence provided by ASR were provided by the Kwiembal Elders Indigenous Group or Ngoorabul Elders, who were registered Aboriginal stakeholders. In addition, no additional information was received in response to the public notice advertisement or the public exhibition of the EIS. Without information by way of a response, it is difficult to determine whether these groups have any information relevant to the assessment or that they are, for some reason, withholding this information. It should be noted that the guideline requirements for the time period for interested parties to respond to each request for information was met for all consultation, and exceeded in most cases.

3. Given the detail provided in the consultation log (**Table 3**) and information provided to address issues 1 and 2 above, the Applicant is satisfied with regards to the following.
 - That consultation with the Aboriginal community regarding the Proposal has been satisfactory and has been sufficient to satisfy the requirements of the OEH.
 - That where this is available, registered Aboriginal stakeholders have provided knowledge regarding the Aboriginal cultural heritage values in the vicinity of the Project Site.
 - That no known artefacts, areas or values of Aboriginal Heritage significance would be impacted by the Proposal.
 - Should any currently unknown artefacts or areas of cultural heritage significance be discovered during operations at the Project Site the management measures described in the EIS would be sufficient to limit, as much as practically possible, damage to these items and ensure appropriate management. This would include ongoing consultation with the OEH and registered Aboriginal stakeholders where necessary.

The Applicant is therefore satisfied that no further consultation is required regarding the Proposal.

4.4 OEH COMMENTS ON RESPONSE TO SUBMISSIONS

The information contained within this document was provided to OEH officers for review. A response was received on 12 December 2014 that provided comments in response to the additional information. The OEH response is provided as **Appendix 6**. The OEH was supportive of the information provided and generally satisfied that Applicant had addressed the concerns raised regarding the assessment of potential impacts to biodiversity and Aboriginal heritage for the Proposal. The following additional comments were provided and a response provided immediately following each comment.

Submission Summary and Response

1. The OEH made various recommendations regarding consent conditions for both biodiversity and Aboriginal heritage for the Proposal.

The Applicant is committed to abide by recommendations made in documentation submitted supporting the Proposal. This includes the recommendations made within the Ecological Assessment report and this Response to Submissions. The Applicant does not feel it is necessary to update previously submitted documentation. The Applicant is also satisfied with the recommendations made for conditions regarding Aboriginal heritage (listed as items one through three in the OEH response).

2. The OEH has recommended that the Applicant consult with the OEH in regards to establishing appropriate protections and securing the proposed Biodiversity Offset Area.

The Applicant agrees to consult further with the OEH regarding securing the BOA in perpetuity and respectfully requests that the development consent for the Proposal be conditioned such that the establishment of the BOA is finalised within 12 months of receipt of approval to give the Applicant time to manage the process to establish the BOA.

3. The OEH has recommended the establishment of an Aboriginal Cultural Heritage Education Program for the induction and training of staff and contactors.

The Applicant is committed to incorporating training within induction, ongoing training and regular meetings with all staff and contactors. Given that there are no known items of Aboriginal cultural heritage significance within the Project Site, this training will focus on the management and procedures to be followed in the case where items are unexpectedly discovered. Records are currently kept of all induction and toolbox talk style meetings and these would include reference to training activities in relation to Aboriginal heritage management.

5. NSW OFFICE OF WATER

Submission Summary and Response

The submission provided by the NSW Office of Water (NOW) generally supports the operational controls proposed to be implemented within the Project Site and the capacity to manage groundwater and surface water. The following specific comments were provided.

1. Should groundwater be intercepted at any time that the Applicant must contact the NOW.

Although it is highly unlikely that operations will intercept an underlying aquifer the Applicant would contact the NOW in any instance where this might occur.

2. Should operations occur within 40m of the high bank of any water course that a Controlled Activity Approval be sought and this be discussed with the NOW.

Section 4.1.1 of the EIS describes the general pattern of drainage within and radiating from the Project Site. Drainage from the Project Site generally consists of small, ephemeral watercourses that drain to larger creeks. It is not expected that operations will impact the high bank of any permanent water course and it is not considered that a Controlled Activity Approval will be required.

3. The Applicant notes the NOW's comment regarding the capacity of the proposed sediment dam.

The NOW is satisfied that the enlargement of the existing sediment dam would provide sufficient storage capacity to capture all runoff from the Project Site.

4. The NOW has highlighted the potential for pollution of watercourses resulting from runoff from disturbed areas and uncontrolled discharge from sediment dams during high rainfall events. The NOW has also recommended that a monitoring plan be developed for the Project Site in accordance with the Environment Protection Licence (EPL).

The EPA has provided draft terms of approval in the form of a EPL (also provided to Tenterfield Shire Council). This document includes two requirements that relate to stormwater management. These requirements are summarised as follows.

- *The Applicant must prepare and implement a Soil and Water Management Plan to guide sediment and stormwater controls and management in accordance with the guideline Managing Urban Stormwater: Soils and Construction (Landcom, 2004).*
- *The Applicant must test water quality at the spillways of each of the dams as soon as practicable after overflow commences and not more than 12 hours after overflow has commenced or prior to any controlled discharge has occurred. This monitoring would be completed in order to demonstrate compliance with the concentration limits defined in the Draft EPL.*

The Applicant considers that these measures referred to in NOW's response regarding stormwater management and monitoring within the Project Site are

appropriate although it is not considered necessary to prepare a separate Soil and Water Management Plan for the Project Site considering all water management controls are in place.

6. DEPARTMENT OF TRADE AND INVESTMENT

Submission Summary and Response

The Department of Trade and Investment (DTIRIS) – Mineral Resources Branch (MRB) submission in response to the exhibition of the EIS was supportive of the proposed extension to the Dowe's Quarry and included the following specific comments.

1. MRB highlighted the significance of the Project Site as a hard rock aggregate source in the New England region.

The Applicant notes the comments relating to the regional significance of the resource.

2. The response requested further information regarding the methods used by the Applicant to estimate the remaining resource. MRB highlighted that the Applicant's existing experience with the resource and the operation of the Quarry would enable the Applicant to provide an estimate of the remaining resource and the suitability of the resource for its intended use.

The remaining resource was estimated using the client's experience with the resource and in operating the existing Quarry as well as the length and width of the visible outcropping of the resource along the proposed extension area. A volume of 1.3 million tonnes was provided as a conservative estimate of the remaining resource.

3. MRB requested that a commitment be included in the EIS to provide annual production statistics to DTIRIS.

The Applicant is committed to providing DTIRIS with annual production statistics.