Martins Creek Quarry Action Group PO Box 500 Paterson NSW 2421 T: 02 4938 5873 www.mcqag.org

MCQAG
Martins Creek Quarry Action Group

16th December 2016

The Minister for Planning
Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

Martins Creek Quarry Expansion – Application No SSD-14_6612

Dear Minister

1. Martins Creek Quarry Action Group is an incorporated community organization formed to represent members and the community who are impacted by the current operations and proposed State Significant development expansion plans (the Proposal) of Martins Creek Quarry at Station Street, Martins Creek (the Site). Our members reside in Martins Creek Village, Vacy Village, Paterson Village, Paterson Valley Estate, Duns Creek, Woodville, Butterwick, Brandy Hill, Wallalong, Bolwarra Heights, Bolwarra, Lorn and East Maitland.

2. We understand the Proposal seeks approval to expand the existing extraction area, including clearing 37.8 hectares of vegetation, extracting up to 1.5 million tonnes of hard rock material per annum increasing the hours of operation from 4:30am to 10pm, transport of processed material to market by road trucks (with peak output of 80 truck movements per hour) and rail.

3. We write to oppose in its current form the State Significant development application by Buttai Gravel Pty Ltd (Daracon – the proponent) and its accompanying Environmental Impact Statement (EIS) prepared by the proponent and exhibited between 13th October and 24th November 2016. In particular, we set out in our submission below a number of concerns which we have with the EIS and request that relevant principles of case law be adopted in the decision making process.

Introduction

4. The proposed expansion of Martins Creek Quarry (MCQ) as presented within the EIS will seriously and adversely impact upon the amenity of multiple communities within Paterson River Valley and Maitland Hinterland.

5. These areas are made up of thriving urban and rural communities that have significant built and natural environmental values and in their own right are activity centres, meeting places, residential populations and above all place in which people love to live.

6. These communities are valued by residents and visitors alike for their rural amenity, character, ambience, scenery, natural beauty, European settlement and aboriginal history and as areas where the pleasure of neighbourhoods and outdoor surrounds can be enjoyed.

7. Our association's concerns about serious and adverse impacts are **not** based upon unfounded fears or perceived outcomes from a proposed development. These concerns are based on our committee, membership and communities already having **endured and experienced the impacts from current operations** and unlawful intensification which continue to occur on and from the site. We note that the current operator of the facility (and proponent of the EIS) has been the subject of multiple investigations and enforcement notices by the NSW EPA relating to breaches of existing EPL conditions at the site. We question the proponent's commitment to the community and the environment within which they operate on the basis of these breaches, the continued complaints being logged against the site and proponents own choice to ignore the 1991 consent conditions and 1990 EIS environmental controls over the site.

8. Martins Creek Quarry Action Group has at no time advocated for the closure of MCQ. Rather our committee acknowledges the importance of high volume low value construction materials won from quarry facilities as a commodity for the construction sector and for the broader benefit of the state in regards to construction of infrastructure. We also acknowledge the historical significance of the site, it has co-existed and provided local employment for ~100 years within these communities.

9. We have attached extracts from the existing 1991 Consent conditions issued by the current consent authority Dungog Shire Council and the 1990 EIS. The 1991 consent was the subject of an EIS that assessed the impacts of a 300,000tpa extraction facility. The consent conditions were issued over the development in order to protect the environmental values of the area and preserve amenity of impacted and neighbouring residents.

10. Our committee seeks that the facility be required to operate on a more reasonable scale than that asserted within the EIS and that it continues to co-exist within the communities that surround the site and the haulage routes. The facility should operate in a manner and with modern consent conditions such that the local amenity of residents adjacent to the Site and haulage route is preserved. We have included in Appendix 2 Hunter Expressway Traffic Flows from October 2016 and note the Proposal seeks approval for heavy vehicle movements from the Site at hourly rates equivalent to the Hunter Expressway volumes through rural and residential communities.

11. We submit that the Proposal as exhibited fails to acknowledge key issues around noise, dust and vibration emissions from the Site and impacts of the trucking of product from the site along the haul routes. The Proposal lacks any amelioration of impacts already experienced and is therefore an incompatible land use development as detailed in our submission below.

Summary of Concerns

- Via this State Significant Development planning process the proponent is amongst other things seeking to *consolidate existing operations and approvals.* The current consent authority is seeking various declarations and orders from the Land & Environment Court against the MCQ operator in regards to the current un-lawful operations occurring at the site. ***We request that the Department of Planning's (DoP) assessment of the Proposal be deferred until the Court has ruled on this matter to enable a) the community, proponent and decision makers alike to know what the lawful current consents are prior to their consolidation and b) baseline data within the EIS to be correctly reflected within a revised EIS prior to a decision on the Proposal being made.***

- The magnitude of operations proposed within the EIS are similar and in some cases greater than the current operations from the facility that our Group and Dungog Council assert are being conducted unlawfully. Numerous environmental assessments have incorrectly incorporated the current operations impacts within base line environmental assessments as discussed in later sections in this document. If the DoP chooses not to defer the assessment of this Proposal until after the February 2017 court ruling then ***we request the Minister to require the Proponent to revise the EIS to record base line data, such that the existing impacts are documented to be no greater than those approved via the 1991 consent issued by Dungog Shire Council i.e. 300,000 tonne per annum extraction, wining material for the purpose of ballast, 24 trucks per day, extraction from Lot 5 only and 30% of product by road only.***

- The impacts from current operations both onsite and offsite are significant and in some cases intolerable for many of our members. The impacts that we discuss later in this document have been wilfully ignored by the Proponent within the EIS. ***We request the Minister to require the Proponent to address these existing un mitigated impacts within a revised EIS submission prior to the DoP assessing the Proposal***

- The Proposal does not satisfy the objectives of RU1 primary production zoning the land upon which the developed is proposed. The Proposal does not satisfy and is in conflict with the zoning objectives of land immediately adjoining the Proposal area being R5 Large Lot Residential of Paterson Valley Estate and RU5 Village of Martins Creek. Furthermore the Proposal does not satisfy and is in conflict with the zoning objectives of land immediately impacted by the proposed haulage routes being RU5 Village of Paterson and R5 Large Lot Residential of Bolwarra. **We respectfully submit that the operation that is of the magnitude and scale presently and that which is proposed within the EIS be refused.**

Decision Making Process

12. In making a determination of the Proposal the Minister's power under section 89E and 79C of the *Environment Planning and Assessment Act* **(EPA Act)** is to grant or refuse an application and requires the consideration of the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;

    - Her Honour Justice Jagot, in CEAL Limited v Minister for Planning & ors [2007] [67] stated that "*Amenity has consistently been described as a wide and flexible concept, embracing such matters as the character of a place and the attributes of place which a community values as important contributors to its character"* ***We request the Minister to consider the impacts on amenity of the Proposal be included as relevant matters within the decision making process.***

