

## Development Assessment Report

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| Panel Reference                                                                             | 2019NTH017 and PPSNTH-13                                                                                                                                                                                                                                                                                                                                              |
| DA Number                                                                                   | DA 2019.101                                                                                                                                                                                                                                                                                                                                                           |
| LGA                                                                                         | Tenterfield                                                                                                                                                                                                                                                                                                                                                           |
| Proposed Development                                                                        | <p>The proposal seeks to increase production from the current approved volume of 150,000 tonnes per year to 230,000 tonnes per year at the existing Dowe's Quarry within an expanded extraction area.</p> <p>Processing activities, involving the crushing and screening of materials using mobile processing plant would also be included in ongoing operations.</p> |
| Street Address                                                                              | <p>Mt Lindesay Road, Tenterfield.</p> <p>Lots 308, 309 DP 751540<br/> Lots 3,4 DP 42044<br/> Lots 239, 244, 246, 260 DP 751540<br/> Lots 1,2,3,4 DP 1092215</p>                                                                                                                                                                                                       |
| Applicant/Owner                                                                             | <p>Darryl McCarthy Constructions Pty Ltd<br/> PO Box 903<br/> Oxenford QLD 4210</p> <p>R &amp; M Dowe</p>                                                                                                                                                                                                                                                             |
| Date of Lodgement                                                                           | 10 October 2019                                                                                                                                                                                                                                                                                                                                                       |
| Total Number of Submissions                                                                 | <p>Round 1 -32 submissions including 1 group submission with 79 signatories</p> <p>Round 2 – 14 submissions including 1 group submission with 8 signatories</p>                                                                                                                                                                                                       |
| Recommendation                                                                              | Approval                                                                                                                                                                                                                                                                                                                                                              |
| Regional Development Criteria (Schedule 7 of the SEPP (State and Regional Development) 2011 | <p>Clause 7 particular designated development.</p> <p>Development for the purposes of extractive industries, which meet the requirements for designated development under clause 19 of Schedule 3 to the <i>Environmental Planning and Assessment Regulation 2000</i></p>                                                                                             |
| List of all relevant 4.15(1) matters                                                        | <p>S4.15(1)(a) Matters</p> <ul style="list-style-type: none"> <li>• SEPP 33 Hazardous and Offensive Development</li> <li>• SEPP 44 Koala Habitat Protection</li> <li>• SEPP 55 Remediation of Land</li> <li>• SEPP Mining &amp; Petroleum and Extractive Industries 2007</li> <li>• Tenterfield Local Environmental Plan 2013</li> </ul>                              |

|                                                                             |                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                             | <ul style="list-style-type: none"> <li>• New England North West Regional Plan 2036</li> <li>• Tenterfield Local Strategic Planning Statement 2040</li> </ul>                                                                                                                                                                                           |
| List all documents submitted with this report for the panel's consideration | <p>Annexure A – Associated Plans and Reports</p> <p>Annexure B – Recommended Conditions of Consent</p> <p>Annexure C – Agency Responses</p> <p>Annexure D – Submissions</p> <p>Annexure E - Applicant's response to the submissions</p> <p>Annexure F – Human Health Risk Assessment for Respirable Crystalline Silica: Expansion of Dowe's Quarry</p> |
| Summary of key submissions                                                  | <p>Air quality (health impacts)</p> <p>Traffic</p> <p>Noise</p>                                                                                                                                                                                                                                                                                        |
| Report prepared by                                                          | Anthony Daintith                                                                                                                                                                                                                                                                                                                                       |
| Report date                                                                 |                                                                                                                                                                                                                                                                                                                                                        |

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Summary of s4.15 matters</b><br><br>Have all recommendations in relation to relevant s4.15 matters been summarised in the Executive Summary of the assessment report?                                                                                                                                                                                                                                                   | Yes |
| <b>Legislative clauses requiring consent authority satisfaction</b><br><br>Have relevant clauses in all applicable environmental planning instruments where the consent authority must be satisfied about a particular matter been listed and relevant recommendations summarised, in the Executive Summary of the assessment report?<br>e.g. Clause 7 of SEPP 55 - Remediation of Land, Clause 4.6(4) of the relevant LEP | Yes |
| <b>Clause 4.6 Exceptions to development standards</b><br><br>If a written request for a contravention to a development standard (clause 4.6 of the LEP) has been received, has it been attached to the assessment report?                                                                                                                                                                                                  | NA  |
| <b>Special Infrastructure Contributions</b><br><br>Does the DA require Special Infrastructure Contributions conditions (S94EF)?                                                                                                                                                                                                                                                                                            | NA  |

|                                                                                                                                                                                                                                                                                                                                                     |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <p>Note: Certain DAs in the Western Sydney Growth Areas Special Contributions Area may require specific Special Infrastructure Contributions (SIC) conditions</p>                                                                                                                                                                                   |            |
| <p><b>Conditions</b></p> <p>Have draft conditions been provided to the Applicant for comment?</p> <p>Note: in order to reduce delays in determinations, the Panel prefer that draft conditions, notwithstanding Council's recommendation, be provided to the Applicant to enable any comments to be considered as part of the assessment report</p> | <p>Yes</p> |

# 1 EXECUTIVE SUMMARY

## 1.1 Reason for Consideration by Joint Regional Planning Panel:

As Designated Development for the purpose of extractive industry, the Proposal is also classified as "Regional Development" under Schedule 7(7) of the *State Environmental Planning Policy (State and Regional Development) 2011* (State and Regional Development SEPP) and therefore determination of the application will be by the Northern Regional Planning Panel (RPP).

## 1.2 Description of Proposed development

The Applicant is seeking development consent for the continued operation and expansion of extraction operations within Dowe's Quarry, which would also include an increase to the total area of disturbance, an increase to annual production and product despatch, campaign-based on-site processing for some products, the backloading of fines material from the Sunnyside Plant and progressive backfilling of over burden and fines within the extraction void.

The activities for which the Applicant is seeking development consent would involve the following:

- Ongoing extraction of quartzose rock within the existing extraction area and a 4.5ha extension of the extraction area, producing up to 230,000 tonnes of rock per year.
- Total extraction for the quarry is not to exceed 4.8 million tonnes.
- Dispatch of not more than 120 laden trucks per week (averaged over a four-week period) with a maximum of 28 laden trucks on any one day;
- Normal product dispatch is limited to weekdays (public holidays excluded) with contingency operations of a Saturday permitted on no more than ten (10) Saturdays per year.
- Campaign crushing and screening on site using mobile processing equipment.
- Transportation of extracted rock to the State road network for delivery to the Sunnyside Crushing and Screening Plant located adjacent to the New England Highway, 10km northwest of Tenterfield or on occasions to alternate locations within or beyond the New England Region.
- Backloading of clay fines and crusher fines from Sunnyside to Dowe's Quarry.
- Progressive emplacement of overburden and returned clay fines within and adjacent to the extraction area.
- Storage of surplus crusher fines from Sunnyside awaiting sale and transportation. Any subsequent transportation of crusher fines from the Quarry Site is not included in the annual production limit;
- Period of Extraction of Material of no more than 25 years from the date of consent; and
- Rehabilitation of the site.

### 1.3 Development History of the Site

The Quarry originally commenced operations in 1987 and is currently operating under a development consent issued by the Joint Regional Planning Panel on 19 March 2015 and subsequently modified on 21 January 2016.

The Quarry has approval to extract up to 150,000 tpa of quartzose material, disturb a total area of 6.7ha and store a range of fine materials generated during the processing of the material at the Applicant's processing plant at Sunnyside, located approximately 10km northwest of Tenterfield.

The existing development consent allows a maximum of 28 truckloads of quartzose material to be transported daily from Dowe's Quarry to Sunnyside Plant with no more than 120 truckloads per week. Transportation operations occur principally Monday to Friday with a contingency allowed for product despatch on no more than 10 Saturdays per calendar year.

The Applicant has identified a total of 4.8 million tonnes of quartzose material within and adjacent to the current approved extraction area. In order to efficiently access and extract the approved and identified resource, a new development application is lodged that would supersede the existing development consent. It is not proposed to extend the life of the quarry, which is currently approved until 25 March 2045.

It is noted that the applicant has identified that existing operations have inadvertently proceeded beyond the approved boundary in the eastern section of the extraction area. This area would be incorporated within the proposed area of disturbance to normalise approved operations.

**Figure 1: Approved layout under development consent DA 2014.078/1**

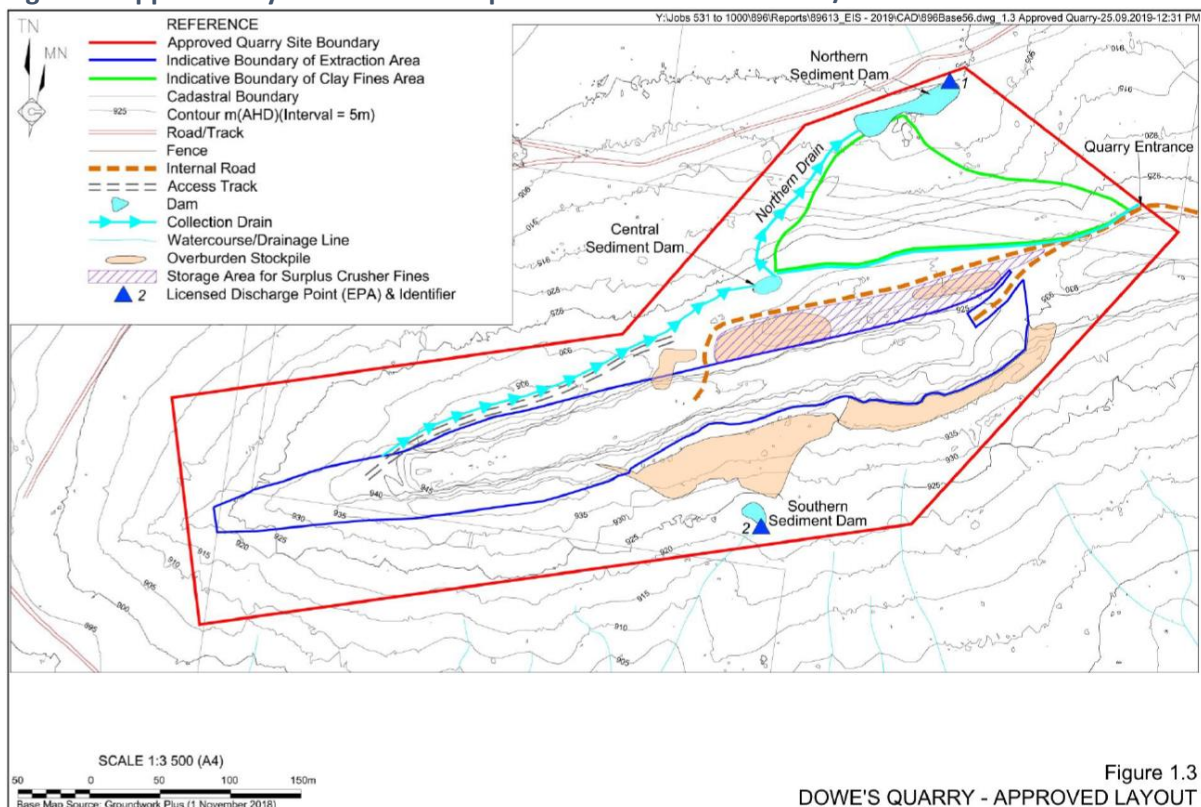
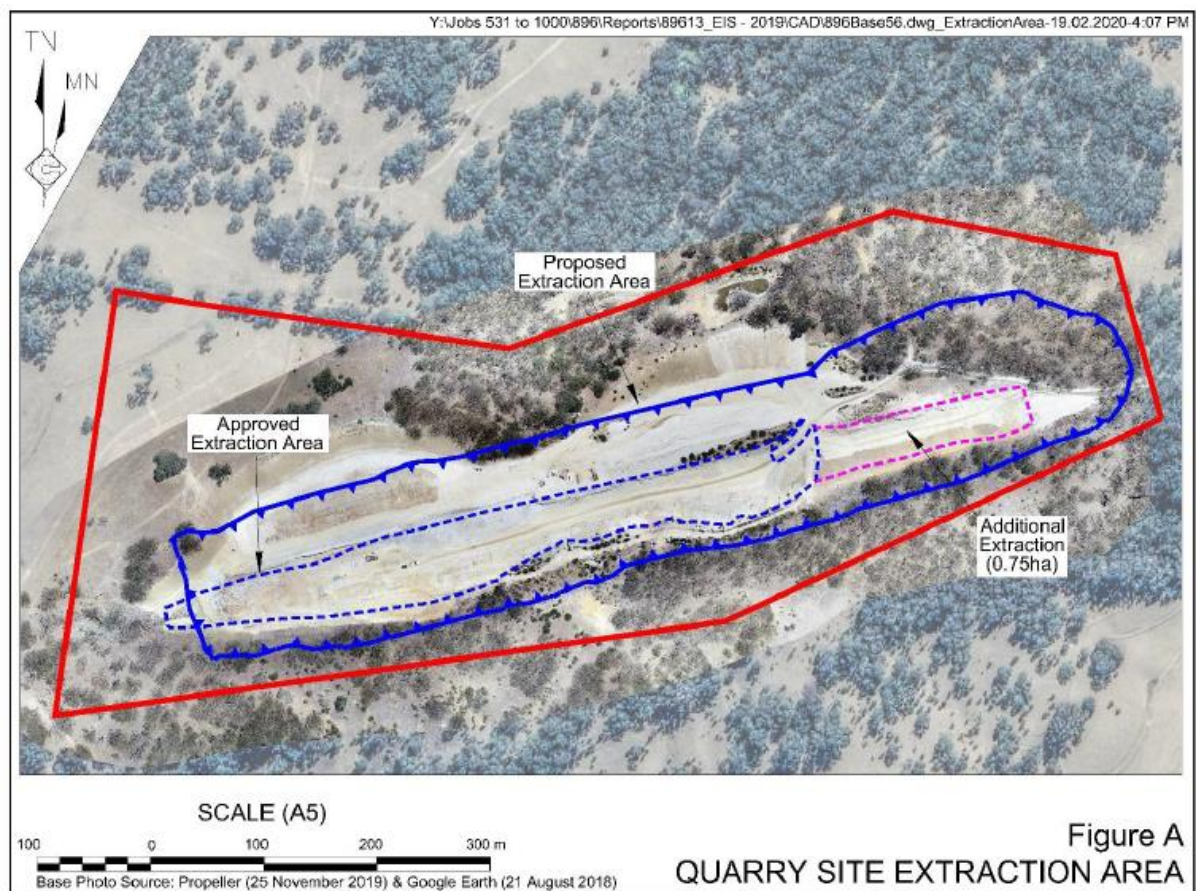


Figure 2: Proposed development to be considered under the current DA



#### 1.4 Compliance with Planning Controls

The subject site is zoned RU1 Primary Production pursuant to the provisions of *Tenterfield Local Environmental Plan 2013*. The use is defined as an 'extractive industry' which is permitted with consent in the RU1 Zone. The proposed development is considered to be consistent with the objectives of the Zone.

#### 1.5 Integrated Development

The Proposal is also classified as "Integrated Development" under Section 4.46 of the *Environmental Planning and Assessment Act 1979* because it would require a variation to the Environment Protection Licence (EPL 20598) issued under the *Protection of the Environment Operations Act 1997* (PEO Act). The issuing authority would be the Environment Protection Authority (EPA). The EPA have issued their General Terms of Approval.

#### 1.6 Designated Development

Development consent in accordance with Part 4 of the *Environment Planning and Assessment Act 1979* (EP&A Act).

The Proposal is classified as "Designated Development" given it is categorised as an "Extractive Industry" and, under Schedule 3(19) of the *Environmental Planning & Assessment Regulation 2000* (EP&A Reg), the annual threshold for extractive material (30 000m<sup>3</sup>/year) would be exceeded. As



Designated Development for the purpose of extractive industry, the Proposal is also classified as "Regional Development" under Schedule 7(7) of the *State Environmental Planning Policy (State and Regional Development) 2011* (State and Regional Development SEPP) and therefore determination of the application will be by the Northern Regional Planning Panel (RPP). In order to obtain development consent, the development application for the Proposal needs to be accompanied by an EIS.

This development consent would supersede DA 2014.078/1, which would be formally surrendered to Council upon commencement of activities proposed under a new development consent.

Assessment requirements for the proposal were sought from the Department of Planning, Industry and Environment (DPIE) and provided on 28 May 2019 under EAR Number 1341. The EIS has been prepared to address the requests from DPIE, Council and other government agencies.

## 1.7 Consultation

The development application was exhibited and notified in accordance with the relevant provisions of the *Environmental Planning & Assessment Regulation, 2000* on 2 occasions.

