RESPONSE TO SUBMISSIONS

1. INTRODUCTION

This response has been prepared to address the range of issues included in the six public submissions lodged with Tenterfield Shire Council during the public exhibition of the *Environmental Impact Statement* for the Continued Operation of the Dowe's Quarry. The various issues have been addressed collectively with a common response.

2. AIR QUALITY INCLUDING DUST

Summary of Submissions

Several submissions raised concerns regarding potential impacts from dust emissions caused by Quarry operations and the transportation of material between Dowe's Quarry and the Sunnyside Crushing and Screening Plant.

Response

Operational controls and management measures that would be implemented to limit potential impacts from dust emissions generated through operational activity at the Project Site are described in Section 4.3.5 of the EIS. In regards to the proposed sealing of the quarry access road at the intersection with Mount Lindesay Road, the Applicant has committed to further extend the sealed section for a further 100m to further limit potential impacts from dust lift off as trucks enter and exit the Quarry, i.e. a total of approximately between 500-600m.

It is considered that with the implementation of operational controls and management measures described in the EIS and the proposed extension of the sealed section of the quarry access road that potential impacts from dust emissions will be suitably mitigated with the amenity of nearby residents and motorists travelling along Mount Lindesay Road maintained. The additional sealing would further reduce dust levels which were already established through detailed modelling to satisfy the limits nominated by the Environment Protection Authority.

Should complaints be received regarding dust emissions these would be investigated thoroughly and appropriate controls put in place to ensure dust emissions are managed to a suitable standard.

3. DUST IMPACT TO DRINKING WATER

Summary of Submissions

Two submissions raised concerns regarding the potential impact to local sources of drinking water from dust emissions.

Response

Recent research conducted in Queensland (in close proximity to the Dalrymple Bay Coal Terminal) investigated the potential health risks as a result of elements contained in dust

deposited on rooftops entering rainwater tanks systems used for potable supply (Lucas et. al., 2009)[1]. Rainwater samples were collected from both the rainwater tanks and taps of three homes within the dust deposition zone of Dalrymple Bay area. Leaching tests were then conducted to identify the potential for trace element release into rainwater in the tank. The results indicated that all trace elements were below the Australian Drinking Water Guidelines (ADWG) which provides the threshold levels considered safe for human consumption.

Additional research has been carried out by the Gloucester Shire Council that assessed the differences between rainwater tank water quality in areas near mining and those remote to mining. The research concluded that there were no significant differences in the tank water quality for villages in close proximity to mining (the village of Stratford was used) and other villages tested.

These consistent results indicate that dust emissions from the Quarry (which is generating considerably less dust than each of the above mines) are not likely to significantly impact drinking water quality at nearby residences whose occupants who rely on rainwater as a drinking water source.

4. DUST IMPACT TO HUMAN HEALTH

Summary of Submissions

A single submission raised a concern regarding potential impacts to human health resulting from dust emissions, specifically the potential for affected residents to develop silicosis.

Response

Silicosis results from prolonged inhalation of airborne crystalline silica particles which accumulate in the lungs causing diseases of the respiratory system. The Gazetted limit for the concentration of respirable quartz-containing dust for open cut coal mines was established in the NSW Government Gazette No. 185 on December 21 2007[2] as 0.1mg/m^3. A Safe Work Australia publication on crystalline silica notes the following.

> *'Silicosis virtually always requires prolonged exposure to substantial airborne quantities of respirable crystalline free silica.'*[3]

Assessments undertaken in conjunction with the preparation of the EIS considered peak incremental 24 hour average PM_{10} concentrations of 15µg/m^3 could be experienced 200m from the Project Site and would present a worst case scenario for operations under the Proposal (Environ, 2014). These results indicate that PM_{10} levels, which would include crystalline silica

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[1] **Lucas S A, Coombes P J, Planner J and Welchman S (2009)** "*Rainfall harvesting and coal dust: the potential health impacts of trace elements in coal dust in rainwater*", Air Quality and Climate Change Vol. 43 No. 2 May 2009 pp23-30.

[2] NSW Government Gazette No. 185 (December 21 2007). Available at http://www.resourcesandenergy.nsw.gov.au/__data/assets/pdf_file/0009/203202/Airborne-dust-limits,-collection-and-analysis.pdf

[3] Safe Work Australia (2014). Hazardous Chemical Requiring Health Monitoring – Crystalline Silica. Available at http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/797/Crystalline%20Silica.pdf

and other matter, are predicted to be significantly lower than established exposure levels used as triggers for monitoring the health effects crystalline silica.

Silicosis remains an occupational health risk at Dowe's Quarry and will continue to be managed through staff education, the use of appropriately ventilated and filtered cabs on all machinery and use of appropriate face masks where this is required. Airborne crystalline silica would not present a significant environmental health issue. In fact, there are no documented cases of silicosis in a community and surrounding any mine with a high proportion of silica in the rock being mined.

5. ROAD DEGRADATION AND CAPACITY

Summary of Submissions

Four submissions raised concerns regarding potential degradation of the Mount Lindesay Highway and other roads along the transport route including concern over the proposed traffic levels and road capacity.

Response

Concern regarding degradation of the road surface along the proposed transportation route has been suitably addressed in the EIS through the Applicant's commitment to pay regular contributions to the Tenterfield Shire Council to be put towards maintenance of roads along the proposed route used by trucks travelling between the Quarry and the Sunnyside Crushing and Screening Plant. More information on this contribution is available in Section 4.2.3 of the EIS.