    - His Honour Justice Preston, the Chief Judge, identified the nature of the decision-making process under section 79C as involving the resolution of a polycentric problem. His Honour explained this "*as involving a complex network of relationships, with interacting points of influence. Each decision made communicates itself to other centres of decision, changing the conditions, so that a new basis must be found for the next decision"*

13. As we understand it, the Minister in making his decision to grant or refuse the proposal must *identify the relevant matters to be considered, find the facts that relate to the relevant matters, then determine how much weight to give each of the relevant matters and then finally, to balance the weighted matters to arrive at a managerial decision".* ***We request the Minister to adopt the approach described by his Honour Justice Preston and ask significant weighting be given in favour of the communities whose amenity, values and characters will be impacted upon by the Proposal.***

Conflicting Land Use & Planning Objectives

14. The EIS gives little consideration to the Dungog Shire Local Environmental Plan 2014 (LEP). The planning for the Dungog Shire and the areas of Martins Creek, Vacy and Paterson are embodied within this LEP. When read in its entirety it is clear that the LEP is intended to promote development that seeks among other things to preserve rural amenity, promote the growth of individual settlements as local service centres, enhance the character, including the cultural and built heritage, of each village. Section 79C of the EPA Act requires consideration to be given to relevant planning instruments and we are of the understanding the LEP is one such instrument. Clause 2.3 (2) of the LEP states that the consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.

15. The land upon which the development is proposed is zoned RU1. The objectives of the of RU1 Primary Production Zone are;

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*
- *To provide for recreational and tourist activities that are compatible with the agricultural, environmental and conservation value of the land.*
- *To promote the rural amenity and scenic landscape values of the area and prevent the silhouetting of unsympathetic development on ridgelines.*

16. The Proposal is inconsistent with a number of these objectives listed above

17. In CEAL Limited v Minister for Planning & ors [2007] her Honour Justice Jagot stated [60] that *Zone objectives have a broader function than the operation of provisions [*of the relevant clause*] of the LEP. Local environmental plans are intended to contain coherent schemes regulating land use planning within a defined area. Most local environmental plans use zones to identify the development permissible with and without consent and prohibited on land within the area. The impacts of development can, and often do, cross zoning boundaries*. She went on to state in regards to the matter that "*One impact of the proposed development is that Monday to Saturday between the hours of 7.00am to 6.00pm, 52 weeks of the year, excluding public holidays, an additional 48 heavy vehicles (being a truck and three axle dog trailer) will pass along King Street, Bungonia, when the quarry is fully operational. Whether or not that impact is appropriate necessarily requires consideration of the planning scheme embodied by the LEP*."

18. The land upon which the development will impact upon via the proposed haulage routes and via offsite impacts from industrial noise, blasting and dust are zoned R5 and RU5.

19. The objectives of R5 Large Lot Residential Zone are;

- *To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality.*
- *To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future.*
- *To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*
- *To isolate housing from existing intensive agriculture or future intensive agricultural areas.*

20. The objectives of RU5 Village Zone are:

- *To provide for a range of land uses, services and facilities that are associated with a rural village.*
- *To promote the growth of individual settlements as local service centres.*
- *To encourage a variety of mixed-use development.*
- *To enhance the character, including the cultural and built heritage, of each village.*

21. The Proposal is inconsistent with a number of these objectives listed above and ***we request the Minister to give consideration to these objectives and the planning scheme embodied within the LEP in the decision making process. Specifically we request the Minister to consider the appropriateness of the impacts (past, present and future) having regard to the LEP.***

Air

22. We note that the Air Quality Impact Assessment (AQIA) has incorporated background air quality data that according to Section 4 includes *effects of existing operations*. We note the current operations are the subject of class 4 LEC proceedings. ***We request the Minister to require the proponent to assess air quality impacts using background data that exclude effects of the current disputed illegal operations.***

23. We have attached photos in Appendix 5 Dust Impact that record current dust impacts from operations at the Site. It is apparent that in pit crushing using mobile plant results in unmitigated releases of dust to the surrounding land. It is also apparent from resident's accounts that conveyor start up and shut down operations in the Lot 1 processing area results in significant releases of particulate to atmosphere. The AQIA understates release from processing equipment and fails to assess the impacts of in pit crushing operations using mobile plant. ***We request the Minister require the proponent to assess the impacts of mobile crushing plant on air quality predictions and provide technical justification for the release of dust in the manner shown in photos. We request the Minister to require the proponent to address and remedy the out-dated Lot 1 processing dust control measures that are currently in place.***

24. Our members and other surrounding residents of the Site have reported (as noted in the Department of Planning public meeting 2nd November 2016) significant and unmitigated dust impacts from the facility that do not correlate with the AQIA findings. We submit grave concerns in regard to the air emission from the site currently and refer to Appendix 6 Silica Content which includes lab test reporting of MCQ ballast showing free silica content is ~14%. This level of silica content poses significant occupational health and safety concerns both to workers and to impacted residents. ***We request the Minister impose conditions in any new consent that a) require improved air quality monitoring by replacement of existing depositional gauges with Taper Element Oscillating Microbalance (TEOM) monitors with data being made publicly available in real time and b) require that fully enclosed processing facilities and improved dust suppression measures be mandated commensurate with modern processing facilities located within urban areas.***

25. The AQIA has chosen to select only a small portion of receptors in Section 4 table 4. We note the exclusion of receptors on the Western side of Dungog Road, Paterson Valley Estate, Martins Creek Village and Merchant Road residents who all fall within the affected area of MCQ operations. ***We request the Minister require the proponent to incorporate all sensitive receptors listed above within a revised AQIA***

26. Our members who reside along the haulage route have reported diesel particulate deposits on washing, window sills and interior surfaces of residential dwellings during periods where hundreds of trucks are utilized to unlawfully transport product from the site currently. The AQIA makes reference in section 5.2 to dust impacts from trucks in Paterson and Bolwarra but fails to assess the air quality impacts to residents (some of whom who live only metres from the haulage route) due to diesel emissions at the proposed scale of operations. ***We request the Minister require the proponent to assess the impacts of diesel emissions and air quality along the haulage route***

27. The emission inventory table 8 of the AQIA and we assume the modelling itself has incorrectly excluded vegetation and top soil clearing, mobile crushing plant, pug mill processing, rail loading and site rehabilitation works. The inventory table also makes reference to only 12 trucks used to transport product to market ***We request the Minister require the proponent to incorporate mobile crushing plant, pug mill processing, rail loading, vegetation clearing and site rehabilitation works and actual proposed truck numbers per hour within an updated revision of the AQIA***