Refer to Section 4.15 assessment for discussion on the submissions raised.

## 1.8 Recommendation

It is recommended that Development Application DA 2019.101 be approved subject to the conditions of consent as contained in Annexure B.

## 1.9 Annexures

Annexure A – Associated Plans and Reports

Annexure B – Recommended Conditions of Consent;

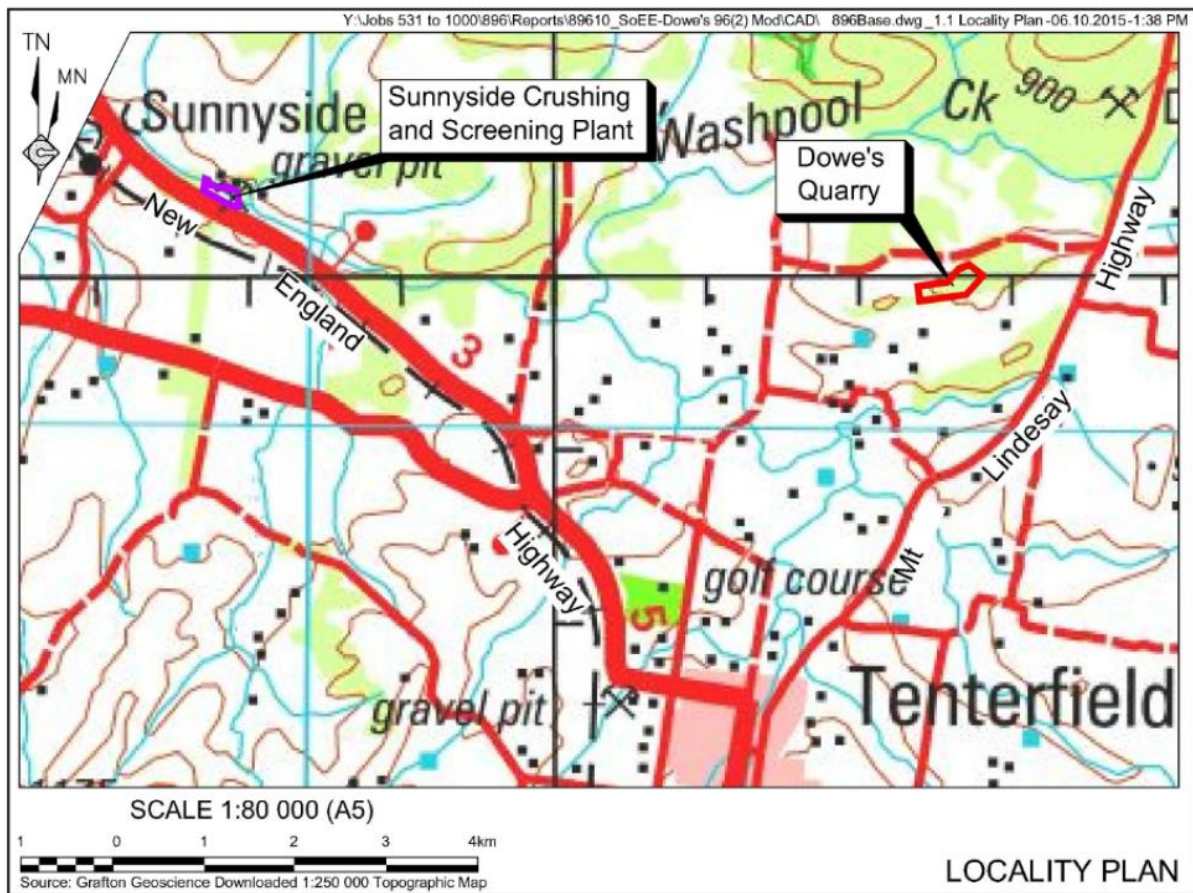
Annexure C – Agency Responses

Annexure D – Submissions

Annexure E - Applicant's response to the submissions

Annexure F – Human Health Risk Assessment for Respirable Crystalline Silica: Expansion of Doves Quarry

Figure 3: Locality Plan



## 2. EVALUATION OF DEVELOPMENT APPLICATION

### 2.1 Proposed Development

The Applicant is seeking development consent for the continued operation and expansion of extraction operations within Dowe's Quarry, which would also include an increase to the total area of disturbance, an increase to annual production and product despatch, campaign-based on-site processing for some products, the backloading of fines material from the Sunnyside Plant and progressive backfilling of over burden and fines within the extraction void.

The activities for which the Applicant is seeking development consent would involve the following.

- Ongoing extraction of quartzose rock within the existing extraction area and a 4.5ha extension of the extraction area, producing up to 230,000 tpa.
- Campaign crushing and screening on site using mobile processing equipment. Onsite processing would be undertaken in response to applicant requirements.
- Ongoing transportation of fragmented and crushed rock to the State road network, (i.e. the New England Highway), for delivery to the Sunnyside Plant, and other destinations. Material would also continue to be delivered locally within Tenterfield for Council-managed road and infrastructure activities and directly to the local community.



- Ongoing transportation of material directly to end points of use, where further processing at the Sunnyside Plant is not required.
- Ongoing backloading of clay fines and crusher fines from the Sunnyside Plant to the Quarry;
- Maintaining the existing maximum number of daily truck loads through progressive introduction of a fleet of high mass limit trucks able to transport up to 50 tonnes of material in each truck. The increased truck capacity results in up to 230 000tpa of materials being transported from the site without any increase in the currently approved daily truck movements.
- Progressive emplacement of overburden and fines within and adjacent to the extraction area.
- Progressive and final rehabilitation of the Quarry to develop a landform suitable for native vegetation conservation.

## 2.2 Existing Operations

The Quarry has been operating in this location since 1987. The existing operations are approved under Development Consent 2014.078 (DA 2014.078), granted in March 2015. A modification to DA 2014.078 was approved in January 2016.

The Quarry has approval to extract up to 150,000 tpa of quartzose material, disturb a total area of 6.7ha and store a range of fine materials generated during the processing of the material at the Applicant's processing plant at Sunnyside, located approximately 10km northwest of Tenterfield. The existing development consent allows a maximum of 28 truckloads of quartzose material to be transported daily from Dowe's Quarry to Sunnyside with no more than 120 truckloads per week. Transportation operations occur principally Monday to Friday with a contingency allowed for product despatch on no more than 10 Saturdays per calendar year.

The following activities are currently undertaken within the Quarry Site.

- Vegetation clearing and soil stockpiling (intermittently).
- Removal and stockpiling of any overburden and eventual use in rehabilitation.
- Drilling and blasting of quartzose rock.
- Oversize rock reduction through the use of a hydraulic hammer.
- Loading and despatch of extracted rock for transportation to the Sunnyside Plant for processing.
- Stockpiling of clay fines and any additional fines that are back-loaded from the Sunnyside Plant.
- Progressive and final rehabilitation.

Following are photos of the current operations taken 11 June 2020.







### 2.3 Land ownership

The existing Quarry Site is located on rural land within Lots 308 and 309 DP 751540, Lots 3 and 4 DP 42044 and Lots 239 and 260 DP 751540. Under the Proposal, the quarry Site would extend into Lots 1 and 2 DP1092215 and Lot 244 DP751540. Quarry Site access would be provided by a Quarry access road which traverses Lots 3 and 4 DP1092215, Lot 246 DP751540 and Lot 245 DP751540 prior to entering the Quarry Site. Lot 245 DP751540 is Crown land dedicated as a travelling stock route. Access across this lot is permitted in accordance with Section 75 of the *Local Land Services Act 2013*. The boundary of the Quarry Site has been determined principally to define an area within a polygon in which all activities are proposed, recognising that not all land within the Quarry Site would be disturbed. The Quarry Site which covers approximately 26.8ha of land owned by R. and M. Dowe is leased by the Applicant. A total of approximately 16.4ha of land is proposed to be disturbed throughout the life of the Quarry. The northern boundary of the Quarry Site coincides with a Crown Road that traverses Lot 308 DP 751540. The following figures displays the land titles within and adjacent to the Quarry.

Figure 4: Quarry Site Access

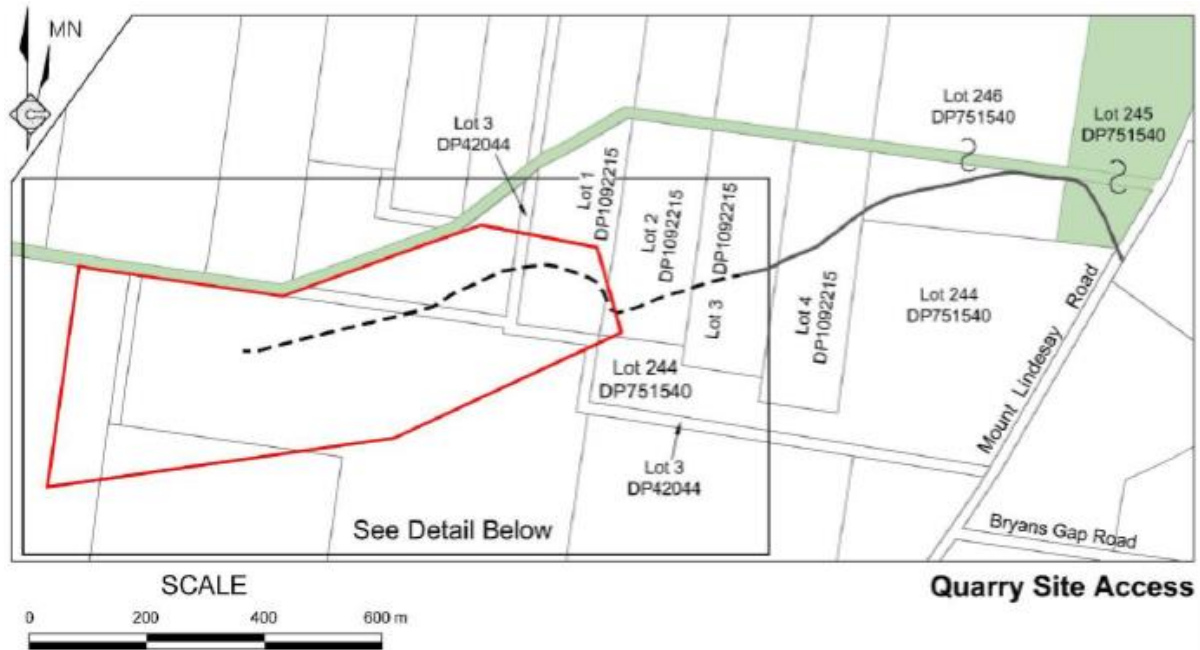
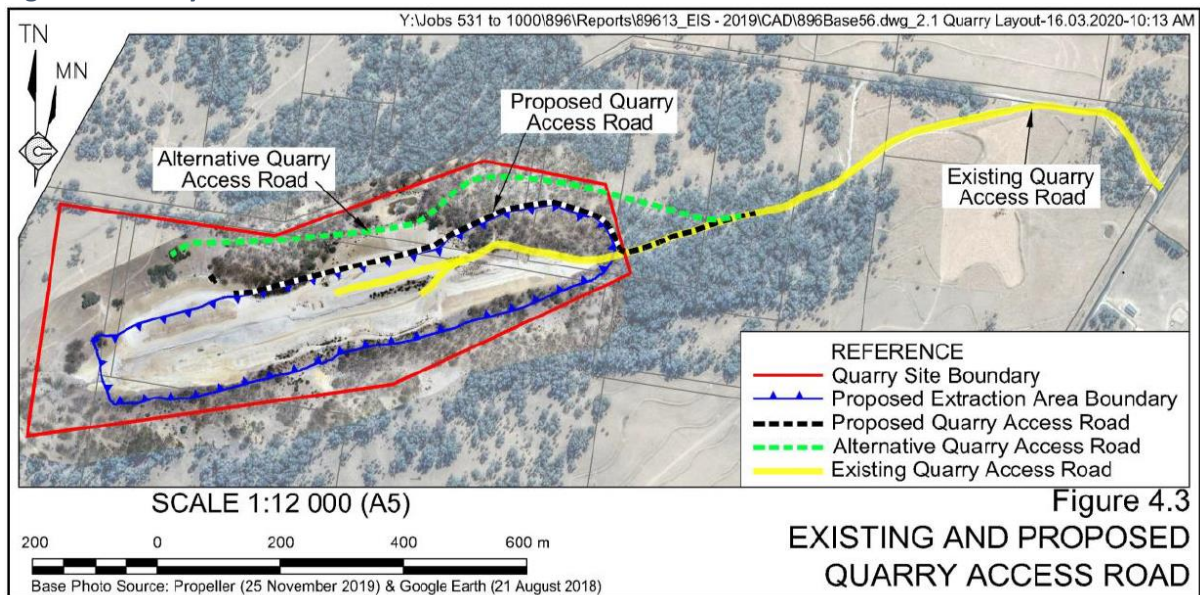


Figure 5: Quarry Site and its Access



## 2.4 Site Description

The existing Quarry Site is located on rural land within Lots 308 and 309 DP 751540, Lots 3 and 4 DP 42044 and Lots 239 and 260 DP 751540. Under the Proposal, the Quarry Site would extend into Lots 1 and 2 DP1092215 and Lot 244 DP751540. Quarry Site access would be provided by a Quarry access road which traverses parts of Lots 3 and 4 DP1092215, Lot 246 DP751540 and Lot 245 DP751540 prior to entering the Quarry Site. Lot 245 DP751540 is Crown land dedicated as a travelling stock route. Access across this lot is permitted in accordance with Section 75 of the Local Land Services Act 2013. The boundary of the Quarry Site has been determined principally to define an area within a polygon in which all activities are proposed, recognising that not all land within the Quarry Site would be disturbed. The Quarry Site which covers approximately 26.8ha of land owned by R. and M. Dowe is leased by the Applicant. A total of approximately 16.4ha of land is proposed to be disturbed throughout



the life of the Quarry. The northern boundary of the Quarry Site coincides with a Crown Road that traverses Lot 308 DP 751540.

## 2.5 Statutory Development Assessment Framework

### COMMONWEALTH LEGISLATION

#### Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) covers 'matters of national environmental significance' (MNES) that include:

- world heritage properties;
- wetlands listed under the Ramsar Convention;
- listed threatened species and ecological communities;
- listed migratory species protected under international agreements;
- nuclear actions;
- the Commonwealth marine environment; and
- National heritage places.

Under the EPBC Act, if a project has the potential to have a significant impact on a matter of national environmental significance, it is required to be referred to the Commonwealth Department of the Environment and Energy for assessment as to whether it represents a 'controlled action' and therefore requires approval from the Minister for the Environment.

The ecological assessment undertaken by Eco Logical Australia (ELA) (2019) has concluded that significant impacts to MNES are not anticipated and referral of the Proposal to the Commonwealth Department of the Environment and Energy is not required. An assessment of potential biodiversity impacts was included in the EIS and supported by a targeted threatened species search for species credits that were unable to be surveyed for during the initial surveys carried out for the Biodiversity Development Assessment Report (BDAR).

### NSW LEGISLATION

The key NSW legislation relating to the approvals and licences required for the Proposal are identified and discussed as follows.

- *Environmental Planning and Assessment Act 1979 (EP&A Act)*
- *Protection of the Environment Operations Act 1997 (POEO Act)*
- *Biodiversity Conservation Act 2016 (BC Act)*
- *National Parks and Wildlife Act 1974 (NPW Act)*



## Environmental Planning and Assessment Act 1979

The EP&A Act provides the framework for the assessment and determination of development in NSW and is administered by the Department of Planning, Industry and Environment (DPIE).

Extractive industry is permitted with development consent on land zoned RU1 Primary Production under the *Tenterfield Local Environmental Plan 2013*. Development consent for the Proposal is being sought in accordance with Part 4, Division 4.1 of the EP&A Act and will need to be evaluated in accordance with Section 4.15 of the EP&A Act.

As an extractive industry with an annual production rate greater than 30,000m<sup>3</sup> per annum, the Proposal is classified as "designated development" under Clause 19 of Schedule 3 of the *Environmental Planning and Assessment Regulation 2000*. As designated development for the purpose of an extractive industry, the application is also classified as Regionally Significant Development under Schedule 7 of the *State Environmental Planning Policy (State and Regional Development) 2011* and the consent authority for the application will be the Northern Regional Planning Panel in accordance with Section 4.5(b) of the EP&A Act.

The Proposal is also classified as 'integrated development' in accordance with Division 4.8 of the EP&A Act as a variation to Environment Protection Licence (EPL) 20598 would be required. Therefore, the application has been referred to the Environment Protection Authority (EPA), and in accordance with Section 4.47 of the EP&A Act, Council must obtain general terms of approval from the EPA prior to approving the application (which has been obtained from the EPA). Any consent must be consistent with those general terms of approval.