6. DRIVER CONDUCT

Summary of Submissions

A single submission raised concerns regarding the conduct of drivers transporting material between Dowe's Quarry and the Sunnyside Crushing and Screening Plant.

Response

The professional conduct of drivers transporting quarry-related material between Dowe's Quarry and the Sunnyside Crushing and Screening Plant would be maintained through the continued implementation of a Driver's Code of Conduct introduced in June 2014 (see Appendix 5 of the EIS). All drivers are required to sign and operate by this code of conduct, which is included in driver inductions and a copy retained within the vehicle cab at all times.

The Applicant also maintains a complaints system and would ensure all complaints concerning driver behaviour are addressed and any issues rectified.

7. INTERSECTION VISIBILITY

Summary of Submissions

A single submission expressed concern over visibility along Mount Lindesay Road for traffic entering the road.

Response

Safety at each of the intersections along the proposed transportation route was considered in Section 4.2.2.3 of the EIS. The limited visibility at several intersections with Mount Lindesay Road has been noted. It is considered that by limiting truck speed along the Mount Lindesay Road to no greater than 80km/hr through the Driver's Code of Conduct, the Applicant is taking all reasonable measures to ensure safety at these intersections. It is noted that Quarry trucks travelling along Mount Lindesay Road have right of way at these intersections.

8. SCHOOL BUSES

Summary of Submissions

A single submission raised concerns regarding the use of road that are also used as school bus routes.

Response

The interaction of quarry-related trucks with the school bus routes that coincide with the transportation route was addressed in Section 4.2.2.7 and 4.2.4.2 of the EIS.

Concerns raised in consultation with Mr Trevor Austin, who runs the school bus service, regarding truck speed and material falling from trucks, have been addressed through the implementation of a Driver's Code of Conduct that all drivers are required to sign and operate by. Upon the recommendation of the traffic consultant commissioned for preparation of the EIS, this Code of Conduct would be updated to include the location of school bus routes and bus stops. A copy of this Code of Conduct will be kept within the vehicle cab at all times.

It is not considered that quarry-related vehicles will endanger students waiting for or disembarking from school buses along the transportation route as procedures outlined in the Driver's Code of Conduct would direct driver behaviour and maintain pedestrian safety, as much as is practically possible.

9. NOISE

Summary of Submissions

Two submissions raised concerns regarding noise impacts from the Proposal, including truck noise on local roads.

Response

Potential impacts resulting from operational activities at the Quarry and road noise from transportation activities were assessed in Section 4.4.7 of the EIS and the Noise and Blasting Impact Assessment conducted by Spectrum Acoustics (see Appendix 7 of the EIS). The impact assessment concluded that predicted operational and road noise would be compliant with criteria established in the *NSW Industrial Noise Policy* and *NSW Road Noise Policy*.

The Applicant has also committed to maintaining a complaints management system to ensure that any complaints are appropriately addressed. It should be noted that no noise complaints have been received over the past 27 years of operations.

10. BLASTING

Summary of Submissions

Two submissions raised concerns regarding potential structural damage that may result from blasting activities at the Project Site.

Response

Potential impacts resulting from blasting activities at the Quarry were assessed in Section 4.4.8 of the EIS and the Noise and Blasting Impact Assessment prepared by Spectrum Acoustics (see Appendix 7 of the EIS).

The assessment considered predicted overpressure and vibration levels against criteria established by the Australian and New Zealand Environment and Conservation Council (ANZECC) in their publication *"Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration – September 1990"*. The assessment concluded that the worst case blast impact levels would be well below the overpressure and ground vibration criteria at the potentially worst impacted receivers.

It should also be noted that to date no structural damage has been identified as a result of existing operations at Dowe's Quarry.

11. THREATENED SPECIES

Summary of Submissions

A single submission raised concerns over the validity of the ecological assessment of threatened species, asserting that the survey results were not representative of flora and fauna within the Project Site.

Response

The methodology applied to the ecological field surveys in conjunction with the preparation of the EIS are described in Section 4.7.2 of the EIS and in greater detail in Section 2 of the Ecological Assessment (see Appendix 8 of the EIS).

The Applicant accepts there are limitations to the extent that surveys can provide an accurate assessment of potential threatened flora and fauna that are present at any given site. For this reason the assessment included a consideration of threatened and migratory species listed under international agreements and Commonwealth or New South Wales legislation that have the potential to, or are known to, occur within the vicinity of the Project Site. Each of these species was considered in the assessment of potential impacts to matters of national environmental significance or to species listed as threatened in the *Environment Protection and Biodiversity Conservation Act 1999* or the *Threatened Species Conservation Act 1985*.

Further details of the results of these assessments are provided in Section 4.7 of the EIS and the Ecological Assessment prepared by Eco Logical Australia (Appendix 8 of the EIS).

12. DISTANCE TO NEARBY RESIDENCES

Summary of Submission

A single submission raised concern regarding reference in the EIS to the distance between the proposed extension to the extraction area and Residence 3a (see Figure 4.3 in the EIS).

Response

Reference in the EIS to a distance of 550m between the western limit of the proposed extraction area and Residence 3a has been found to be erroneous. The distance to Residence 3a was verified in a survey undertaken by Ken Cockburn of Landpartners on 11 September 2014. The survey was based on the proposed quarry design supplied in the EIS and indicated that the distance between the proposed western extent of the extraction area and Residence 3a would be 618.8m. Please see Section 2, 3 and 4 of this document for discussion regarding air quality.

13. CONCLUSION

All issues raised in the six submissions have been addressed in the EIS and reviewed in this document. The EIS has in effect increased the level and environmental performance and accountability of Darryl McCarthy Constructions Pty Ltd.