28. The AQIA is silent on any proposed changes to location of the wheel wash-down bay proposed with the change in quarry access road. The Engineering Assessment eludes to the change in wheel wash-down location. ***We request the Minister require the proponent to clarify all proposed improvements to air quality mitigation measures (including relocation of wash down facilities) within the EIS and/or AQIA***

Noise

29. We have attached in Appendix 8 Noise Impact Assessment – Peer Review, being a MCQAG commissioned report which contains the results of an acoustic review and a supplementary submission. This review was performed by an appropriately qualified acoustic expert. The results of the review contain numerous recommendations and highlight significant deficiencies in the current NIA. ***We request the Minister to require the proponent to address the deficiencies and errors identified from the appended Bridge Acoustic Peer Review within a revised NIA.***

30. In addition to the Peer Review's recommendations, MCQAG also notes that the EPA Road Noise Policy requires NIA's to consider noise impacts to places of worship and public open spaces. We note two operational churches (St Pauls Anglican Church and Bolwarra Uniting Church) and three public open spaces (John Tucker Park, Kings Park and Bolwarra Heights Scenic Lookout) are located along the haulage route. ***In accordance with the RNP we request***

the Minister to require the proponent to complete noise impact assessments on the above listed places of worship and public open spaces.

Blasting & Vibration

31. We have attached publicly available records of complaints in relation to the MCQ facility within Appendix 4 Public Records of Complaints. It is clear from these records that there is significant off-site impact to surrounding residents in regard to blasting. As noted in the last two public meetings blasting impacts include shaking of crockery, cracking of walls and brick work, disturbance to horses and other pets and even the reported shaking off of a toilet cistern from a bathroom wall. The blasting impacts due to intensity variability also result in un-nerving anxiety imposed upon neighbouring residents who must wait throughout the day for quarry silence as pit operations are halted and then brace themselves, their pets and their households for the blast. Will it be a big one or a small one?

32. The experiences of residents does not correlate to the published blast monitoring data that indicates compliance with relevant criteria. Section 3 of J0232-01-R1 Acoustic Review within Appendix 8 Noise Impact Assessment – Peer Review includes commentary and recommendations in regards to blasting impacts. ***We request the Minister require the proponent to implement the recommendations outlined in in the Acoustic Review in regards to blasting***

Traffic

33. The proponent has taken the approach with the EIS to essentially ignore off site impacts relating to transport of product from the site. In spite of these impacts being raised by residents at the 31st July 2014 public meeting and at numerous MCQ CCC meetings that followed, the proponent has chosen to ignore this issue. Complaints regarding trucking impacts in Appendix 4 Public Records of Complaints demonstrate that administrative controls such as the "driver code of conduct" are ineffective. If there were no issues or impacts and the controls were working there would be no complaints.

34. The EIS and Traffic Impact Assessment (TIA) omit any estimates on other vehicle classes that will be accessing the facility. There is no estimate on construction vehicles, no estimate on daily vehicular access that would relate to re-fuelling, supply of pug mill product, supply of bitumen pre coat, maintenance vehicles nor are there any estimates on heavy haulage / permit load movements proposed to occur to and from the facility. ***We request the Minister require the proponent to update the TIA to incorporate estimated daily vehicle movements of all vehicles planned to access the proposed development.***

35. As with other impact assessments the TIA has incorporated background (existing) conditions that include existing heavy vehicle traffic from the site within data. The current operations are disputed by the current consent author to be un lawful and are the subject of Class 4 Land and Environment court

proceedings. ***We request the Minister require background traffic data to exclude effects of the current disputed illegal operations and to consider the traffic impacts associated with increasing heavy haulage from the site from the 1991 approved 24 truck movements per day to the proposed 80 truck movements per hour as outlined in the Proposal.***

36. Specifically with regards to traffic networks, Section 4 of the RMS Guide to Traffic Generating Development outline the requirements to assess impacts to Amenity. The section outlines requirements for assessing the environmental capacity of the roadway subject to the proposed traffic generating development. No assessment or commentary is made within the TIA or the EIS main body in regards amenity impacts or to the environmental capacity of the proposed haulage route. According to the Guideline environmental capacity is determined by traffic volume, traffic composition, in particular the proportion of heavy vehicles, vehicle speed, road reserve and carriageway width, number of traffic lanes, gradient, road surface condition, distance from road carriageway to property boundary, nature of intervening surfaces, setback of building from property boundary and the type and design of building. ***We request the Minister require the proponent to incorporate amenity impacts and environmental capacity within a revised TIA that take in to consideration the elements listed above from the RMS Guide particularly in relation to Paterson Village, Martins Creek Village, Butterwick Rd, Brandy Hill and Bolwarra Heights.***

37. The TIA traffic safety audit results are in our opinion deficient and have omitted a number of significant safety issues that have been experienced as occurring under the current unlawful operations. We have outlined these safety concerns below and provide visual references in Appendix 7 Road Condition & TIA Photos, ***we request the Minister require the proponent to address the safety issues listed below in a revised TIA***;

    - Appendix 7 Road Condition & TIA Photos Photo 1: The proposed new exit on to Dungog Road lacks adequate lines of sight for both entering and exiting vehicles and omits a sheltered accelerating lane for north-bound heavy vehicles exiting the proposed facility. The proposed sheltered lanes appear to be inadequate in length based on the potential for more than one class 9 vehicle to be accessing the intersection at any given time at peak rates of 40 loads per hour. The proposed new exit makes no safety provisions for existing residential driveways located on the western side of Dungog Rd opposite the proposed new entrance road. It is not clear from the Proposal how existing residents who will be impacted from the proposed new entrance way will be expected to safely enter and exit their properties.

    - Appendix 7 Road Condition & TIA Photos Photo 2: No detailed consideration has been given in regard to the adequacy and safety issues of Gostwyck Bridge. In spite of TIA commentary that the RMS approve its current use, we note that the south-bound approach to this one way bridge is on a blind corner and requires MCQ heavy vehicles to radio their approach. MCQAG considers this one way bridge to be a significant safety hazard. The TIA makes no assessment of traffic safety to non-quarry vehicles (who do not monitor UHF channels) in regards

to the approach to the bridge. During peak unlawful quarry operations there have been multiple near misses involving road users and class 9 vehicles on this bridge. It is MCQAG view that this bridge is totally inadequate for both the current scale of operation and future proposed expansion parameters.

- The proposed intersection upgrades at the Dungog-Gresford Roads appear to be deficient. There is limited sheltered turning lane length (60m). There is already daily occasions where class 9 quarry vehicles convoy to the facility each morning. This limited sheltered lane length will result in class 9 vehicles un acceptably occupying the north bound Gresford Rd lane during periods of South bound peak traffic as they wait to turn on to Dungog Rd.