## Protection of the Environment Operations Act 1997

The POEO Act provides the legislative and administrative framework to protect, restore and enhance the quality of the environment in NSW by reducing risks to human health and the preventing the degradation of the environment from development and other relevant activities. The most significant element of the legislation with regard to the Proposal is the management of Environment Protection Licences (EPL). An EPL is required to authorise the carrying out of any 'Scheduled Activities'. As land-based extractive industry, the existing operation is classified as a 'Scheduled Activity' under Schedule 1(19) of the POEO Act and therefore operates in accordance with EPL 20598.

As noted above, the EPA has issued the general terms of approval, for a variation to EPL 20598.

## Biodiversity Conservation Act 2016

The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

The Applicant has considered opportunities to minimise impacts to native vegetation for the Proposal. Residual impacts to biodiversity would include removal of approximately 6.41ha of native vegetation. This impact triggers the Biodiversity Offset Scheme and therefore the residual impacts have been assessed in accordance with the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report (BDAR) prepared by Ecological Australia. Residual impacts to biodiversity values would be offset in accordance with the BC Act.

BCD of DPIE supports the proposed staging of the development and the required biodiversity offset credits for each stage.

## National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NP&W Act) aims to manage and conserve nature, objects, places and features that have ecological and cultural value. The NP&W Act is administered and enforced by the Biodiversity Conservation Division of the DPIE (BCD).

Aboriginal places and objects are protected under the NP&W Act. The Director-General has a database of information and records regarding Aboriginal objects whose existence and location have been reported, known as the Aboriginal Heritage Information Management System (AHIMS). An Aboriginal Heritage Impact Permit (AHIP) is required for consent to destroy, deface or damage Aboriginal object or Aboriginal place.

No Aboriginal places or objects of significance have been identified within the Quarry Site and the available Aboriginal history of the LGA provided in the Tenterfield LGA Aboriginal Heritage Study (AMBS, 2013) indicates it is not likely that Aboriginal places or objects would be found within the Quarry Site.

An Aboriginal Cultural Heritage Assessment was prepared by McCardle Cultural Heritage Pty Ltd. The recommendations are listed as follows.

### 9. RECOMMENDATIONS

#### 9.1 GENERAL

1. *The persons responsible for the management of ensile works will ensure that all staff, contractors and others involved in construction and maintenance related activities are made aware of the statutory legislation protecting sites and places of significance. Of particular importance is the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010, under the National Parks and Wildlife Act 1974;*
2. *Cultural heritage awareness will be included in site Inductions, forming part of the staff training process. The matters to be presented in the induction will be prepared in consultation with the RAPs and an archaeologist;*
3. *Should any Aboriginal objects be uncovered during works (unexpected finds), all work will cease at that location immediately, a 10-metre buffer around the artefact(s) will be tapped off with high visibility tape/fencing (works may proceed outside the buffer), and the Environmental Line contacted; and*
4. *Should human skeletal remains be uncovered during works, all works will cease at that location, a 50-metre buffer around the remains will be tapped off with high visibility tape/fencing (works may proceed outside the buffer), and the local Police contacted immediately.*

## 2.6 Environmental Planning & Assessment Act, 1979 – Section 4.15 Assessment

### S4.15(1)(a)(i) Any Environmental Planning Instrument

#### **STATE ENVIRONMENTAL PLANNING POLICIES**

##### State Environmental Planning Policy (State and Regional Development) 2011

One of the purposes of this State Environmental Planning Policy (SEPP) is to provide the basis for development to be declared 'regionally significant development' and to further confer the function of a regional planning panel to determine development applications. As designated development for the purpose of extractive industry, the Quarry is also regional development under this SEPP and therefore determination of the application will be by the Northern Regional Planning Panel.

##### State Environmental Planning Policy No. 33 - Hazardous and Offensive Development (SEPP 33)

Hazardous and offensive industries, and potentially hazardous and offensive industries, relate to industries that, without the implementation of appropriate impact minimisation measures, would, or potentially would, pose a significant risk in relation to the locality, to human health, life or property, or to the biophysical environment.

The hazardous substances and dangerous goods to be held or used within the Quarry Site are required to be identified and classified in accordance with the risk screening method contained within the document entitled Hazardous and Offensive Development Application Guidelines- Applying SEPP 33 (DP&I, 2011). Hazardous materials are defined within DP&I (2011) as substances falling within the classification of the Australian Code for Transportation of Dangerous Goods by Road and Rail (Dangerous Goods Code), (National Transport Commission, 2011). The substances relevant to this policy are primarily diesel and ammonium nitrate.

The Proposal would involve the use of diesel fuel, a Class 3 Cl combustible liquid, and small amounts of other hydrocarbons including lubricating oils and combustible liquids. As the diesel fuel and lubricating oils and greases would not be stored on site, SEPP 33 does not require these to be considered further.

Ammonium nitrate would not be stored on site, rather it would be transported to the Quarry Site for blasting on the day of the blast. As the quantity required for each blast does not exceed the relevant thresholds for Class 5 .1 materials, this does not need to be considered further.

As no hazardous materials would be stored on the Quarry Site, no further consideration of SEPP 33 is required.

##### State Environmental Planning Policy No 44 - Koala Habitat Protection

The proposed development is located within a Local Government Area to which SEPP 44 applies. The identification of an area of land as Potential Koala Habitat is determined by the presence of primary koala-food tree species. These species are listed under Schedule 2 of SEPP 44: Koala Habitat Protection.

Potential Koala Habitat is defined as areas where the tree species listed under Schedule 2 constitute at least 15% of the total number of trees in the upper and lower strata of the tree component.



The Schedule 2 Primary Preferred food species occurring in the Tenterfield LGA are: *Eucalyptus punctata* (Grey Gum), *E. microcorys* (Tallowwood), *E. robusta* (Swamp Mahogany), *E. tereticornis* (Forest Red Gum) and *E. viminalis* (Manna Gum).

The subject land does not contain any koala feed trees listed on Schedule 2 of SEPP No. 44, hence is not Potential Koala Habitat. Therefore, assessment for Core Koala Habitat is not required.

No further provisions of SEPP 44 are relevant to the proposal.

### State Environmental Planning Policy No. 55 - Remediation of Land (SEPP 55)

SEPP 55 aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. In particular, this policy requires consideration of whether a development requires a consent for remediation works or not and, where warranted, requires that remediation works meet certain standards and notification requirements.

As the areas proposed for disturbance within the Quarry Site have previously been used only for extractive industry or minor grazing cattle and passive nature conservation, it is highly unlikely that no contaminated land occurs on the Quarry Site.

### State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

The SEPP specifies matters requiring consideration in the assessment of any mining, petroleum production and extractive industry development, as defined in NSW legislation. A summary of the matters that the consent authority needs to consider when assessing a new or modified proposal and where these have been addressed in this document is provided in Table 3.1 in the EIS.

Clause 7(3) of the SEPP permits the development with consent on the subject land and in accordance with the provisions of Clause 12 given consideration to the following matters:

#### **Cl.12 Compatibility of proposed mine, petroleum production or extractive industry with other land uses**

The application proposes changes to the approved quarry on the site (including increased production levels, quarry area and crushing). Truck movements are proposed to remain the same from the current approval in place.

The land uses surrounding the quarry site include light grazing, pasture improvement and dwelling houses.

Based on the assessment of the proposal, input from the relevant government agencies, the proposed changes to the quarry as part of this Development Applicant are considered compatible with other land uses.

#### **Cl.12A Consideration of voluntary land acquisition and mitigation policy**

Not applicable to this proposal.

#### **Cl.12AB Non-discretionary development standards for mining**

The EPA has issued their GTAs with respect to proposal that covers off on noise, air quality & vibration.

#### **Cl.13 Compatibility of proposed development with mining, petroleum production or extractive industry**

The proposed expansion of the quarry is not likely to have a significant negative impact on existing uses and approved uses of land in the vicinity of the development and is not likely to have a significant impact on current or future extraction or recovery of minerals, petroleum or extractive materials. There are no other extractive industries approved in the vicinity and the proposed development is considered to be compatible with the existing rural environment.

#### **Cl.14 Natural Resource Management and environmental management**

These matters have been considered in the assessment of the Development Application. Relevant government agencies have assessed these matters and have provided appropriate conditions to be included in the consent.

#### **Cl. 15 Resource Recovery**

The efficiency of resource recovery and the reuse or recycling of material as outlined by the application is considered acceptable.

#### **Cl. 16 Transport**

The proposal seeks to increase the annual rate of transportation of quartzose rock from 150 000 tonnes per year to 230 000 tonnes per year. No changes are proposed to the transport routes used by the trucks. There is no proposal to increase the traffic movements as a result of the proposal.

Transport for NSW have indicated that they are supportive of the proposal (see Government Agency submissions for further details).

#### **Cl. 17 Rehabilitation**

Section 2.14 of the EIS outlines the proposed rehabilitation measures proposed for the quarry. The measures proposed are considered acceptable.

#### **State Environmental Planning Policy (Primary Production and Rural Development) 2019**

The aims of this SEPP (the "Primary Production and Rural Lands SEPP") are to facilitate development on rural land that is orderly and economic, promotes the social, economic and environmental welfare of the State and avoids land use conflicts with existing agriculture. It also allows government authorities to identify State significant agricultural land and ensure the ongoing viability of agriculture in the State.

Specifically, and as described in Clause 10 the objectives of the Primary Production and Rural Lands SEPP are to provide for the protection of agricultural land:

- *that is of State or regional agricultural significance, and*

- *that may be subject to demand for uses that are not compatible with agriculture, and*
- *if the protection will result in a public benefit.*

The Proposal is considered with respect to these aims.

The land that would be affected by the Proposal has not been identified as State or regionally significant agricultural land by Schedule 1 of the Primary Production and Rural Lands SEPP.

- The Proposal would not impact on any additional land currently managed for agriculture. As demonstrated at numerous other quarry sites where agricultural activities are undertaken concurrently within extractive industry, the Proposal would not be incompatible with continued agricultural land use surrounding the Quarry Site.
- The protection of the land that is the subject of the Proposal would not provide any public benefit. The employment and local economic stimulus that would be generated by the Proposal is considered to be of wider public benefit.

## **Regional Environmental Plans**

### **The New England North West Regional Plan 2036**

#### **Direction 4 – Sustainably manage mineral resources**

##### **Actions**

- 4.1 Consult with the NSW Division of Resources and Geoscience when assessing applications for land use changes (strategic land use planning, rezoning and planning proposals) and new developments or expansions.*

No land use change is proposed. The proposed expansion of the Dowes Quarry has been notified to all of the relevant government agencies for comment.

- 4.2 Protect areas of mineral and energy resource potential through local strategies and local environmental plans.*

There is no specific local strategies of the LEP that specifically provides a protection around the Dowes Quarry.

- 4.3 Protect infrastructure that facilitates mining from development that could affect current or future extraction.*

There is no specific local strategies of the LEP that specifically provides a protection around the Dowes Quarry.

## Local Environmental Plans

### Tenterfield Local Environmental Plan (LEP) 2013

The current Tenterfield Local Environmental Plan (LEP) which was gazetted in 2013 and guides development in the Tenterfield Shire LGA by encouraging the proper management, development and conservation of natural resources and the built environment. The Quarry Site is located on land zoned RU1 Primary Production under the LEP.

Following is an assessment of the objectives of the zone with respect to the proposed development:

***To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.***

The land that is the subject of the Proposal has been used in the past for minor grazing and stock sheltering. The skeletal soils within the bulk of the Quarry Site would only allow for grazing with limitations, forestry and nature conservation. The proposed use of the land for extractive industry provides productive use of these natural resources. The land would be returned to minor grazing, stock sheltering and passive nature conservation at the end of project life with no significant change in land capability.

***To encourage diversity in primary industry enterprises and systems appropriate for the area.***

The Proposal would provide for the continued supply of a range of ivory-coloured stone products for use in decorative concrete and landscaping products. This industry, i.e. an extractive industry, would continue to operate alongside a variety of primary industry enterprises in the Tenterfield Shire LGA and assist to maintain the economic diversity of the area.

***To minimise the fragmentation and alienation of resource lands.***

The Proposal would allow for the extension and continued operation of the existing quarry along the ridge and would therefore not result in the fragmentation of resource lands.

***To minimise conflict between land uses within this zone and land uses within adjoining zones.***

The land within and immediately surrounding the Quarry Site is zoned RU1 - Primary Production. The Quarry Site is located approximately 2.5km south of Bald Rock National Park and approximately 8km northeast of the town of Tenterfield. It is considered that the Proposal would not result in land use conflicts between the RU1 zone and the E1 Zone - National Parks and Nature Reserves to the north or the town of Tenterfield which has been zoned RU5 Zone - Village.

The proposal is considered to be consistent with the objectives of the zone.

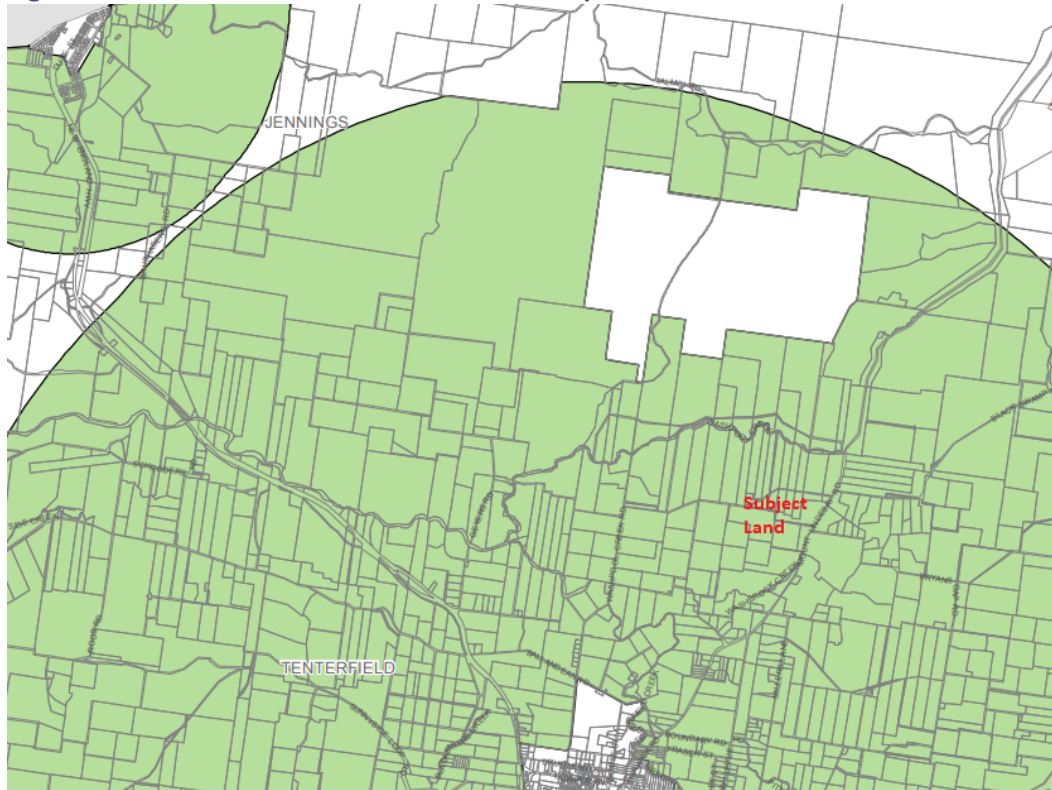
The subject land is zoned RU1 Primary Production under the provisions of Tenterfield LEP 2013. The development is defined as an 'extractive industry' and is permissible with development consent in the RU1 Primary Production zone.

***extractive industry*** means the winning or removal of extractive materials (otherwise than from a mine) by methods such as excavating, dredging, tunnelling or quarrying, including the storing, stockpiling or processing of extractive materials by methods such as recycling, washing, crushing, sawing or separating, but does not include turf farming.