- Appendix 7 Road Condition & TIA Photos Photo 3: No consideration has been provided to the safety issues generated by traffic entering King St from Church St. This turn is utilized by local residents but also by road users accessing and egressing from both Paterson Primary School, Paterson Historical Rail Society, St Columbas Catholic Church, Paterson Court House and Paterson sports ground area. Vehicles entering King St from Church St are required to enter with a reduced sight line to the north. Conversely the South bound right hand turn from King St in to Church St has no sheltered turning lane. The safety issues relating to this intersection have not been addressed or considered in the current TIA

- Appendix 7 Road Condition & TIA Photos Photo 4: Paterson Village according to Austroad Guidelines is an activity centre. No consideration has been given within the TIA or EIS body as to the impacts of this activity centre by the proposed development. From photo 4 it can be seen that this area is a place where people come to shop, eat, fuel vehicles, collect mail, and socialize and to attend places of worship. The photo shows already class 9 quarry vehicles having to cross double white lines to afford room for commercial precinct customers to enter and egress driver side doors of parked cars. No consideration has been made as to the impacts to pedestrians or parking in regards to the proposed magnitude of haulage. It is MCQAG view that the impacts to this activity centre both at the current scale of operation and future proposed expansion parameters is totally unacceptable and an alternate route that avoids this activity centre should be proposed by the proponent as part of a revised TIA.

- Appendix 7 Road Condition & TIA Photos Photo 5: Tocal homestead entrance, no consideration has been made for other road users safety having regard to the significant numbers of vehicles that enter and exit the Tocal homestead (wedding venue and historical place of interest). There are no proposed sheltered turning bays. No consideration within the TIA has been made as to the risks posed by other road users entering and exiting this site at the proposed magnitude of haulage (80 truck movements per hour).

- Appendix 7 Road Condition & TIA Photos Photo 6: Mindaribba House wedding venue. No consideration has been given for other road users safety having regard to the significant numbers of vehicles that enter and exit the Mindaribba House (wedding venue). There are no proposed sheltered turning bays. No consideration within the TIA has been made as to the risks posed by other road users entering and exiting this Site at the proposed magnitude of haulage (80 truck movements per hour).

- Appendix 7 Road Condition & TIA Photos Photo 7, 8, 9 and 10: Tocal Rd intersections with Lang Dr, Maitland Vale Rd, Moore Rd and Wesley St; no consideration has been given within the TIA for sheltered turning lanes for the entry and egress of these above listed streets. It is evident from heavy vehicle tyre marks that emergency braking is used in these areas as north bound right turning vehicles turn off Tocal Rd. No consideration within the TIA has been made as to the risks posed by other road users entering and exiting this site at the proposed magnitude of haulage (80 truck movements per hour).

- Appendix 7 Road Condition & TIA Photos Photo 11, the intersection of Tocal Rd and Paterson Rd (turn off to Largs); present traffic flows show significant volumes of traffic merging from a south bound acceleration lane. This lane is deficient at current flows for the safe merging of traffic. No consideration within the TIA has been made as to the risks posed by other road users at this intersection based on the proposed scale of haulage. This intersection poses unacceptable safety conditions based on the proposed scale. An upgraded intersection configuration in accordance with Austroad Guidelines should be incorporated into a revised TIA

- Appendix 7 Road Condition & TIA Photos Photo 12, the intersection of Paterson Rd and Bolwarra Rd. The TIA provides no assessment of the safety issues presented by the proposed scale of haulage in regards to this intersection. We note that this intersection is the primary access point for Bolwarra Heights Public School. There are significant numbers of vehicles utilizing this intersection, there are currently no sheltered turning bays provided at this intersection. This intersection and the proposed magnitude of haulage pose un acceptable safety risks to road users.

- Appendix 7 Road Condition & TIA Photos Photo 13, the Tillys Childcare centre directly accesses Tocal Rd. The access point is located on a sweeping bend. No assessment has been made in regards to the safe entry and egress of vehicles accessing this facility. This driveway access and the proposed magnitude of haulage poses unacceptable safety risks to road users based on the propose trucking rates.

- Appendix 7 Road Condition & TIA Photos Photo 14, Dunmore Bridge. The TIA provides no assessment of the adequacy of Dunmore Bridge located to the south of Paterson. The bridge pavement width measures approximately 5.94m wide. The bridge has no lane markings and due to its limited pavement width is in effect a single lane bridge. Traffic entering from Tocal Rd east bound to cross the bridge are required to

wait in sheltered turning bays until west bound traffic exits the bridge. Traffic holding in the south bound Tocal Rd sheltered turning bay then generates a blind spot for east bound traffic users attempting to exit the bridge off Paterson Rd on to Tocal Rd. These issues are only further magnified with heavy vehicle movements. MCQAG has witness statements of drivers who have had to reverse off the bridge to allow heavy vehicles to complete their crossing of the structure. It is MCQAG view that this bridge is totally inadequate for both the current scale of operation and the future proposed expansion parameters.

- Appendix 7 Road Condition & TIA Photos Photo 15, Paterson Rd pavement widths and shoulders are identified as not being in accordance with Austroad Guidelines. No assessment of this has been made within the current TIA.

- Appendix 7 Road Condition & TIA Photos Photo 17 the 3 way intersection of Paterson Rd, Duns Creek Rd and Butterwick Rd has been omitted from the TIA. It is apparent that pavement widths, lanes and the intersection configuration is completely inadequate for the current and proposed future haulage parameters. The intersection currently requires both north-bound and south-bound heavy vehicles to swing in to oncoming traffic in order to transit the intersection. No consideration has been made for the safety issues nor adequacy of this intersection for road users.

- Appendix 7 Road Condition & TIA Photos Photo 18, Butterwick Rd, pavement width is not in accordance with Austroad Guidelines. The TIA omits any reference to the safety issues the current configuration of this roadway poses. In MCQAG's view the current pavement configuration is completely inadequate for the current and proposed future haulage scale.

- Appendix 7 Road Condition & TIA Photos Photo 19, 20 and 21, Pavement conditions presented in these photos along various sections of the proposed haulage route are completely inadequate. No clear proposal is made within the EIS for remediation or upgrading of these and other deficient areas of pavement along the haulage routes.

- School bus stops. The TIA and the EIS body have failed to document the current school bus pickup/drop off locations along the proposed haulage route. Furthermore the TIA fails to assess the likely safety impacts to other road users and pedestrians in the context of school bus pick ups and drop offs. MCQAG notes that multiple school bus pick up areas are un marked and informal and require buses to double park at driveways and on road side verges for school children to enter and egress buses. MCQAG's view is that the current haulage scale and proposed future expansion is an un acceptable safety risk to school bus operational safety.

38. No proper consideration has been given within the TIA or EIS body to the need to improve both cyclist and pedestrian access and safety along the proposed haul route based on the proposed magnitude of operations.