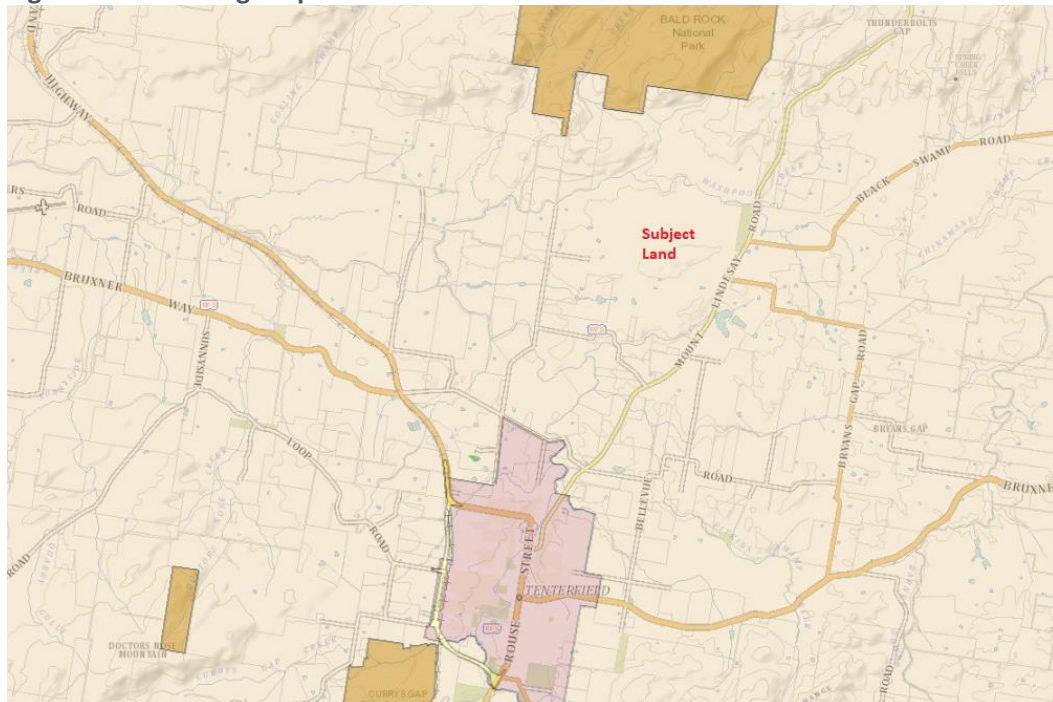


In accordance with Clause 4.2C (Subdivision for residential accommodation in Zone RU1) of the LEP, the subject land is located within the Rural Residential ring around Tenterfield. Any future subdivision of land around the quarry would have to consider the impact of the quarry operations.

**Figure 6: LEP - Rural Residential Subdivision Map**



**Figure 7: LEP Zoning Map**



## **Clause 5.10 Heritage Conservation**

There are no items of environmental heritage located on or near the project site.

### **S4.15(1)(a)(ii) any proposed instrument that is or has been placed on exhibition**

There are no known draft environmental planning instruments applicable to the proposed development.

### **S4.15(1)(a)(iii) any development control plan**

#### **Tenterfield Development Control Plan 2014**

The Tenterfield Development Control Plan (DCP) applies to all land to which the Tenterfield LEP applies and provides development controls for specific types of development. There are no specific controls in the Tenterfield DCP relating to development for extractive industry except for community notification requirements. Chapter 2 of the Tenterfield DCP outlines Council's policy for community notification in the assessment of development applications. In accordance with Table 1 of Chapter 2, neighbour notification has occurred twice for extractive industry within land zoned RU1 - Primary Production. Refer to later section for discussion on the submissions received.

### **S4.15(1)(a)(iiia) any planning agreement**

No planning agreement.

### **S4.15(1)(a)(iv) the regulations (to the extent that they prescribe matters for the purpose of this paragraph)**

There are no matters applicable to this application.

### **S4.15(1)(a)(v) any coastal zone management plan (within the meaning of the Coastal Protection Act, 1979) that apply to the land to which the development application relates**

There are no matters applicable to this application.

### **S4.15(1)(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality**

#### **Context and Setting**

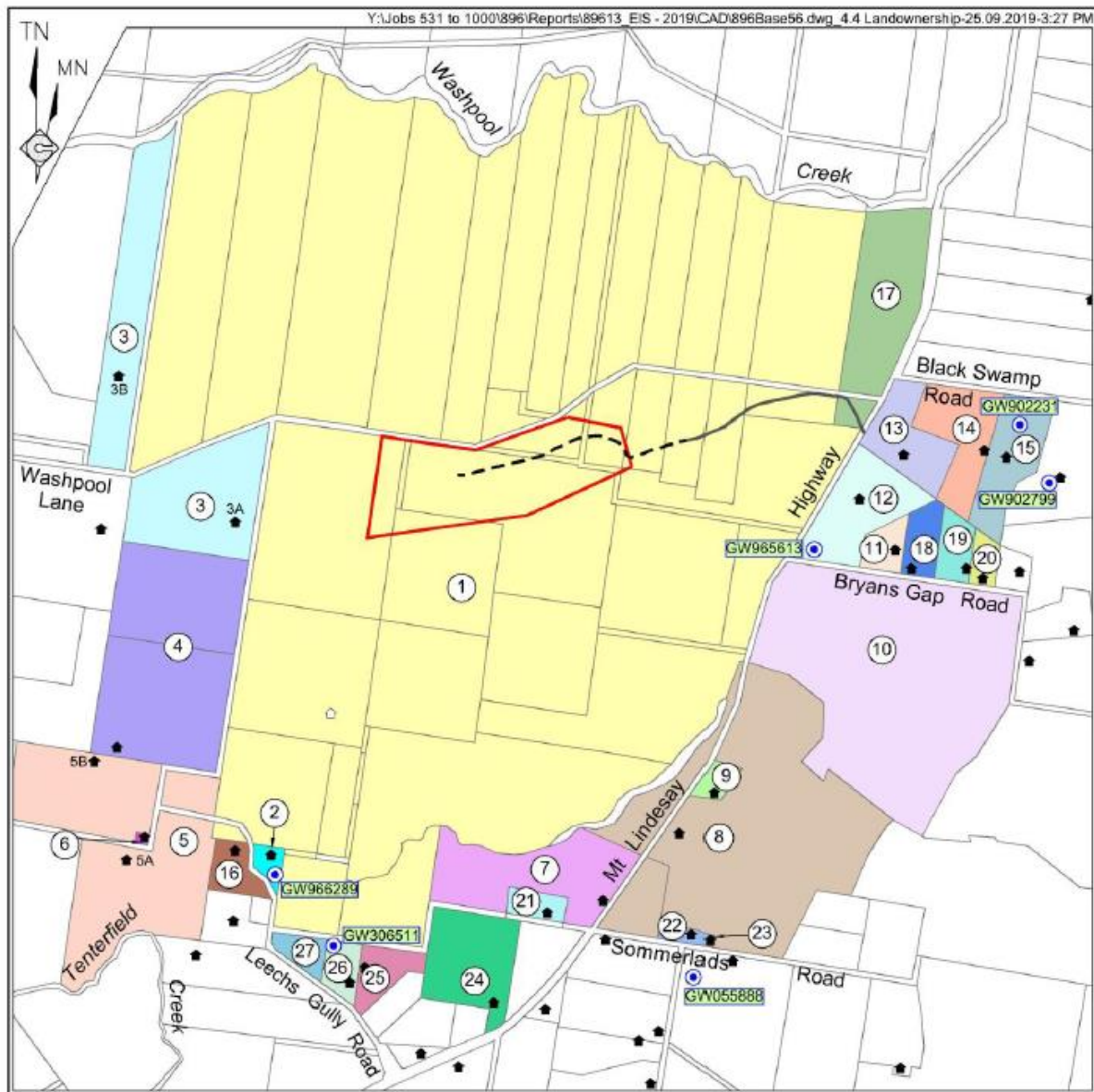
The Quarry Site is currently used principally for the extraction of quartzose rock. The land owner periodically grazes cattle around the margins of the Quarry to control bush fire fuel loads.

The land uses surrounding the Quarry Site include light grazing and pasture improvement. The existing Quarry is surrounded by remnant vegetation with small patches of vegetation extending approximately 1 km to the north to Washpool Creek and further north to Bald Rock National Park.

It is considered that the Proposal would not result in changes to commercial agricultural land uses surrounding the Quarry Site.

The following plan provides a visual representation of landownership in the proximity of the subject land and the location of dwellings.

**Figure 8: Surrounding land ownership**



Note: Numbers identify surrounding landowners.

### Access, Transport and Traffic

A Traffic Impact Assessment for the Proposal has been undertaken by Constructive Solutions.

The application indicates that the existing daily limit on laden truck despatch of 28 trucks per day would be retained and the weekly limit on laden truck despatch of 120 trucks would also be retained but averaged over a four-week period.

The proposal maintains the existing maximum number of daily truck loads through progressive introduction of a fleet of high mass limit trucks able to transport up to 50 tonnes of material in each truck. The increased truck capacity results in up to 230 000tpa of materials being transported from the site without any increase in the currently approved daily truck movements.

The Report concludes:

## 5 CONCLUSION

*Assessment of the proposed operations and the local road network has identified that the Applicant could continue to operate with no significant impact to the road network, local users of the road and in light of potential cumulative traffic impacts provided the mitigation measures are adopted for the life of the project*

*There are some indications of wear on the local road network that require maintenance. Furthermore, there are safety issues which have been identified that should be addressed. These activities may, in part, be funded through the ongoing contributions paid to TSC by the Applicant*

Transport for NSW has reviewed the referred information and provides the following comments to assist Council in making a determination:

- *Roads and Maritime would have no objection to the proposed increase in extraction from 150,000tpa to 230,000tpa provided that there will be no increase in the existing haulage limits of 28 loads/day and 120 loads/week.*
- *Council should be satisfied that the Traffic Impact Assessment (TIA) has adequately considered and addressed all of the impacts of haulage on the safety and efficiency of the road network.*
- *Roads and Maritime's response to the SEARs dated 22 May 2019 requested a swept analysis be undertaken at identified intersections along the haulage routes, at the access to the quarry and crushing plant. This information was not provided so Council should be satisfied that the largest vehicle can undertake turning movements along the haulage routes safely within the existing travel lanes.*
- *The TIA did not consider the operations of the Sunnyside processing facility. Condition 26 Point.1 of Tenterfield Shire Council's development approval dated 26 March 2015 required that in order to retain the northern access further consideration of its use and design will need to be demonstrated and approved by Roads and Maritime. This requirement has not been undertaken and therefore it would seem the development is in breach of its current approval.*
- *Material from the Sunnyside processing facility is being tracked out onto the highway's pavement. This needs to be rectified.*

*All works on the classified (State) road will need to be designed and constructed in accordance with the current Austroads Guidelines, Australian Standards and Roads and Maritime Supplements.*

*The developer will be required to enter into a Works Authorisation Deed (WAD) with Roads and Maritime for any works deemed necessary on the classified (State) road. The developer will be responsible for all costs associated with the works and administration for the WAD.*

*It is recommended that developers familiarise themselves with the requirements of the WAD process. Further information can be accessed using the following link:*

*<http://www.rrns.nsw.gov.au/projects/planning-principles/index.html>*

In terms of the swept analysis recommended to be undertaken at the identified intersections along the haulage routes and at the access to the quarry and crushing plant, Council is satisfied that



intersections are currently acceptable (as per the previous consent issued for the quarry) as there is essentially minimal change (only the proposal to increase the weight of each truck) proposed to the traffic on the road network between the quarry and the processing facility on the highway.

No works are proposed to the classified (state) road as part of this proposal.

In terms of meeting the dust suppression requirements of the EPA, a bitumen seal must be applied and regularly maintained along the entire length of the quarry access road. The seal must be applied prior to the commencement of the project operations.

### Public Domain

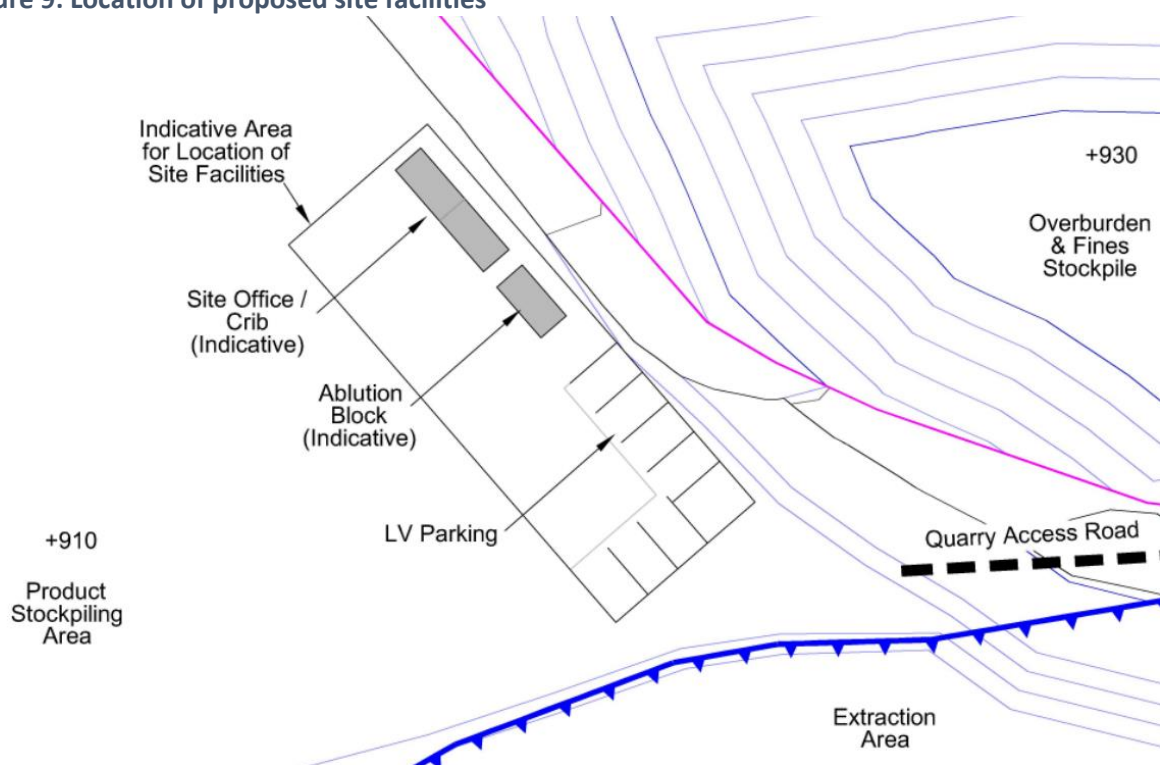
Not applicable to the development.

### Utilities

There are currently no infrastructure, utilities or services located at the Quarry Site.

It is proposed to include a small site office/crib building and ablution building on the site as depicted below.

**Figure 9: Location of proposed site facilities**



### Heritage

There are no listed items under the *Tenterfield Local Environmental Plan 2013*.

An Aboriginal Cultural Heritage Assessment was prepared by McCardle Cultural Heritage Pty Ltd. The recommendations are listed as follows.

## 9. RECOMMENDATIONS

### 9.1 GENERAL

1. *The persons responsible for the management of ensile works will ensure that all staff, contractors and others involved in construction and maintenance related activities are made aware of the statutory legislation protecting sites and places of significance. Of particular importance is the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010, under the National Parks and Wildlife Act 1974;*

2. *Cultural heritage awareness will be included in site Inductions, forming part of the staff training process. The matters to be presented in the induction will be prepared in consultation with the RAPs and an archaeologist;*

3. *Should any Aboriginal objects be uncovered during works (unexpected finds), all work will cease at that location immediately, a 10-metre buffer around the artefact(s) will be tapped off with high visibility tape/fencing (works may proceed outside the buffer), and the Environmental Line contacted; and*

4. *Should human skeletal remains be uncovered during works, all works will cease at that location, a 50-metre buffer around the remains will be tapped off with high visibility tape/fencing (works may proceed outside the buffer), and the local Police contacted immediately.*

### Air & Microclimate

An Air Quality Assessment was prepared by Northstar Air Quality Pty Ltd.

This Assessment identified the key emissions to air during the operational phase are considered to include:

- Particulate emissions from the extraction, processing and storage of the resource and product;
- Wheel-generated particulate emissions from the haulage of recovered and product materials on unpaved and paved road surfaces;
- Blasting emissions of particulate and oxides of nitrogen; and,
- Wind erosion of exposed surfaces.
- Emissions of blast fume (including oxides of nitrogen) may also be anticipated, although given the distances between the Quarry Site and nearest receptors (minimum 600 m - refer Section 4.2), and the low frequency of blasting (once per month), impacts are likely to be minimal and have not been considered further.
- Emissions of greenhouse gases (GHG) would also be generated through the combustion of fuel in mobile plant and equipment during the operation of the Quarry Emissions of GHG may also be generated through the off-site transport of product to markets and through employee vehicle use.