39. The EIS body, TIA and Heavy Vehicle Market Route Assessment all fail to give proper consideration and assessment of alternate haulage routes. Engineering Transport Assessment presents a tabulation of site access options but also provides no further details on haulage route alternate options. There is no consideration made for traffic route bypasses of Paterson, Butterwick, Brandy Hill or Bolwarra, no consideration for assessment and use of Clarence Town/Seaham Roads route via Dungog Rd which we understand will add only ~20min of transport time per load to reach the Hexham/ Pacific Highway interchange but presents itself as a viable means of distributing off site haulage impacts. ***We request the Minister require the proponent to perform additional assessment justification as to the feasibility of alternate haulage route options***

40. The Engineering Transport Assessment makes reference to a "Traffic and Access Assessment", March 2016 prepared by SECA Solution reference 8. No such document can be found in the EIS nor can the cross referencing of this document on discussion on impacts of queuing traffic at the Gresford Road Paterson rail crossing and proposed road widening of Butterwick Road. ***We request the Minister require the proponent to issue the document Traffic and Access Assessment", March 2016 in a revised issue of the EIS.***

Transport Alternatives

41. The proposal has failed to adequately assess the option of transport of product from MCQ via rail. The proponent has also failed to assess the option to transport product to a secondary processing and staging location via road using dedicated (controlled) haulage transport. MCQAG understands the process of secondary staging of product either by rail or road is not un common and already occurring within the Hunter and Sydney construction material markets. By implication, these alternate modes of transport are therefore reasonable and feasible means of ameliorating offsite impacts associated with extractive industry material transport.

42. MCQAG understands there are multiple rail off loading facilities (also known as Regional Distribution Centres) utilized for the rail transport and nodal distribution of construction aggregates within NSW.

43. According to the Holcim Rooty Hill Regional Distribution Centre Environmental Assessment Report October 2005;

> *The use of rail and the corresponding reduction in truck kilometres travelled has significant socio-economic and environmental benefits.*
>
> *Rail transportation provides safety and cost benefits to the community. Austroads and Bureau of Transport Economics data indicates the following comparative accidents rates (ACIL 2001) (ACIL Consulting 2001. Rail in Sustainable Transport – A Report to the Rail Group of the Standing Committee on Transport):*

- *Road freight: 3.8 fatalities per 10^9 tonne kilometres; and*
- *Rail freight: 0.55 fatalities per 10^9 tonne kilometres*

In addition the lower frequency of rail accidents is reflected in cost savings to individuals, industry and the community.

44. MCQAG notes that MCQ facilities include an existing rail loading facility. Asides from the Rail Logistics Report analysis which confirms rail transport of product into local and regional markets is possible, the EIS provides no consideration or detail in to rail options analyses. The EIS body and the SEO make no assessment of the likely environmental costs and benefits to the local communities between rail and road transport, nor is there any assessment into the cost and benefits of greenhouse gas air emissions and life of project road pavement up keep when comparing road versus rail transport options.

Social Impacts Assessment & Consultation

45. The proponents Social Impact Assessment (SIA) fails to address social impact assessment objectives. The IAIA SIA Guidelines are quoted however key SIA factors outlined in the guidance documentation are not addressed in any comprehensive way. From a social perspective, the development and application of good SIA practice is essential to facilitate meaningful and respectful community and stakeholder engagement, to support better decision making by proponents and government and develop more appropriate project outcomes. This SIA is severely lacking in this regard.

46. The document is not considered a SIA but a community profile providing pages and pages of 2011 census data (now significantly outdated) and a review of local plans, many of which are also out of date. The profile data provided is also merely descriptive and provides no analysis of how the characteristics of the communities affected by the Project may be influenced by the project against specific social baseline indicators.

47. The SIA does not include an adequate stakeholder analysis and identification and description of the different stakeholders and stakeholder groups in the assessment area that may be affected by the Project. How, given their characteristics or personal situations, do their perceptions of Project impacts vary and how does this influence their sensitivity/susceptibility to respond to change.

48. Social impacts can be many and varied and include the following impact categories. The assessment deals superficially with only a few of the categories below largely population change (associated with the project workforce) and the impact on service and infrastructure provision. Community perceptions of environmental impact are also not addressed with the reader referred to the environmental assessment – resident perceptions of environmental impacts on social amenity and quality of life should be assessed. Furthermore, there is no consideration of how the Project impacts on local or regional cultural assets such as sense of place, customs and values). Essentially key categories of social impact are totally ignored in the current assessment.

Category	Description
People's way of life	That is, how they live, work, play and interact with one another on a day to day basis
Their culture	That is, their shared beliefs, customs, values and language or dialect
The community	its cohesion, stability, character, services and facilities
Their political system	the extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose
Their environment	the quality of the air and water people use, the availability and quality of the food they eat, the level of hazard or risk, dust and noise they are exposed to, the adequacy of sanitation, their physical safety, and their access to and control over resources
Their health & wellbeing	health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of disease or infirmity
Their personal & property rights	particularly whether people are economically affected or experience personal disadvantage which may include a violation of their civil liberties
Their fears & aspirations	their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children

49. A comprehensive SIA should outline the key issues of concern associated with the proposed development across different stakeholder groups – the assessment shows no demonstration of engaging with specific stakeholder groups and community residents to identify their issues of concern and relevance in the assessment and how such issues may vary across different stakeholder groups. For example:

    - How many landholders in proximity to the quarry are concerned about noise or air quality?
    - Who in the community is concerned about local heritage and the impact of truck movements on heritage buildings? Has the local historical society been engaged?
    - How will local tourism businesses in Paterson perceive they will be impacted given truck movements through the town on the weekend?
    - How will customer access to local businesses in the main streets of the neighbouring rural villages be affected as a result of truck movements?
    - Where do local school students access schools and bus services – how will truck movements affect student and resident mobility patterns?
    - How is the sense of community of these small rural villages impacted by the presence of the project (at the proposed larger scale). While local residents have lived with the presence of the quarry for many years, the increased scale and size has the potential to impact community sustainability.

50. Outputs in the consultation section should be more fully integrated in the SIA for the project, particularly with relevance to key stakeholder and community issues. It appears that the community themselves have undertaken a community survey in the absence of appropriate consultation and engagement methods undertaken by the proponent as part of the SIA and broader project. Social impact assessment deficient

51. MCQAG has attached results of surveys performed in Appendix 10 Community Survey and Appendix 11 Business Survey. For the Department and Ministers

information. ***We request the Minister require the proponent to revise its SIA in line with the comments listed above and to incorporate results and outcomes from meaningful consultation in to a more appropriate Proposal outcome***.

Amenity Impacts

52. In spite of its being specified within and required by the SEARs, no consideration has been given to impacts on social amenity. Appendix A SEARs Compliance Table August 2016 makes reference to social amenity impacts as being addressed within the Social and Economic Assessment (SEO). No reference to even the word "amenity" can be found in the SEO document.