The Report provides the following conclusions:

#### 9.1 AIR QUALITY

*A detailed air quality impact assessment (AQIA) has been performed to assess the potential impacts of Stage 1 and Stage 2 operations to be performed as part of the ongoing and expanded Dowe's Quarry operation.*

*The AQIA has been performed in accordance with the NSW Environment Protection Authority (EPA) Approved Methods for the Modelling and Assessment of Air Pollutants in NSW document (NSW EPA, 2017), and with due reference to the Secretary's Environmental Assessment Requirements (SEARs), and NSW EPA requirements (refer Table 1 ).*

*The air quality criteria applicable to the AQIA have been adopted from Commonwealth and State legislation and guidance, and approval conditions and are presented in Section 3.*

*A modelling exercise has been performed to characterise the meteorological environment of the area surrounding the Quarry Site. A full description of the input data, modelling and validation of the outputs is presented in Annexure 1.*

*A detailed dispersion modelling exercise has been performed to characterise the predicted impacts from the Proposal at a number of surrounding privately-owned receptors. A background air quality dataset discussed in detail in Annexure 2 has been adopted and added to those modelled impacts to determine a total, cumulative impact.*

*Details of the operations of the Proposal during both Stage 1 and Stage 2 have been used to generate emissions inventories characterising the operation of the Quarry. These are outlined in full in Annexure 3. Dust control measures for emissions sources have been identified and adopted where appropriate*

*For the purposes of providing 'worst-case' assessment results, with which to compare against the long and short-term air quality criteria, processing operations at the Quarry Site have been assumed to operate at a throughput of 230 000 t per annum, or a maximum of 5,000 t per day. These activity rates are significantly greater than those which are likely to be experienced as part of ongoing Quarry operations.*

*These conservative assumptions provide confidence that the impacts of the Proposal are not likely to be greater than those presented within this assessment.*

*The dispersion modelling exercise indicates that the Proposal can operate across all three stages of development with no exceedances of adopted air quality criteria.*

#### 9.2 GREENHOUSE GAS

*A greenhouse gas (GHG) assessment has been performed to examine the potential impacts of the operation of the Proposal relating to emissions of GHG. A quantitative assessment of emissions has been performed with emissions compared with total national and NSW GHG emissions for context.*

*Emissions associated with the Proposal are anticipated to represent 0.00065 o/o of Australian and 0.00016 o/o of NSW emissions totals for the year 2017.*

*Emissions are proposed to be reduced further through the implementation of a maintenance program for all plant and equipment, and the investigation into using 85 fuel where possible.*

*A "Human Health Risk Assessment for Respirable Crystalline Silica: Expansion of Dowe's Quarry" was prepared by Environmental Risk Sciences Pty Ltd. The report concludes"*

## Section 5. Conclusions

*Based on the available data and the scope of this assessment, it has been concluded that health risks to residents in existing properties adjacent to the Quarry are low and acceptable.*

*Environmental Risk Sciences Pty Ltd has undertaken a human health risk assessment (HHRA) in relation to the potential presence of respirable crystalline silica (RCS) in dust emitted during the continued operation and extension of Dowe's Quarry. It is noted that limitations apply to the outcomes due to the focus of this assessment on RCS and the uncertainties identified and analysed in the report.*

*The HHRA has addressed human health risk issues relevant to RCS that may be present in dust sourced from the Quarry and the ongoing low-density rural/residential use of the existing properties adjacent to the Quarry.*

*No additional dust mitigation measures are recommended for operations assuming the proposed dust mitigation measures including the planned air monitoring program are implemented. It is recommended that PM<sub>2.5</sub> and PM<sub>10</sub> samples captured for monitoring are subject to laboratory analysis for silica concentration. This is recommended to confirm the concentrations of silica in these PM fractions, that adjacent receptors may be exposed to.*

*Standard dust mitigation measures including dust suppression through chemical and water means, the tarping of loads, inspection of truck tyres and street sweeping should also continue for the operation. The proposed extension to the seal on the Quarry Access Road to a total length of 800m is supported.*

*It is noted that the application was referred to both the EPA and NSW Health who have both responded in support of the proposal and that the emissions are within acceptable levels.*

## Flora and Fauna

The biodiversity offset (6.4ha) included as a condition of consent for the existing quarry under DA 2014.078/1, is to be secured, by the applicant prior to the commencement of works under this consent. The applicant is to supply documentary evidence demonstrating compliance with this condition to Council.

The EIS provides the following overview of the proposed vegetation clearing:

### 2.5.3 Vegetation Clearing

*A total of 6.4ha of vegetation would be removed for the extension of the Quarry Site. All vegetation clearing would be undertaken in accordance with the existing Vegetation Clearing Protocol for the Quarry (see Appendix 4).*

*Vegetation would be cleared progressively within the defined areas of disturbance using an excavator. The few mature trees with tree hollows would be removed following the adoption of the measures non1inated to avoid impacts to individual fauna species (see Section 5.5.5). Following the removal of the mature trees, selected timber may be made available for use by the landowner or sale for the purposes of building timber, fencing materials or firewood. The remainder would be stockpiled for rehabilitation activities or mulched for placement on terminal benches.*

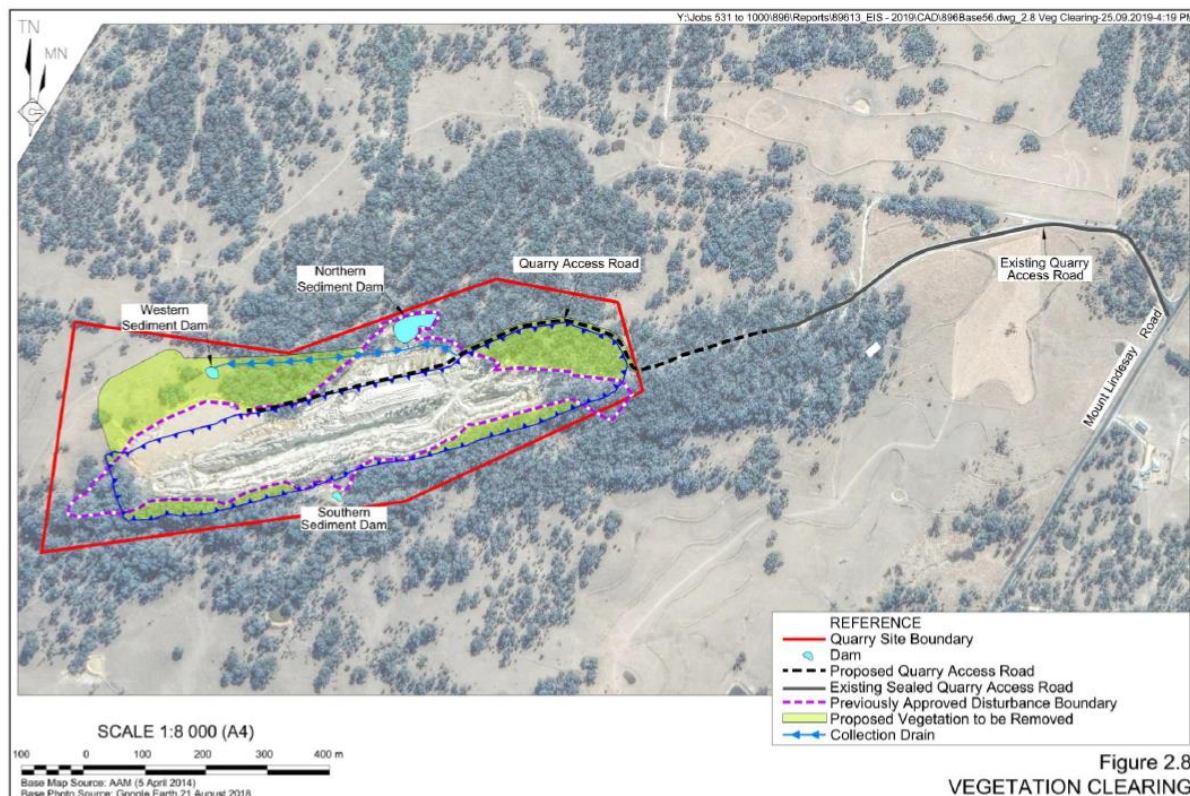
As the Proposal involves the removal of approximately 6.4ha of native vegetation and land zoning for the property requires a minimum lot size of 100ha the Biodiversity Offset Scheme is triggered. The Quarry Site is not located on land mapped as having high biodiversity value as indicated on the



Biodiversity Values Map. A Biodiversity Development Assessment Report (BDAR) has been prepared by Ecological Australia Pty Ltd

The proposed vegetation clearing is depicted in the following figure:

**Figure 10: Proposed Vegetation Clearing**



As a result of the feedback from BCD (Biodiversity and Conservation Division of the NSW DPIE), the applicant is proposing to present a staged strategy to biodiversity offsetting for the Project.

The Applicant must retire the biodiversity credits for each stage as specified in the table below, prior to commencing vegetation clearing for that Stage.

The retirement of credits must be carried out in consultation with BCD and in accordance with the Biodiversity Offset Scheme of the BC Act<sup>1</sup>.

**Table: Biodiversity credit requirements**

| Stage        | Area (ha*)  | Offset Requirement (ha) | Ecosystem Credit Requirement | Species Credit Requirement (Eastern Cave Bat) |
|--------------|-------------|-------------------------|------------------------------|-----------------------------------------------|
| A            | 2.04        | 0.35                    | 10                           | 17                                            |
| B            | 2.63        | 2.44                    | 71                           | 122                                           |
| C            | 0.66        | 0.64                    | 19                           | 32                                            |
| D            | 1.20        | 1.19                    | 34                           | 59                                            |
| <b>Total</b> | <b>6.53</b> | <b>4.63</b>             | <b>134</b>                   | <b>230</b>                                    |

\* hectares rounded to the nearest 0.01

<sup>1</sup> The available credit retirement options for the development include purchase and retirement of open market available biodiversity credits, payment into the Biodiversity Conservation Fund or establishment of a Biodiversity Stewardship Site. Credits retired for impacts on EPBC Act listed species and associated habitat must be like-for-like.

Notes:

- To identify the surface disturbance areas associated with Offset Stages A to D in the above Table, refer to the figure below.
- The credits in the above table were calculated in accordance with BioBanking Assessment Methodology of the NSW OEH interim policy on assessing and offsetting biodiversity impacts, State significant development (SSD) and State significant infrastructure (SSI) projects 2011, and may need to be converted to reasonably equivalent 'biodiversity credits', within the meaning of the BC Act, to facilitate retirement.

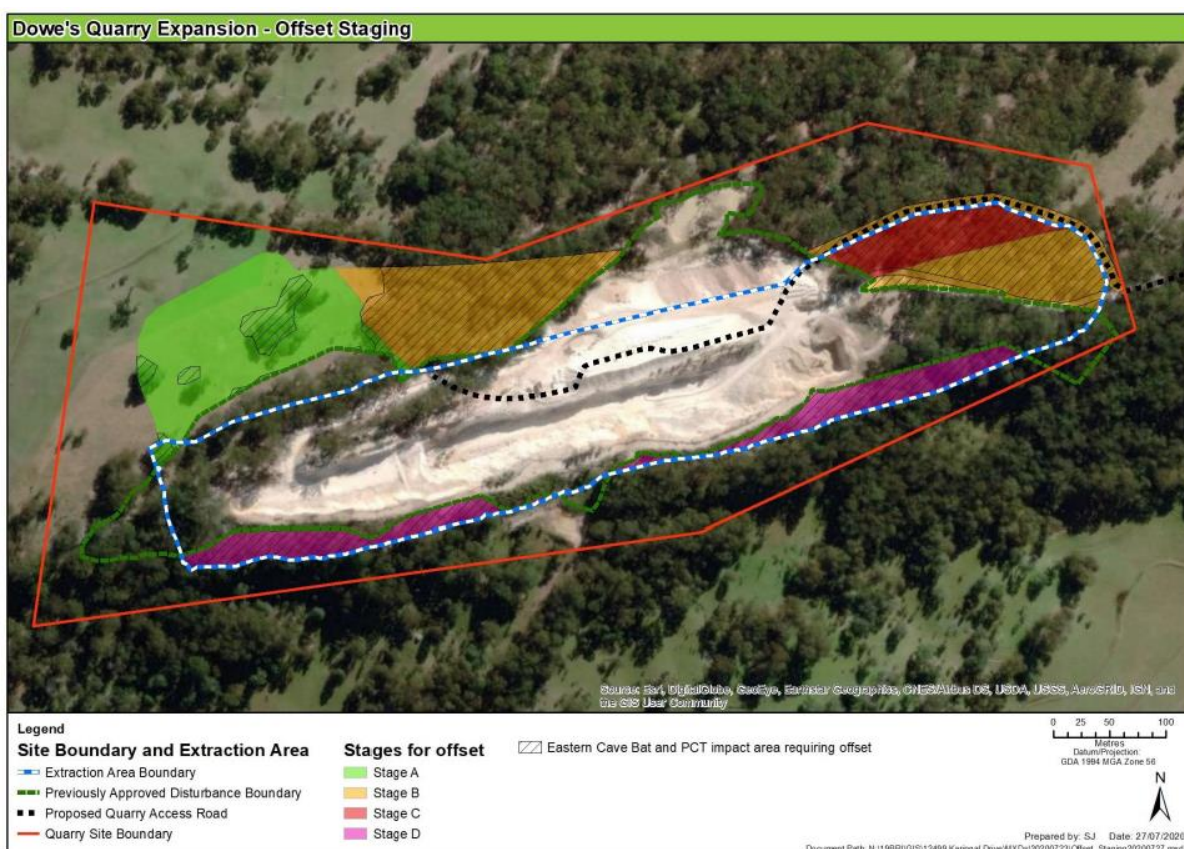


Figure 1: Staging of offset requirements

## Noise and Vibration

The proposed development has the potential to create noise and vibration disturbance to surrounding land owners.

The approved hours of operation of the quarry in condition no. 8 from the current consent are:

### Extraction Operation Hours

The extraction operation hours are limited to the following:

- Monday to Saturday- 7.00am to 5.00pm (Australian Eastern Daylight Time)
- Monday to Saturday- 7.00am to 5.00pm (Australian Eastern Standard Time)
- Sunday and Public Holidays - closed.
- Blasting operations to be in accordance with the current NSW Environmental Protection Licence - at time of consent; Monday - Friday - 10am to 3pm with NO blasting on weekends or public holidays
- Maintenance activities for on site machinery may be undertaken 24 hours/7 days per week provided no noise or light spill is evident externally to the project site.

Reason: To ensure compliance with application and plans.

The hours operation hours are limited to the following (and as per the EPA General Terms of Approval):

| Activity                                                                                               | Monday to Friday | Saturday       | Sunday         | Public Holidays |
|--------------------------------------------------------------------------------------------------------|------------------|----------------|----------------|-----------------|
| Extraction Activities                                                                                  | 7am to 5pm       | 7am to 5pm     | Nil            | Nil             |
| Processing Activities                                                                                  | 7am to 5pm       | 7am to 1pm     | Nil            | Nil             |
| Dispatch of trucks to haul quarry product or arrival of trucks delivering products                     | 7am to 5pm       | 7am to 5pm     | Nil            | Nil             |
| Arrival and loading of trucks to haul quarry product                                                   | 7am to 5pm       | 7am to 5pm     | Nil            | Nil             |
| Light vehicle traffic associated with employees or light service vehicles entering or leaving the site | 24 hours a day   | 24 hours a day | 24 hours a day | 24 hours a day  |
| Maintenance of plant and equipment including workshop activity                                         | 24 hours a day   | 24 hours a day | 24 hours a day | 24 hours a day  |
| Stockpiling Operations                                                                                 | 7am to 5pm       | 7am to 5pm     | Nil            | Nil             |
| Drilling                                                                                               | 7am to 5pm       | 7am to 5pm     | Nil            | Nil             |
| Rock hammering                                                                                         | 7am to 5pm       | Nil            | Nil            | Nil             |

A Noise and Vibration Impact Assessment has been prepared by Spectrum Acoustics Pty Ltd.

The Assessment provides the following conclusions.

### 5.1 Predicted Operation Noise Levels

*The results in Tables 5 & 6 show noise levels below the operational noise criterion at all assessed receivers.*

### 5.2 Blasting

*The client has advised that blasting within the quarry would typically be required approximately once per month, however, in the interest of practical limits of ongoing operations, blasting of not more than once per week is proposed.*

*The above results show worst case blast impact levels well below the overpressure and ground vibration criteria at the potentially worst impacted receivers.*

### 5.3 Road Traffic Noise

*As discussed in Section 4.3, data from our extensive library of noise measurements were used to determine maximum pass-by noise levels for laden and unladen trucks at a variety of distances and speeds. Based on the maximum annual production rate of 230,000t and including back-loading of material from the Sunnyside Crushing and Screening Plant to the quarry, the Proposal would generate up to 56 movements per day, Monday to Saturday. Half of these movements would be loaded trucks passing the nearest residences to Mt Lindesay Road and the New England Highway and half would pass by the nearest residences to old Ballandean Road.*

*The results in Table 8 show compliance with the traffic noise criteria at receivers nearest to all sections of the transport route, implying compliance at other receivers further from the transport route.*

## 6. SUMMARY OF RESULTS

*A noise impact assessment of the proposed extension of Dowe's Quarry via Tenterfield NSW has been conducted. The study has found the following:*

- No exceedance of operational noise criteria has been predicted at any receiver;*
- No exceedance of blast overpressure and ground vibration criteria at any receiver;*
- No exceedance of off-site traffic noise criteria at any receiver.*

*We therefore advise that the Proposal can operate within the EPA noise criteria and recommend approval of the Proposal, as far as acoustic issues are concerned.*

It is noted that the EPA has issued their General Terms of Approval that includes conditions relating to noise control.

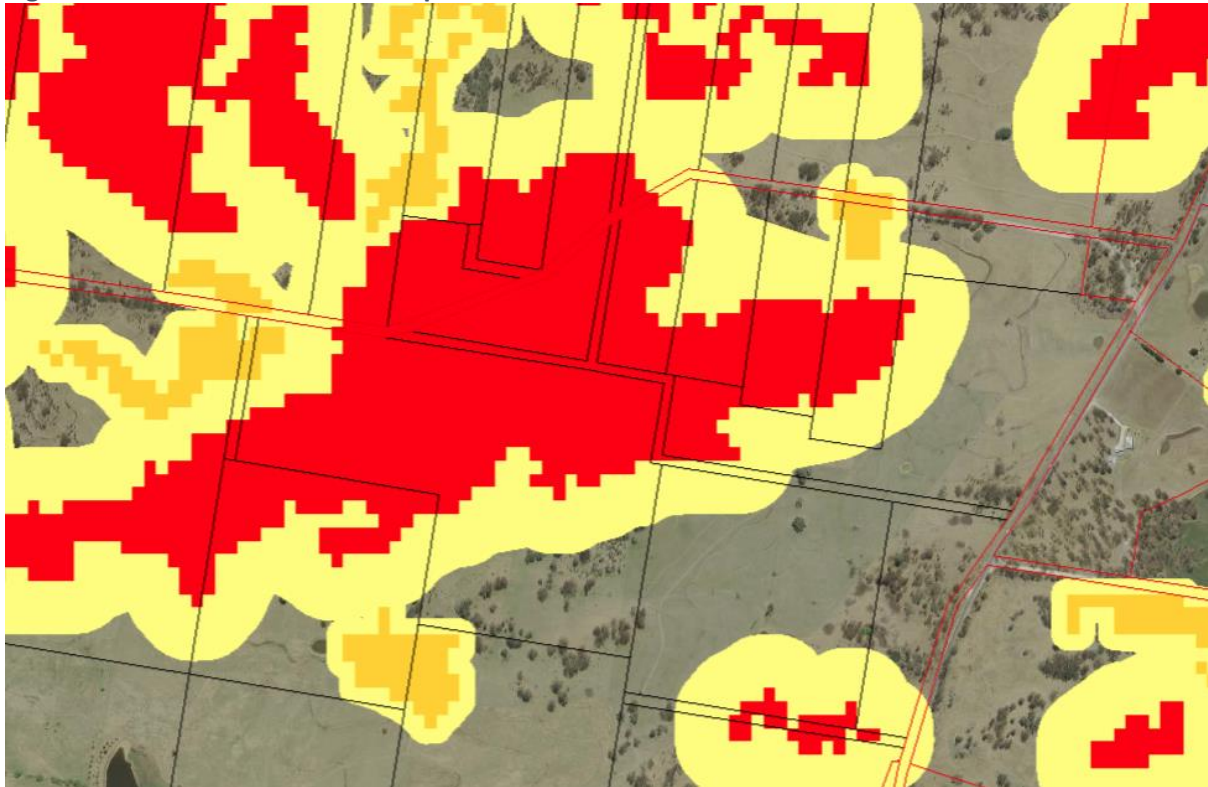
## Natural Hazards

### Bushfire

The land is mapped as bushfire prone. The application has been referred to the NSW RFS and they have responded with recommended conditions of consent including a Fire Management Plan and APZ requirements around infrastructure.



**Figure 11: Bushfire Prone Land Map**



There are no other known natural hazards that have an impact on the proposed development.

### Social Impact in the locality

Section 5.10.4 of the EIS provides the following social management and mitigation measures:

#### **Social and Community**

- *Engage with surrounding landowners and local community members, as required to inform them about the activities within the quarry.*
- *Respond to community complaints in an expeditious and courteous manner.*

#### **Responsible Road Use**

- *Continue to implement the Driver's Code of Conduct to ensure that truck drivers remain aware of their responsibilities while driving.*

#### **Employment and Training**

- *Where appropriate, give preference when engaging new employees to candidates who live within the Tenterfield LGA over candidates with equivalent experience and qualifications based elsewhere.*
- *Encourage and support participation of locally based employees and contractors in appropriate training or education programs that would provide skills and qualifications that may be of use at the Quarry Site.*

#### **Economic Contribution and Development**

- *Give preference, where practicable, to suppliers of equipment, services or consumables located within the Tenterfield LGA*



There was considerable public interest in the proposed expansion of the quarry given the volume of submissions received in the two rounds of community consultation (these submissions are addressed later in this assessment report).

The proposed measures highlighted above are considered acceptable along with compliance with the existing and proposed conditions of consent.

### Economic Impact

The Quarry, which has operated since 1987, provides a range of crushed quartzose products to the local construction industry. The proposal would allow the Applicant to maintain the current supply of crushed rock products to local markets whilst increasing the range of products despatched directly from the Quarry Site. This would contribute positively to the overall supply of crushed rock products within the Tenterfield LGA and ensure competition within the construction material sector is maintained.

The Proposal would provide for the ongoing long-term employment of eight employees who would either work at the Quarry Site or transport the raw materials and/or crushed rock products to the Sunnyside Crushing and Screening Plant or directly to end markets. The Proposal would further support ongoing operations at the Sunnyside Crushing and Screening Plant and employment at that operation. The applicant has indicated that they spend between \$4 million to \$5 million each year on wages, machinery servicing, consumables and all other purchases, the bulk of which would be spent within the Tenterfield LGA.

The flow-on effect of secure employment for employees who reside in the Tenterfield LGA would provide an additional stimulus to retail and other service industries within region.

### Cumulative Impacts

It is considered that there are no cumulative impacts requiring further consideration. The potential impacts of the proposed expansion have been addressed in this report and Government Agencies have been supportive subject to the imposition of conditions to consent to mitigate any potential impacts.

### S4.15(1)(c) the suitability of site for the development

The site is occupied by an existing approved quarry operation. The impacts of the proposed proposal have been identified and it is considered that the proposed mitigation and management issues in conjunction with recommended modified conditions ensure that there will be no significant environmental impact resulting from the development. The site is considered to be suitable for the proposed development.

## S4.15(1)(d) any submissions made in accordance with the Act or Regulations

### Public Submissions

The Development Application and accompanying Environmental Impact Statement were publicly advertised and adjoining and adjacent owners notified on two (2) separate occasions in accordance with Clause 118 of the Environmental Planning and Assessment Regulation 2000, as follows;

- 1<sup>st</sup> Exhibition period – 16 October 2019 to 15 November 2019
- 2<sup>nd</sup> Exhibition period – 15 April 2020 to 15 May 2020

A full Confidential copy of submissions is included in Annexure D.

At the close of the consultation periods Council had received submissions by way of objection as follows:

#### **Round 1**

32 submission letters  
79 signatures on a petition

#### **Round 2**

14 submission letters  
54 signatures on a group submission.

The applicant has provided a Submissions Report in response to both rounds of consultation. In addition, the applicant has made changes to the proposal and after the first round of consultation and commissioned additional reports to address the concerns raised by objectors.

Following is a summary of the main issues raised across both rounds of community consultation.

### *Air Quality*

The majority of submissions raised concerns relating to the air quality as a result of the quarry operation.

The Air Quality Impact Assessment confirmed that predicted dust dispersion would remain within the relevant criteria levels at all privately-owned residences, even during adverse climate conditions. In addition, the Human Health Risk Assessment concluded that the health risks associated with environmental exposure to RCS from the Quarry are low and acceptable.

The Air Quality Impact Assessment has been subject to thorough review by the Environment Protection Authority (EPA) including review of the technical adequacy of air quality modelling by a specialist in that field. The conclusion to the EPA feedback on the outcomes of the assessments is as follows .

*.... the EPA considers that the adopted modelling scenarios have assessed the potential impacts from the largest sources for each modelling scenario and adverse air quality impacts are unlikely to occur provided all mitigation measures are effectively implemented.*

Notwithstanding this conclusion, the EPA has provided General Terms of Approval (that would be reflected in the Environmental Protection Licence for the Quarry) that are stringent and require the consistent implementation of management and monitoring.

Further to this, NSW Health has provided the following comment based on the outcomes of the Human Health Risk Assessment.

*The Human Health Risk Assessment for Respirable Crystalline Silica (HHRARCS): Expansion of Dowe's Quarry prepared by Environmental Risk Sciences Pty Ltd on behalf of R. W. Corkery & Co. Pty Limited (RWC) includes consideration of exposures that may occur within the community, the following is suggested (pg 43):*

- *Existing or background exposures to RCS - no data is available for the area near the Quarry, hence expected background level of RCS in air as discussed in Section 3.4, of 1.9 µg/m<sup>3</sup> has been adopted in this assessment. It is assumed that this background relates to RCS as PM<sub>2.5</sub>.*
- *Impacts from the proposed quarry operations - this has been modelled for the project, with the maximum incremental increase in annual average PM<sub>2.5</sub> predicted to be 0.2 µg/m<sup>3</sup> (refer to Table 2.1) pg16. It is assumed that 100% of the PM<sub>2.5</sub> is RCS.*
- *Total maximum annual average RCS exposures as PM<sub>2.5</sub> are therefore 2.1 µg/m<sup>3</sup>, noting that the quarry is contributing only 9.5% of the cumulative exposure, with the remainder being assumed natural background exposure.*
- *This is less than the adopted guideline of 3 µg/m<sup>3</sup>.*

*On this basis, there are no health risk issues of concern in relation to community exposures to RCS in dust that may be sourced from 'The Quarry'.*

*There is correspondence received via this office and public submission from a collective of residents in varying proximity to the quarry that support a significantly less health based guideline level be adopted.*

*This office would be guided by the NSW Environment Protection Authority (EPA) on any environmental increase of particulate matter and standards/guideline limits that may apply. Whilst the human body's respiratory system has a number of defence mechanisms to protect against the harmful effects of Particulate Matter, numerous studies link particle levels to increased hospital admissions and emergency room visits and even to death from heart or lung diseases. Both long (over years) and short term (hours or days) particle exposure have been linked to health problems.*

*Generally, it is thought that fine particles below 2.5 µm in diameter may be of a greater health concern than larger particles as they can reach the air sacs deep in the lungs. However, coarse particles (PM<sub>2.5-10</sub>) could also be associated with adverse health effects.*

*When assessing health risks, both incremental changes in exposure from existing background pollutant levels and the cumulative impacts of specific and existing pollutant levels should be addressed at the location of receptors. Exposure should be assessed at the location(s) of the most affected receptor(s).*

The applicant has committed to locate the mobile processing plant on the floor of the extract area to mitigate the potential air quality and noise impacts for surrounding residences. Misting water sprays would be used on the mobile crushing and screening plant.

The applicant has also committed to the installation of continuous particulate matter monitoring on site in response to the concern expressed in the submissions regarding the potential impacts to air quality. It is proposed to impose the following condition of consent:

That an ongoing air monitoring program be implemented by the applicant as per the recommendations of the *Human Health Risk Assessment for Respirable Crystalline Silica: Expansion of Dowe's Quarry (Ref RWC/20/DOWR001-B)*.

The air quality monitoring program must be described in an Air Quality Management Plan that must be prepared in consultation with the EPA and Council and submitted for approval prior to the commencement of project operations.

The applicant will also need to ensure compliance with the relevant Work Health and Safety legislation concerning health risks.

### *Biodiversity*

Comments were made with respect to previous biodiversity offsets under the current DA consent along with concerns relating to further vegetation removal under this proposal.

The biodiversity offset (6.4ha) included as a condition of consent for the existing quarry under DA 2014.078/1, is to be secured, and be maintained in perpetuity, by the applicant prior to the commencement of works under this consent. The applicant is to supply documentary evidence demonstrating compliance with this condition to Council.

As the Proposal involves the removal of approximately 6.4ha of native vegetation and land zoning for the property requires a minimum lot size of 100ha the Biodiversity Offset Scheme is triggered. The Quarry Site is not located on land mapped as having high biodiversity value as indicated on the Biodiversity Values Map. A Biodiversity Development Assessment Report (BDAR) has been prepared by Ecological Australia Pty Ltd

As a result of the feedback from BCD (Biodiversity and Conservation Division of the NSW DPIE), the applicant is proposing to present a staged strategy to biodiversity offsetting for the Project.

The Applicant must retire the biodiversity credits for each stage of the quarry, prior to commencing vegetation clearing for that Stage.

### *Noise and Blasting*

Following objections raised (and comments received from the EPA) relating to noise and blasting, Spectrum Acoustics Pty Ltd prepared an updated Noise Impact Assessment.

#### *Summary of Results*

*The following outcomes have been predicted for the amended Proposal at the worst affected residential receiver.*

- *Maximum predicted operational noise levels of 33dB(A), Leq(15min).*
- *Maximum predicted road traffic noise levels of 53dB(A), Leq(15hour)-*
- *Maximum predicted blast overpressure of 13.2dB and ground vibration level of 1.4mm/s.*

*In all cases, the results of the updated NIA demonstrate that the Proposal would not result in any exceedances of the assessment criteria at any receiver. It is noted that current blasting operations have been monitored since 2015. Over that time the average blast overpressure has been 98.1 dB and ground vibration 1.1mm/s. This indicates that the experience of blasting for the community is not likely to significantly change.*



*Locating the mobile processing plant on the floor of the extraction area would have a beneficial effect on noise impacts experienced at surrounding residences, principally due to the intervening topography between the noise source and sensitive receivers. This is reflected in the results of the updated NIA which demonstrate that operational noise levels at the previously worst affected residential receiver (R3A) would decrease by 3dB(A), Leq(15min) (from 35Leq(15min) to 32dB(A), Leq(15min)). It is acknowledged that the results of the updated NIA indicate that there would be an overall increase in operational noise levels at some surrounding residences compared to the original NIA, however, this is likely to reflect the increase to sound power levels adopted for the assessment at the request of the EPA and not the location of the mobile processing plant.*

The EPA has advised with respect to blasting:

*The EPA considers with adequate controls and mitigation measures implemented, allowing 24 blasts per 12- month period will not result in adverse air quality impacts.*

The applicant proposed to establish a notification register to enable community members to register for blast notifications.

Noise and blasting impacts are to be controlled as per the Environmental Protection Licence and conditions of consent.

### *Consultation*

There were concerns raised regarding the consultation with the community by the applicant regarding the proposed development.

The applicant advised that it undertook consultation with the community after the preparation of the EIS was complete.

It is noted that Council has publicly notified the development application on 2 occasions which has provided significant opportunity for the community to review the proposal and make submissions.

### *Economic*

The following concerns have been raised:

- Clarification of job creation
- Could be an important economic activity in Tenterfield providing that it operated according to current regulation

The quarry has operated since 1987 and provides a wide range of crushed quartzose products to the local market. The proposal would allow the applicant to maintain a current supply of crushed rock products to local markets whilst increasing the range of products dispatched directly from the quarry site.

The proposal would provide for the ongoing long term employment of 8 employees who would either work at the quarry site or transport the raw materials and/or crushed rock products to the Sunnyside Processing Facility or directly to end markets.

- Negative impact on property values

The devaluation of property is not considered to be a valid planning objection.

- Negative impact on tourism as a result of the proposed quarry extension.
- Potential to be known as a silica mining town which affect people considering moving to Tenterfield.

The visibility of the quarry site from Mount Lindesay Road and from residences adjoining this road is limited by patches of remnant vegetation which act as a screen views from sections of Mount Lindesay Road. Vegetation along both the northern and southern boundaries of the Quarry Site also screens the Quarry benches from view along Mount Lindesay Road. Therefore, visitors entering Tenterfield via Mount Lindesay Road are unlikely to notice that a quarry is present.

The applicant has been able to demonstrate that the impacts from the quarry are within acceptable limits and that they must conduct their operations in accordance with the conditions of consent and the requirements of the Environmental Protection Licence.

It is considered that the quarry does not dominate Tenterfield and the town is not recognised for the quarry.