53. The term social amenity is variously defined as something that contributes individually to physical and material comfort, a feeling of personal wellbeing, attractiveness, peace of mind, pleasurable social experience and collectively as a sense of community or belonging.

54. In a planning context social amenity is a fundamental but sometimes elusive concept. In case law in Victoria the effect on the amenity of the area in deciding a permit application must consider the objectives of planning, one of which is securing a pleasant working and living environment. Victoria draws on Interstate authority (NSW) about amenity and adopts a similar approach under planning law.

55. In the UK amenities and social infrastructure are drawn together in helping new communities to grow, however the point is made that the mere provision of infrastructure and services does not of itself develop social amenity. It also relies on the cohesive nature of the community to develop relationships and support networks that build on the infrastructure and services provided. Typically, groups such as those associated with religious organisation, sporting and social clubs etc. achieve the cohesion that generates togetherness. These groups take many years and even decades to develop and therefore rely on a local environment that is conducive to local association uninterrupted by disruptive external impacts. In this regard it is evident that Paterson represents such a community, having developed social fabric and structure since the early years of settlement.

56. Social amenity is a component of the overall social and physical environment and is therefore fragile to the extent that it may be easily damaged, or even destroyed, by impacts that are imposed on it without control and appropriate management strategies. Co-existence of community, local businesses and industry relies on a sustainable balance being achieved that allows all to thrive in a socio-economic sense without undue detriment to either component.

57. The proposed development, as described in the EIS fails to take account of the social, environmental and cultural structure of Martins Creek, Vacy, Paterson, Bolwarra Heights, Butterwick and Brandy Hill areas. While recognising that Paterson and the Martins Creek quarry have satisfactorily co-existed for nearly 100 years and the quarry being principally a source of hard rock railway ballast,

the intensity of the current proposal, if approved, will compromise and destroy the social amenity described above.

58. In CEAL Limited v Minister for Planning & ors [2007] her Honour Justice Jagot refused an application for a quarry on the basis that the proposed haul route through Bungonia village would undermine important aspects of the amenity of the village and thus an important part of the planning scheme embodied in the LEP.

59. Her Honour Justice Jagot in CEAL said at [67];

I accept that a consent authority should have regard and give weight to published guidelines providing objective criteria to facilitate assessment of issues arising in land use planning decisions. Nevertheless, insofar as this submission might have suggested that considering the performance of the development against the available objective criteria exhausted the assessment under s 79C (1), I do not accept it. For example, the ECRTN [Now the NSW EPA Road Noise Policy] *does not cover all types of likely impact or all aspects of amenity. Insofar as it deals with one aspect of amenity (road traffic noise), the ECRTN applies generally throughout NSW. The Council's settlement strategy refers to the environmental criteria not being compromised, but that is quite different from the notion that compliance with the ECRTN exhausts the necessary or appropriate consideration under s 79C (1). Finally, the ECRTN does not have statutory force*

60. Whilst the proponent appears to have completed an assessment on road noise and the impact of this in accordance with the EPA Road Noise Policy (RNP), it is clear that the proponent has not assessed all types of likely impact or all aspects of amenity.

61. The Proponent has failed to consult with the wider community and local businesses and has not addressed the requirement in the SEAR'S to examine social amenity and propose a strategy for its protection. ***We request that the Minister require the proponent to assess all likely impacts and all aspects of amenity that the impacted community so value. We request the Minister to consider the impacts on amenity of the Proposal be included as relevant matters within the decision making process***

Tourism

62. As noted in the tourism profile included in Appendix 12 Tourism Profile, Paterson is characterised as a small rural village with strong historic heritage. Many of the local businesses in the village are located along the main street of the town. The village attracts a number of visitors to the town and the broader Shire area as noted in Section 1.0 of the appendix, largely as a result of the natural environment in which the village is located, the rural nature of the locality, its history and events and activities that occur within the region.

63. The proposed haulage route is also part of the Dungog Shire Tourism body's tourism horse shoe scenic drive route. This route is frequented by day trippers and motor cyclists and forms part of an integral tourism strategy for the region

64. The MCQ Proposal has the potential to significantly change the characteristics of the village as a weekend tourist destination, particularly if trucks are allowed to transport product from the quarry to the market through the town on Saturday. The Proposal also has the significant potential to impact upon the rural amenity and driving pleasure of the horse shoe scenic drive.

65. As part of the Proposal, the proponent proposes to undertake road works in the main street to widen a corner which would significantly impact traffic patterns and local businesses on the main street. Furthermore accommodation houses such as the CBC Café and the Post Office B&B would be significantly affected given their main street location and subsequent impacts of traffic volume and noise.

66. To date, the quarry and village community have co-existed given the previous size and scale of past quarry operations. However, the significant scale of the current proposal would result in more severe social impacts, resulting in impacts on local tourism and local businesses.

67. No local tourist or hospitality businesses have been consulted as part of the Social impact assessment for the Project. Furthermore no tourism impacts have been identified as of concern to local residents or assessed within the current EIS. ***We request that the Minister require the proponent to assess the impacts to tourism both local and regional and to hospitality businesses who operate along the proposed haulage route based on the proposed operational scale***

Geology

68. We have attached a peer review of the Geology and Blast Vibration Assessment (GVA). The review was performed by a technical expert. It identifies a number of factual inaccuracies in regards to the assessment of geology and blasting impacts on Paterson Valley Estate Vacy. The review also includes an independent calculation of the Proponents claimed reserves the results of which indicate that the resource size has been grossly over stated within the EIS. ***We request the Minister to request the Division of Resource and Energy or other NSW Government nominated expert to perform an independent estimate of the reserves to verify the Proponent's claims. Should the reserves be found to be erroneous we request that the Minister require the Proponent to provide an amended EIS that incorporates these revised resource figures and that these are taken in to account in regards to ecologically sustainable development principles.***

Water

69. MCQAG notes that groundwater flow contours were developed but are not presented within the Water Quality Impact Assessment (WQIA). It would be useful to present contours to visualise groundwater flow directions and the extent to which the quarry is a sink for the water in the fractured rock aquifer as the quarry is a sink then more monitoring bores would be useful to gain a better appreciation of the extent of seepage/drainage to the quarry. ***We request the Minister require the proponent to include groundwater***

flow contours in a revised WQIA prior to making a decision on the Proposal.