#### *Non compliance*

- Previous breaches of their Environmental Protection Licence
- Company fined in the past of not complying with environmental and workplace constraints

The applicant has provided the following response:

*The above comments relate to a notice and fine issue to the Company in 2016 that was later retracted by the EPA, after it was acknowledged that the operations had not deliberately provided misleading information. The caution related to Quarry Solutions not including records of operations outside of approved hours in its annual reporting to the EPA. However, as the out of hours operations related to an emergency at the Quarry caused by heavy rainfall, the Company did not in fact believe it had been non-compliant. Once this was identified the reporting was updated and the EPA retracted the fine and caution. This issue was purely administrative in nature and did not demonstrate an example of the Company causing environmental harm or endangering people in the community.*

*DMcC refutes this issue demonstrates poor corporate policies or strategies.*

- Concerned about the company not followed WHS practices

These claims have been unsubstantiated. Regardless, the company is required to comply with a large number of consents, licences and within a strict regulatory framework.

#### *Planning Considerations*

- By installing a mobile crushing facility at the mine site would make the plant more industrial than extractive? Is this appropriate for an area which is zoned rural?
- Isn't the crusher facility more of industrial in nature instead of extraction which is allowed in rural land usage?
- How can crushing operations, which would be considered as heavy industry, be permitted in an area that is zoned "Rural"?
- In the planning application there was a question, is the mine in keeping with the landscape and the question marked yes. We do not believe this is the case and question how a silica mine and farming land go together.

The Tenterfield LEP describes the development that is permitted zones areas. The quarry site is zoned RU1 Primary Production with the LEP specifying industries that are permissible in those areas with and without development consent and industries that are not permitted. Extractive industries are permitted with development consent on land zoned RU1 and processing activities are consistent with development for an extractive industry. Therefore, it is considered that the Proposal is consistent with identified permitted land uses in the location proposed.

### *Social Impacts*

A number of submissions raised concerns relating to the social impact of the proposal on surrounding residences and the Tenterfield community.

The quarry has been in operation for a considerable period of time and that expansion as proposed in the DA and EIS can be undertaken within acceptable parameters. The associated impacts identified in the submissions which collectively potentially lead to social impact, have been addressed in this assessment report. The proposal has been referred to the relevant Government Agencies and have each individually supported the expansion subject to conditions to ensure that the social impact is acceptable.

The applicant has provided the following points with respect to limiting the social and environmental impacts of ongoing operations:

- *Vegetation clearing with the Quarry Site has been limited as much as is practical in order to limit impacts to biodiversity values. This included relocating the access road during planning and inclusion of backfilling of the extraction area in later stages of development to store crusher fines rather than clearing additional areas for storage of these materials.*
- *Processing activities would be located in the floor of the extraction area with the equipment moved progressively to avoid active areas and allow progressive development of the extraction area. While this is not ideal for the operation, it permits the greatest level of mitigation for predicted noise and dust generation from these processes.*
- *Transportation activities have been designed to be as consistent as possible with existing operations. A professional fleet of heavy vehicles would be used to ensure that transport operations are efficient but also limit the impact to the road network and on community amenity.*

### *Traffic and Transport*

- Near misses along Mt Lindesay Road with quarry trucks.
- Mount Lindesay Road is too dangerous in terms of narrowness.

During the history of operations, the applicant has advised that there has not been a traffic incident recorded at either Dowe's Quarry or the Sunnyside Facility. A road safety audit has been undertaken by the Constructive Solutions on behalf of the applicant. The assessment identified a range of improvements, with a focus on general maintenance and upgrade.

The company has an in vehicle monitoring system that utilises GPS tracking and alerts.

- Having truck movements on six days of the week is completely incompatible with the promotion of the shire's natural assets.

A limit of 28 laden loads per day is not a constant stream of trucks, with the current vehicle fleet making round trips that include delivery and return. Trucks from the Quarry would not be a constant presence but would pass intermittently along the transport route. It should also be noted that operations on a Saturday would be demand driven, with the Company expressing a preference not to operate on a Saturday unless required to meet applicant demand. Operations from Monday to Saturday have been assessed to ensure that this eventuality has been considered.

- The potential impact of the quarry operations on cyclists.

Not considered a significant issue with the proposed expansion.

- Clarification of the 28 truck movements per day.

The limit of 28 laden loads per day would apply to all heavy vehicles leaving the Quarry with a load of material, regardless of the destination. Therefore, trucks distributing material directly to clients would be included in this limit, all vehicles carrying Quarry product would be required to abide by the Driver's Code of Conduct including tarping of loads, speed limits and fatigue management.

Traffic not included in this limit includes light vehicle activity required as shift commence and finish and any deliveries such as the fuel or other consumables and the movements associated with the water cart, which is road registered.

- The EIS failed to identify a school bus stop

This omission has been noted by the applicant and a record of this location included in the Driver's Code of Conduct so that drivers are aware of potential road conflicts.

As noted in the response to Roads and Maritime Services by the applicant, GPS monitoring units have been installed on local school buses using the transport route where permission has been granted. Each GPS monitoring unit fitted to a school bus enables tracking and interaction by Quarry vehicles. The GPS monitoring system is configured to send an alert to a truck driver traveling in the same direction as a school bus when the truck comes within 900m of the school bus. The alert is in the form of a beep audible only to the truck driver and not the school bus driver.

It is noted that if the truck breaches a 50m separation distance an alert is generated, and the infringement will be investigated by the Quarry Manager. If the school bus stops the truck is also to stop and not pass the school bus. If the truck does pass the school bus an alert is generated, and the infringement will be investigated by the Quarry Manager. The GPS tracking system is intelligent and alerts a truck traveling in the opposite direction of a school bus when it is approaching the school bus, but the alert will not be triggered when the truck passes the school bus in the opposite direction.

- Concerns over the standard of Mount Lindesay Road

The applicant is required to pay developer contributions to Council on a 3 monthly basis.

The management of any upgrade to Mount Lindesay Road or Old Ballandean Road is a matter for Council and may be funded from the developer contributions paid by the applicant historically and payments that are proposed to continue under the Proposal.

It is noted that the applicant has sought and received approval from the National Heavy Vehicle Regulator for higher mass limit transportation on the transport route for a similar truck configuration

as the existing operations (that is truck and quad dog) that permits a gross combined mass of 57.45 tonne (load of 40t).

It should be noted that Quarry-related vehicles returning to the Quarry on Old Ballandean Road are generally unladen and so the majority of truck travel does not involve the vehicle weight that may significantly degrade the road.

- Under the previous agreement drivers of Darryl McCarthy were limited to 80 km/h in the 100km/h zone on Mt Lindesay Rd by company policy. There is no indication in the current proposal that this would continue to be the case.

The voluntary speed limit on Mount Lindesay Road of 80km/hr would be continued under the proposed development. This voluntary speed limit would be tracked by the Company's in Vehicle Monitoring System and alerts sent to the Quarry Manager should there be a breach. The applicant advised that alerts are investigated and drivers disciplined on this basis.

### *Visibility*

- Neighbours are concerned regarding the visibility of the quarry operations for their properties.

It is acknowledged that local community members will be aware of the presence of the Quarry and may occasionally see a heavy vehicle on the transport route. However, the nature of the ridge from where material is being extracted and the existing remnant vegetation would act as natural barriers with active excavation works and processing activities would not be visible. As indicated in the following photo the quarry activities are and would continue to be obscured.

**Photo: View of the quarry to the north from Leechs Gully Road**





## *Water Resources*

- Will surface water management be sufficient to ensure that there is no hazardous off site impacts during extreme weather conditions (especially to nearby watercourses).
- Potential overflow of sediment dams and onto neighbouring properties.

As described in Section 5.4.4 of the EIS, the capacity of dams at the Quarry is comprised of the minimum settlement and storage requirements for a 90th percentile 5-day rainfall event (the design rainfall event specified in Volume 2E of the Blue Book for standard receiving environments (Landcom 2004)). The storage allows for five days of rain at a level that is equal to the 90th percentile of historic rainfall records. This approach is consistent with the requirements of the NSW Government to ensure that dams are suitable to capture runoff during the majority of rainfall events. Extreme rainfall events cannot be accounted for and it is assumed that during these events the local environment is receiving sediment from a range of sources as it runs over the landscape.

The sediment captured within the sediment dams at the Quarry is not hazardous but high sediment loads are to be avoided where possible. Where the sediment dams discharge water to the natural environment, the applicant would be required to sample the water and test it for sediment load and other parameters.

- Where is the water coming from and how much daily usage is envisaged for dust mitigation?

Water use within the Quarry site to date has been limited to that required by a water truck for periodic dust suppression on the Quarry access road. Water for this purpose has previously been sourced from the Sunnyside Facility. The applicant proposes that water for dust suppression would be sourced from the settlement zone within the Northern and Western Sediment Dams reducing reliance on the Sunnyside Facility as a water source for the Proposal. In the event insufficient water is present in these dams; the applicant would revert to transporting water from the Sunnyside Plant.

The applicant currently holds a Water Access Licence 6054 that permits the use of 50ML (based on 50 share components) of water from Tenterfield Creek. It is estimated that water use for dust suppression would require no more than 60KL each day. Assuming 240 working days per year (five days per week over 48 weeks), water use requirements are not expected to exceed 18ML per year.

The three dams within the Quarry Site have been constructed for the purpose of sediment retention and settlement and are therefore not considered within any Maximum Harvestable Rights Dam Capacity calculations for the Quarry Site. There are no dams within the Quarry Site that would require licensing for water use.

- Concerns with respect to unground aquifers as a result of the quarry operations.

The applicant has advised:

As noted in Section 5.4 of the EIS, the Quarry Site is located within the area underlain by the New England Fold Belt Murray Darling Basin Groundwater Source which is managed under the Water Sharing Plan for the NSW Murray - Darling Basin Fractured Rock Groundwater Sources<sup>2011</sup>.

The resource being extracted has been identified as a wide (25m to 50m) quartzite lens striking east-west within undifferentiated granite or granodiorites. The lens typically dips at approximately between 65° to 80° to the north which provides for a near vertical resource (Groundwork Plus, 2018).

The resource is also perched above the surrounding landscape with Washpool Creek to the north and Washbrook Creek to the south likely to be locations of regional groundwater discharge. Groundwater flow in this location is likely to be limited to fracture flows with very low hydraulic permeability. Records for the New England Fold Belt Murray Darling Basin Groundwater Source indicate that it predominantly consists of either shallow unconfined aquifers within weathered and fractured material or deeper confined to semi-confined system that exhibits highly variable fracturing and jointing. There are no alluvial aquifers or highly weathered material within the Quarry Site.

Given its impermeable nature, the resource is likely to act as an aquitard, limiting the flow of groundwater compared to the surrounding landscape. Therefore, it is considered highly unlikely that the extraction activities would result in groundwater being drawn into the extraction area and away from regional groundwater users. Where this may occur (due to the flow of groundwater along existing fractures in the rock), water would be likely to move slowly enough that it would evaporate on the surface of the extraction areas walls before it may collect into a pond.

It is therefore considered that local property access to groundwater would continue without change under the Proposal

- The potential for silica dusts entering tank water of surrounding properties.

Modern water tanks often include first flush systems that divert the initial rainfall (likely to contain the majority of dust) away from the storage component of the tank. While these are not perfect systems, they are a well-recognised and a recommended precaution. Older water tanks may not have first flush systems but NSW Health recommends that all rainwater tanks used for drinking water are fitted with a first flush system to reduce the amounts of dust, bird droppings and leaves, that can accumulate on roofs, from being washed into tanks.

As noted within the New South Wales Private Water Supply Guidelines, NSW Health 2016, common sources of contaminants for rain water (tank water) include the following:

- Organic and mineral matter in roofs and gutters (build-up of leaves and dirt).
- Roof materials (e.g. lead sheeting, peeling paint).
- Build-up of sludge in tank, dirt in inlet strainers and/or insect screens.
- Tank materials (e.g. pH of water with concrete tanks, high metals from metallic tanks, corrosion of metals from pipes).
- Insect, bird and animals in system (e.g., dead animals, mosquito breeding).

The quarry is also not the only source of dust in the local setting. Local roads and agricultural activities would contribute to dust experienced in the vicinity of the Quarry. Therefore, it would be difficult to establish conclusively that matter collected from the roof in a water tank came from the Quarry. The potential health risks associated with dust deposition on roofs and subsequent contamination of drinking water when this is washed into water tanks is not an issue that has the Quarry as an isolated source.

It is also noted that the levels of deposited dust experienced at local residences is predicted to be low (0.2g/m<sup>2</sup>/month) with the background dust levels assumed to be much higher (2.0g/m<sup>2</sup>/month).

## Government Submissions

NSW Planning, Industry & Environment (Geological Survey of NSW, Division of Resources & Geoscience)

### Response

*The Environmental Impact Statement provides the location of boreholes used to test the extent and depth of the targeted quartzite resource and produce indicative cross-sections. However, no results of product testing to demonstrate suitability to the intended uses have been provided.*

*The proponent should be required as a condition of any new or amended consent to provide annual production data to the Division on the form sent out for that purpose.*

*The Division has no issues with the proposed biodiversity offset area.*

### Comment

To be included as a condition of consent.

NSW Planning, Industry & Environment (Biodiversity and Conservation Division of the Environment, Energy & Science Group)

### Response

Note: Formerly part of the Office of Environment and Heritage

The proposal was forwarded to the BCD on two separate occasions for comment, with additional information lodged by the applicant ultimately satisfying the requirements of the BCD.

In summary, the BCD recommends that:

1. *The council should ensure the biodiversity offset required by the existing quarry consent is provided either before the quarry expansion is approved or before works on the quarry expansion commence.*
2. *The council must include a condition of consent requiring evidence that the biodiversity credits identified in the BDAR have been retired in accordance with the Biodiversity Conservation Act 2016 before work commences on the quarry expansion.*
3. *The council must include conditions of consent requiring all the mitigation measures identified in the BDAR to be implemented.*
4. *Further information is required to address indirect impacts of the proposed development and this could include additional impact mitigation measures such as:*
  - a. *Identifying an exact boundary of the proposed development and identifying this on the ground and ensuring that no works or impacts occur outside the designated footprint.*

- b. *Preparing a rehabilitation management plan to be developed and implemented outside of the development footprint to address unavoidable indirect impacts as identified in the BDAR, including inadvertent impacts on adjacent habitat or vegetation, weed encroachment, and disturbance to specialised breeding and foraging habitat.*

#### Comment

The applicant will be required as a condition of consent that the previous biodiversity offset (Condition 14 of DA 2014/078/1) is appropriately managed and secured in accordance with the existing condition of consent prior to the commencement of this consent.