70. Under Sec 7.6.2 of the WQIA quoted groundwater flow velocities of 57m/year (unless it is in the immediate area surrounding the quarry) are unusually high for local recharged water that is brackish water quality. More monitoring bores at a greater distance would provide better evidence of the regional groundwater gradient and flow directions. ***We request the Minister to require the proponent in any new consent to be required to install monitoring bore holes at a greater distance to better provide evidence of gradients and flows.***

71. Under Sec 7.6.5 of the WQIA, the project is quickly assessed under some of the criteria in the Aquifer Interference Policy (AIP). As quarrying is a substantial AI activity, a more thorough assessment should be carried out to address water table, water pressure and water quality criteria as required for fractured rock aquifers and less production groundwater sources (see p23/24 of the AIP for further details) ***We request the Minister require the proponent to perform a more thorough assessment in accordance with the details described above and include in a revised WQIA prior to making a decision on the Proposal.***

72. Section 7.6.6 of the WQIA suggests that up to 8 exploration holes would be used for groundwater monitoring. These should be properly constructed monitoring bores and be operational ASAP so that current baseline conditions (WLs and WQ) can be better assessed – at least one site should be equipped with a data logger collecting continuous WL data and for this data to be made publicly available with other project related environmental data, ***We request the Minister require the proponent to include the above requirements within any new consent***

Ecology

73. The biodiversity assessment does not comply with Commonwealth survey requirements. The ecology report notes that the area supports habitat for the green and golden bell frog, however, the survey effort does not meet the obligations under the Commonwealth Department of Environment survey guidelines. It is MCQAG's understanding that for the green and golden bell frog a minimum 4 nights survey is required (they did three). Surveys are required to be performed only after receiving more than 50mm of rain in a consecutive 7 day period. In September 2015, according to Paterson BOM records there was not enough rain during that period to qualify. ***We request that the Minister require the proponent to repeat the green and golden bell frog survey and incorporate these findings within a revised ecology report***

Resource Importance

74. In response to the proponents suggestion throughout various sections of the EIS that the MCQ andesite resource is of significance to the Hunter region and the state. We have attached within Appendix 3 Hunter Region Quarried Material Supply Capacity a map showing hard rock resources within the state. We have also included in this appendix an analysis showing the current Hunter

construction material market supply and demand curve based on NSW Trade and Investment data. We submit that from the map and data it can be demonstrated that there is other hard rock resources in the region and that there is existing supply capacity within the Hunter construction aggregate market and that 800 Daracon staff and contractors prospects of employment are not solely dependent on the expansion of MCQ as seems to be inferred by the proponent. ***We request the Minister to obtain independent advice on the Hunter construction material market to determine the resource significance to the region and the state. Should the Minister's advice confirm its criticality we request the Minister to require through consent conditions appropriate capital investment and funding in order for the resource to be extracted in an ecologically sustainable and socially acceptable manner***

Economic Analysis

75. On the basis that all impacts (as discussed above) have yet to be accurately documented and assessed by the Proponent, the economic assessment contained within the SEO and EIS body by default cannot provide a conclusion that supports the proposition that the economic benefits outweigh the environmental impacts of the development. Until all the impacts have been accurately determined an assessment cannot be made. We note that the Proponent has failed to reference or address in any detail the principles of ecological sustainable development (ESD) throughout the EIS. There is no reference to the precautionary principles, no inclusion of environmental factors in valuations and no detailed discussion on intergenerational equity.

76. The concept of Precautionary Principle in Australia is specified and was adopted in the Intergovernmental Agreement of 1992, and internationally it was adopted at the United Nations Conference on Environment and Development held in Rio de Janerio in 1992. This concept was noted in the Land and Environment Court of New South Wales in the decisions handed down in the following cases:

    - BGP Properties v. Lake Macquarie City Council in 2004 – Judge McCellan presiding and,
    - Telstra Corporation Limited v. Hornsby Shire Council in 2006 – Judge Preston presiding.

77. In the former case, noise, traffic and pedestrian safety were of concern. In the latter case, the emission of electromagnetic energy was considered to be a harm/threat to health and safety of local residents. In both cases the concept of Precautionary Principle was judged to apply. His Honour Judge Preston emphasised the importance of preventative anticipation and stated that;

    > *the rationale for requiring this shift of burden of proof is to ensure preventative anticipation….is to prevent environmental damage rather than remediate it.*
    > *the function of precautionary principle is, therefore, to require the decision-maker to assume that there is, or will be, a serious irrreverable threat of environmental damage and to take (this) into account….*

78. In both cases the threat was environmental, however since the impact of haulage traffic (truck) noise and presence on the communities of Paterson, Bolwarra, Butterwick, Brandy Hill can be regarded as an impact on the physical and material comfort of the community and their amenity then it is argued that Precautionary Principle should equally be applied in assessing Social Amenity ***We request that the Minister require the proponent to provide more detail on how the Proposal incorporates the ESD principals and ask that the precautionary principals be applied to the assessment decision making process considering the impacts to amenity.***

Grounds for Refusal or Proposed Minimum Conditions

79. We submit that, due to its current un lawful scale and operation, MCQ is a controversial issue that has continued for in excess of seven years. The MCQ issue has been the subject of more than four public meetings, two Land and Environment Court proceedings, one abandoned Part 3A application by RailCorp and now a State Significant Development application by Daracon. The recent history and controversy only sheds light on the intolerable, existing impacts from the operations, the operations of which the proponent now seeks formal approval for in the Proposal.

80. We draw attention to EP&A Regulations 2000, Schedule 2 Part 2 (8) *The responsible person must ensure that an environmental impact statement complies with any environmental assessment requirements* and that in (6) (f) *a declaration by the person by whom the statement is prepared to the effect that: (iii) that the information contained in the statement is neither false nor misleading*

81. MCQAG submits that the Proposal should be refused on the grounds that;

    i. The EIS has failed to address the SEARs requirements.
    ii. The EIS has failed to document and assess all potential environmental impacts arising from the proposal.
    iii. The EIS contains misleading and falsified information as will be garnered by Agency and Council submissions on the matter.
    iv. The Proposal will result in unacceptable environmental impacts and outcomes to impacted communities,

82. Should the Minister, contrary to our submissions, be inclined to grant consent to the development application we respectfully request the following conditions to be incorporated into any new consent over the site;

Proposed Conditions	**Reason**
Operating hours onsite be limited to 7am to 5pm Monday to Friday and nil operations Saturday and Sunday	1. To preserve the amenity of residents who surround the facility and who reside along the haulage routes 2. To mitigate early morning sleep impacts currently experienced by residents who live along the haulage routes