The existing approval included condition of consent Number 14 which states,

*'The applicant is to secure a 6.4 hectare Biodiversity Offset Area to be maintained in perpetuity in consultation with the Office of Environment and Heritage (OEH) in accordance with the submitted documentation and Ecological Assessment reports. The Biodiversity Offset Area is to be finalised within twenty four (24) months of the date of this consent.'*

The following condition of consent is proposed with respect to biodiversity credits:

*The Applicant must retire the biodiversity credits for each stage as specified in the table below, prior to commencing vegetation clearing for that Stage. The retirement of credits must be carried out in consultation with BCD and in accordance with the Biodiversity Offset Scheme of the BC Act<sup>1</sup>.*

**Table 1: Biodiversity credit requirements**

| <b>Stage</b> | <b>Area (ha*)</b> | <b>Offset Requirement (ha)</b> | <b>Ecosystem Credit Requirement</b> | <b>Species Credit Requirement (Eastern Cave Bat)</b> |
|--------------|-------------------|--------------------------------|-------------------------------------|------------------------------------------------------|
| <i>A</i>     | <i>2.04</i>       | <i>0.35</i>                    | <i>10</i>                           | <i>17</i>                                            |
| <i>B</i>     | <i>2.63</i>       | <i>2.44</i>                    | <i>71</i>                           | <i>122</i>                                           |
| <i>C</i>     | <i>0.66</i>       | <i>0.64</i>                    | <i>19</i>                           | <i>32</i>                                            |
| <i>D</i>     | <i>1.20</i>       | <i>1.19</i>                    | <i>34</i>                           | <i>59</i>                                            |
| <b>Total</b> | <b>6.53</b>       | <b>4.63</b>                    | <b>134</b>                          | <b>230</b>                                           |

*\* hectares rounded to the nearest 0.01*

*1 The available credit retirement options for the development include purchase and retirement of open market available biodiversity credits, payment into the Biodiversity Conservation Fund or establishment of a Biodiversity Stewardship Site*

#### Notes:

- To identify the surface disturbance areas associated with Offset Stages A to D in the above Table, refer to the figure below.
- The credits in the above table were calculated using the Biodiversity Assessment method Credit Calculator (Current as of July 2020)

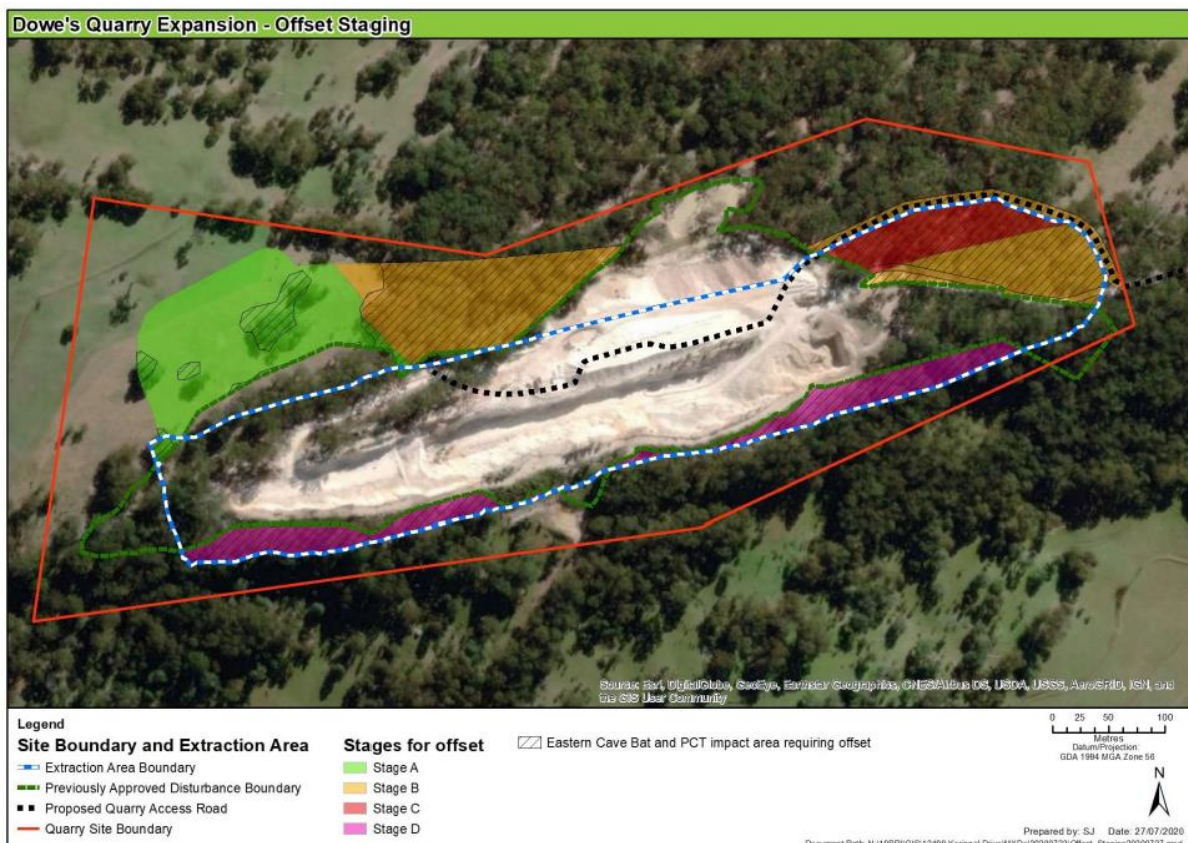


Figure 1: Staging of offset requirements

A condition of consent has been included requiring that all the mitigation measures identified in the BDAR are to be implemented. Further conditions of consent relating to identification of the exact boundary of the proposed development and the preparation of a rehabilitation management plan have also been included.

### Aboriginal Cultural Heritage comments

The Biodiversity and Conservation Division (BCD) has reviewed the EIS (particularly Appendix 11. Dowe's Quarry Aboriginal cultural heritage assessment prepared by McCardle Cultural Heritage Pty Ltd dated September 2019 and Section 5 Environmental features, safeguards and impacts) with regard to Aboriginal cultural heritage matters.

The BCD notes the conclusion that there will be no impact to Aboriginal cultural heritage from the proposed expansion.

### BCD Recommendations

1. The four (4) recommendations listed on page 51 of Appendix 11 of the Dowe's Quarry Aboriginal Cultural Heritage Assessment should be included as conditions of development consent if the council approves the application.
  - The persons responsible for the management of onsite works will ensure that all staff, contractors and others involved in construction and maintenance related activities are made aware of the statutory legislation protecting sites and places of significance. Of particular importance is the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010, under the National Parks and Wildlife Act 1974;



- *Cultural heritage awareness must be included in site inductions, forming part of the staff training process. The matters to be presented in the induction will be prepared in consultation with Aboriginal stakeholders and an archaeologist;*
  - *Should any Aboriginal objects be uncovered during works (unexpected finds), all work will cease at that location immediately, a 10-metre buffer around the artefact(s) will be tapped off with high visibility tape/fencing (works may proceed outside the buffer), and the Environmental Line contacted; and*
  - *Should human skeletal remains be uncovered during works, all works will cease at that location, a 50-metre buffer around the remains will be tapped off with high visibility tape/fencing (works may proceed outside the buffer), and the local Police contacted immediately*
2. *Representatives of the project's registered Aboriginal party should participate in the delivery of the Aboriginal cultural heritage site inductions.*

#### Comment

To be included as conditions of consent.

#### NSW Department of Primary Industries - Fisheries

#### Response

As the development footprint is not located within key fish habitat and the operation of the development is unlikely to impact fish or key fish habitats, DPI Fisheries provides a nil response to this matter.

#### Comment

Nil

#### NSW Department of Primary Industry – Agriculture

#### Response

NSW Department of Primary Industry – Agriculture (DPI Agriculture) contributed to the environmental assessment requirements for the EIS. DPI Agriculture's environmental assessment requirements included the following matters:

1. Include a biosecurity (pests and weeds) risk assessment outlining the likely plant, animal and community risks.
2. Develop a biosecurity response plan to deal with identified risks as well as contingency plans for any failures. Including monitoring and mitigation measures in weed and pest management plans.

These issues do not appear to have been addressed in the EIS. Weed management has only been considered in the context of the clearing of native vegetation in the clearing protocol of Appendix 10.

The EIS does not appear to address ongoing weed management of soil stockpiles or weed and pest animal management for ongoing quarry operations or during and after rehabilitation of the site.

A biosecurity response plan has not been included with the EIS.

Council should ensure these issues are addressed before determination of the development application. If you require technical biosecurity advice you can contact DPI Biosecurity and Food Safety on [bfs.portal@dpi.nsw.gov.au](mailto:bfs.portal@dpi.nsw.gov.au)

#### Comments

In response to the comments from DPI Agriculture, the applicant has indicated a commitment to prepare an Environmental Management Strategy in line with the criteria set down by DPI Agriculture.

It is recommended that a condition of consent be included requiring the preparation of a biodiversity response plan.

#### EPA

#### Response

The EPA has issued their General Terms of Approval.

The EPA considers with adequate controls and mitigation measures implemented, allowing 24 blasts per 12 month period will not result in adverse air quality impacts.

#### Comments

The GTA's to be included as conditions of consent.

#### NSW Rural Fire Service

#### Response

The NSW RFS has no objection to the project proceeding and provides the following recommended conditions to be included in any consent granted.

1. A Fire Management Plan (FMP) shall be prepared in consultation with NSW RFS Northern Tablelands Fire Control Centre. The FMP shall include:
  - 24 hour emergency contact details including alternative telephone contact;
  - site infrastructure plan;
  - fire fighting water supply plan;
  - site access and internal road plan;
  - construction of Asset Protection Zones (APZ) and their continued maintenance;
  - location of hazards (physical, chemical and electrical) that will affect fire fighting operations and procedures to manage identified hazards during fire fighting operations;
  - such additional matters as required by the NSW RFS District Office (FMP review and updates).
2. To allow for emergency service personnel to undertake property protection activities, a 10 metre defendable space (APZ) that permits a minimum 4 metre wide, unobstructed vehicle access is to be provided around the perimeter of any fixed infrastructure.

## Comments

In response to the comments from NSW RFS, the applicant has indicated a commitment to prepare a Fire Management Plan in line with the criteria set down by NSW RFS.

To be included as conditions of consent.

## Transport for NSW (TfNSW) – formerly RMS

### Response

TfNSW has reviewed the referred information and provides the following comments to assist Council in making a determination:

- *Roads and Maritime would have no objection to the proposed increase in extraction from 150,000tpa to 230,000tpa provided that there will be no increase in the existing haulage limits of 28 loads/day and 120 loads/week.*
- *Council should be satisfied that the Traffic Impact Assessment (TIA) has adequately considered and addressed all of the impacts of haulage on the safety and efficiency of the road network.*
- *Roads and Maritime's response to the SEARs dated 22 May 2019 requested a swept analysis be undertaken at identified intersections along the haulage routes, at the access to the quarry and crushing plant. This information was not provided so Council should be satisfied that the largest vehicle can undertake turning movements along the haulage routes safely within the existing travel lanes.*
- *The TIA did not consider the operations of the Sunnyside processing facility. Condition 26 Point.1 of Tenterfield Shire Council's development approval dated 26 March 2015 required that in order to retain the northern access further consideration of its use and design will need to be demonstrated and approved by Roads and Maritime. This requirement has not been undertaken and therefore it would seem the development is in breach of its current approval.*
- *Material from the Sunnyside processing facility is being tracked out onto the highway's pavement. This needs to be rectified.*

## Comments

Council has reviewed the comments made by TfNSW and are satisfied that the likely impacts on the road network as a result of the quarry expansion are acceptable.

The Project does not seek to change the current weekly limit on traffic levels (120 laden loads per week, averaged over four weeks), therefore the monthly and annual number of vehicle movements would not change.

The daily maximum traffic levels would not change from the currently approved level of 28 laden loads per day.

The duration of the approval (until 2045) would not change from the existing approval and therefore traffic operations would not be prolonged any further than already approved.

Traffic types would not change from the currently approved vehicle configuration (that is truck and quad dog with a maximum payload of 40t and gross vehicle mass of 57.45t).

The applicant is responsible for the payment of contributions, thereby providing additional funding for Council managed works.

The northern entrance to the Sunnyside Plant has been closed which has met this concern.

## NSW Health (Hunter New England Local Health District)

### Response

The vast majority of dust from mining activities consists of coarse particles (around 40 per cent) and particles larger than PM10, generated from natural activities such mechanical disturbance of rock and soil materials by dragline or shovel, bulldozing, blasting, and vehicle movements on dirt roads. Particles are also generated when wind blows over bare ground and varying types of stockpiles. These larger particles can have amenity impacts as well as health impacts.

Human exposure to silica is known to occur in industrial and occupational settings and particularly recognised as an important occupational inhalation hazard.

Hunter New England Population Health is aware and endorse the NSW Environment Protection Authority (EPA) request for Additional Information Required to Inform EPA Assessment of Dowe's Quarry Expansion.

1. Noise Impact Assessment - additional information on operational noise and road traffic noise assessment.
2. Air Impact Assessment - additional information on the modelling scenarios and fugitive emissions.

The Human Health Risk Assessment for Respirable Crystalline Silica (HHRARCS):Expansion of Dowe's Quarry prepared by Environmental Risk Sciences Pty Ltd on behalf of R. W. Corkery & Co. Pty Limited (RWC) includes consideration of exposures that may occur within the community, the following is suggested (pg 43):

- Existing or background exposures to RCS - no data is available for the area near the Quarry, hence expected background level of RCS in air as discussed in Section 3.4, of 1.9 µg/m<sup>3</sup> has been adopted in this assessment. It is assumed that this background relates to RCS as PM2.5.
- Impacts from the proposed quarry operations - this has been modelled for the project, with the maximum incremental increase in annual average PM2.5 predicted to be 0.2 µg/m<sup>3</sup> (refer to Table 2.1) pg16. It is assumed that 100% of the PM2.5 is RCS.
- Total maximum annual average RCS exposures as PM2.5 are therefore 2.1 µg/m<sup>3</sup>, noting that the quarry is contributing only 9.5% of the cumulative exposure, with the remainder being assumed natural background exposure.
- This is less than the adopted guideline of 3 µg/m<sup>3</sup>.

On this basis, there are no health risk issues of concern in relation to community exposures to RCS in dust that may be sourced from 'The Quarry'.

There is correspondence received via this office and public submission from a collective of residents in varying proximity to the quarry that support a significantly less health based guideline level be adopted.

This office would be guided by the NSW Environment Protection Authority (EPA) on any environmental increase of particulate matter and standards/guideline limits that may apply.

Whilst the human body's respiratory system has a number of defence mechanisms to protect against the harmful effects of Particulate Matter, numerous studies link particle levels to increased hospital admissions and emergency room visits and even to death from heart or lung diseases. Both long (over years) and short term (hours or days) particle exposure have been linked to health problems.

Generally, it is thought that fine particles below 2.5 µm in diameter may be of a greater health concern than larger particles as they can reach the air sacs deep in the lungs. However, coarse particles (PM 2.5-10) could also be associated with adverse health effects.

When assessing health risks, both incremental changes in exposure from existing background pollutant levels and the cumulative impacts of specific and existing pollutant levels should be addressed at the location of receptors. Exposure should be assessed at the location(s) of the most affected receptor(s).

#### **Potable Water Supply**

Businesses or facilities that supply drinking water from an independent water supply (i.e. not town water) need to follow the NSW Health Private Water Supply Guidelines(2014). The Public Health Act 2010 and the Public Health Regulation 2012 require drinking water suppliers, including private water suppliers, to develop and adhere to a 'quality assurance program' (or drinking water management system). Further information and templates can be found at: <http://www.health.nsw.gov.au/environment/water/Pages/private-supplies.aspx>

There appears to be no mention of a potable water supply for the facilities and employees at Dowe's Quarry. It is expected that there is no town water supply to the site and therefore the assessment should include comment on issues associated with drinking water quality and rainwater tanks. The peak reference document in Australia for information in relation to rainwater tanks is in Health's Guidance on use of rainwater tanks (2010), which is accessible at: <http://www.health.qov.au/interneVmainIpublishing.nsf/ContenVohp-enhealth-raintank-cnt.htm>

#### **S4.15(1)(e) the public interest**

Submissions made by the public and public authorities have been assessed and considered throughout this report. The public interest has been considered and it is concluded that the approval of the application will not be contrary to the public interest subject to the implementation of recommended conditions of consent.



### 3 CONCLUSION

The development application seeks consent for the continued operation and expansion of extraction operations within Dowe's Quarry, which would also include an increase to the total area of disturbance, an increase to annual production and product despatch, campaign-based on-site processing for some products, the backloading of fines material from the Sunnyside Plant and progressive backfilling of overburden and fines within the extraction void.

The activities for which the Applicant is seeking development consent would involve the following.

- Ongoing extraction of quartzose rock within the existing extraction area and a 4.5ha extension of the extraction area, producing up to 230,000 tonnes of rock per year.
- Total extraction for the quarry is not to exceed 4.8 million tonnes.
- Dispatch of not more than 120 laden trucks per week (averaged over a four-week period) with a maximum of 28 laden trucks on any one day;
- Normal product dispatch is limited to weekdays (public holidays excluded) with contingency operations of a Saturday permitted on no more than ten (10) Saturdays per year.
- Campaign crushing and screening on site using mobile processing equipment.
- Transportation of extracted rock to the State road network for delivery to the Sunnyside Crushing and Screening Plant located adjacent to the New England Highway, 10km northwest of Tenterfield or on occasions to alternate locations within or beyond the New England Region.
- Backloading of clay fines and crusher fines from Sunnyside to Dowe's Quarry.
- Progressive emplacement of overburden and returned clay fines within and adjacent to the extraction area.
- Storage of surplus crusher fines from Sunnyside awaiting sale and transportation. Any subsequent transportation of crusher fines from the Quarry Site is not included in the annual production limit;
- Period of Extraction of Material of no more than 25 years from the date of consent; and
- Rehabilitation of the site.

The application has been assessed in accordance with the provisions of the *Environmental Planning & Assessment Act 1979* and *Environmental Planning & Assessment Regulation 2000*. Evaluation and assessment of the application in accordance with the legislative framework has demonstrated that the proposal is satisfactory.

It is recommended that Development Application 2019-101 for continued operation and expansion of extraction operations within Dowe's Quarry located on the subject land be approved subject to the conditions contained in Annexure B.

## Annexure A – Associated Plans and Reports

## Annexure B – Recommended Conditions of Consent;

## Annexure C – Agency Responses

## Annexure D – Submissions



## Annexure E - Applicant's response to the submissions

## Annexure F – Human Health Risk Assessment for Respirable Crystalline Silica: Expansion of Dowe's Quarry