Proposed Conditions	Reason
	3. To consolidate existing conditions imposed in the 1991 consent into the new approval 4. to preserve tourism values and visitation to the areas on weekends
That a maximum of 24 truckloads of product per day be transported by road from the facility	1. To preserve the amenity of residents who surround the facility and haulage routes 2. To preserve the built environmental values and social amenity of impacted activity centres and communities that the haulage routes pass through 3. To consolidate existing conditions imposed in the 1991 consent into the new approval 4. To be commensurate with modern consents such as Teralba Quarry which limits quarry haulage through Teralba activity centre to 85 movements per day
That any increased extraction above 300,000tpa be required to be transported by rail from the site	1. To preserve the amenity of residents who surround the facility and haulage route 2. To preserve the built environmental values and social amenity of impacted activity centres that the haulage routes pass through 3. To consolidate existing conditions imposed in the 1991 consent into the new approval 4. To ensure environmental, community and economic benefits of the project via the transport of bulk goods using rail is upheld in line with NSW State Transport Strategies
That blast monitoring be performed by an independent expert not engaged by or related to the blasting contractor	To provide greater transparency and certainty in regards to blast monitoring results
That blasting be specified to occur only at a specific time of day (i.e. hr:min)	To provide greater certainty on when blasts will occur and to reduce emotional impacts of "uncertainty" regarding when and how big a blast will be.
That existing depositional gauges be replaced with Taper Element Oscillating Microbalance (TEOM) monitors	1. To improve measurement and monitoring of air emissions from the facility

Proposed Conditions	Reason
with data being made publicly available in real time	2. To provide greater transparency and certainty in regards to air emissions monitoring results for the community
That fully enclosed processing facilities and improved dust suppression measures be mandated commensurate with modern processing facilities located within urban areas, and that mobile in pit crushing be prohibited from occurring in extraction pits	To improve air quality outcomes for the impacted surrounding communities with the aim of reducing exposure to silica and other fine particulates

Conclusion

83. We have set out above the concerns that our committee and membership have with the development application and the EIS. Based on our experiences of recent and current unlawful operations we have great concerns regarding the scale and magnitude of the proposed operations and the proposed method of transport of product by road from the site. The Proposal is quite simply an incompatible development in its current form. In particular;

a) the EIS currently incorporates unlawful operations in background environmental data,
b) the EIS fails to demonstrate effective consultation and show how the proponent has actually addressed onsite and offsite impacts including impacts along the haulage route,
c) the EIS fails to adequately and sufficiently address impacts on the amenity of residents along the haulage routes,
d) the geological resource estimates have been significantly overstated, and
e) the noise impact assessment contains numerous errors and inaccuracies that result in misleading assertions being made within the EIS.

The Minister may require the Proponent to address each of the matters listed within this document and attachments in a revised EIS. However, it is reasonably open for the Minister to refuse the application due to the failure of the proponent to address significant issues in the EIS. In the unfortunate event that the Minister chooses to ultimately consent to the application we request the Minister incorporate the conditions in the consent we have referred to and outlined in this submission.

Yours Faithfully

James Ashton - Secretary
On behalf of MCQAG Committee and Membership

CC Thomas Watt & Howard Reed

Appendix 1 Existing Consent Exerts

1991 Consent conditions exerts;

1. The development being conducted in such a manner so as not to interfere with the amenity of the neighbourhood in respect of noise, vibration, smell, dust, waste, water, wast products or otherwise;

Product Transportation

6. The applicant shall not permit the transport of more than 30% of the quarry products, by road without the further specific approval of Council.

Hours of Operation

15. (a) Normal hours of operation -

Monday to Saturday	7am to 5pm
Sundays and Public Holidays	No operations

1990 EIS exerts:

The proposal is to develop a "new" quarry on land adjacent to the existing "old" Martins Creek quarry. The existing infrastructure at the "old" quarry, that is crushing plant, other fixed plant, mobile plant, haul roads and staff will be retained. Haul roads will connect the "new" quarry with the "old" quarry. The "new" quarry will occupy about 5 ha and another 5 ha will be required for haul roads and setbacks.

Truck movements have been estimated on the basis that 30% of the annual production of 265,000 tonnes of all products is removed by road. Twenty three tonnes per load has been taken as an average load of the fleet vehicles. Operations at 5.5 days per week for 50 weeks per year gives 12 loads per day, thus 24 truck movements per day. The destination of these trucks will depend on regional demand. The majority of truck deliveries are to the south.

Appendix 2 Hunter Expressway Traffic Flows

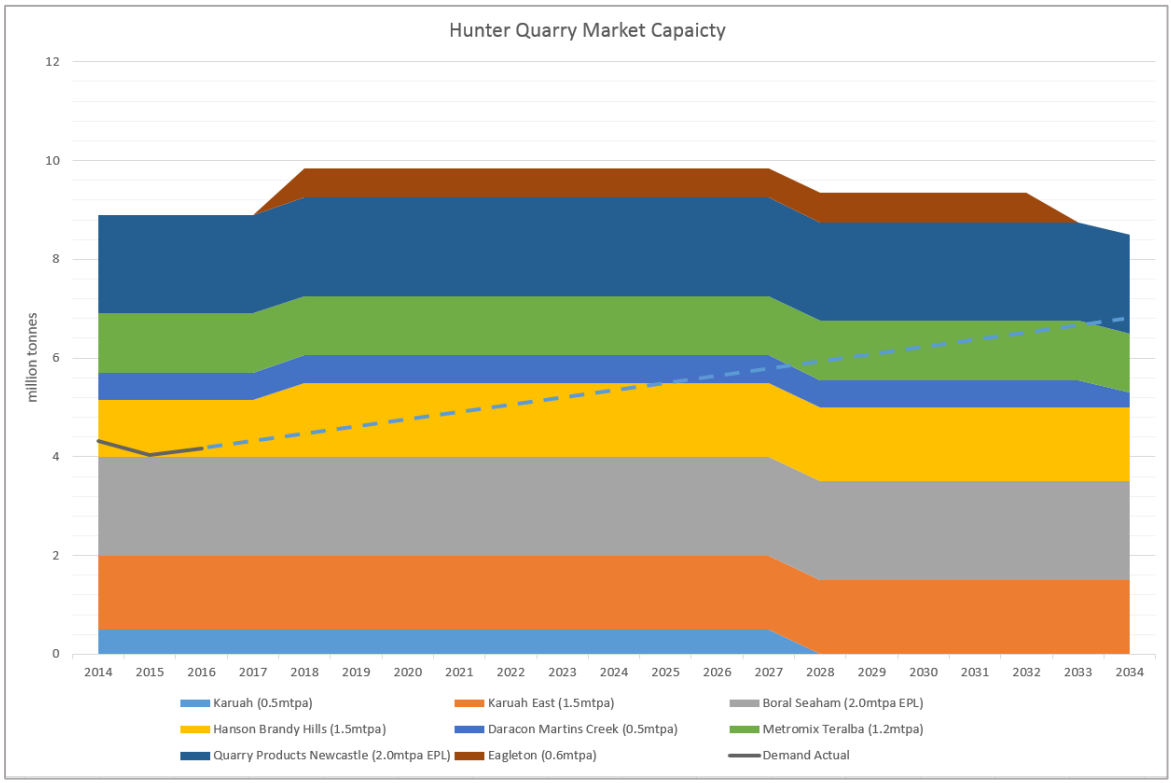
M15 Hunter Expressway (HEX1) Data

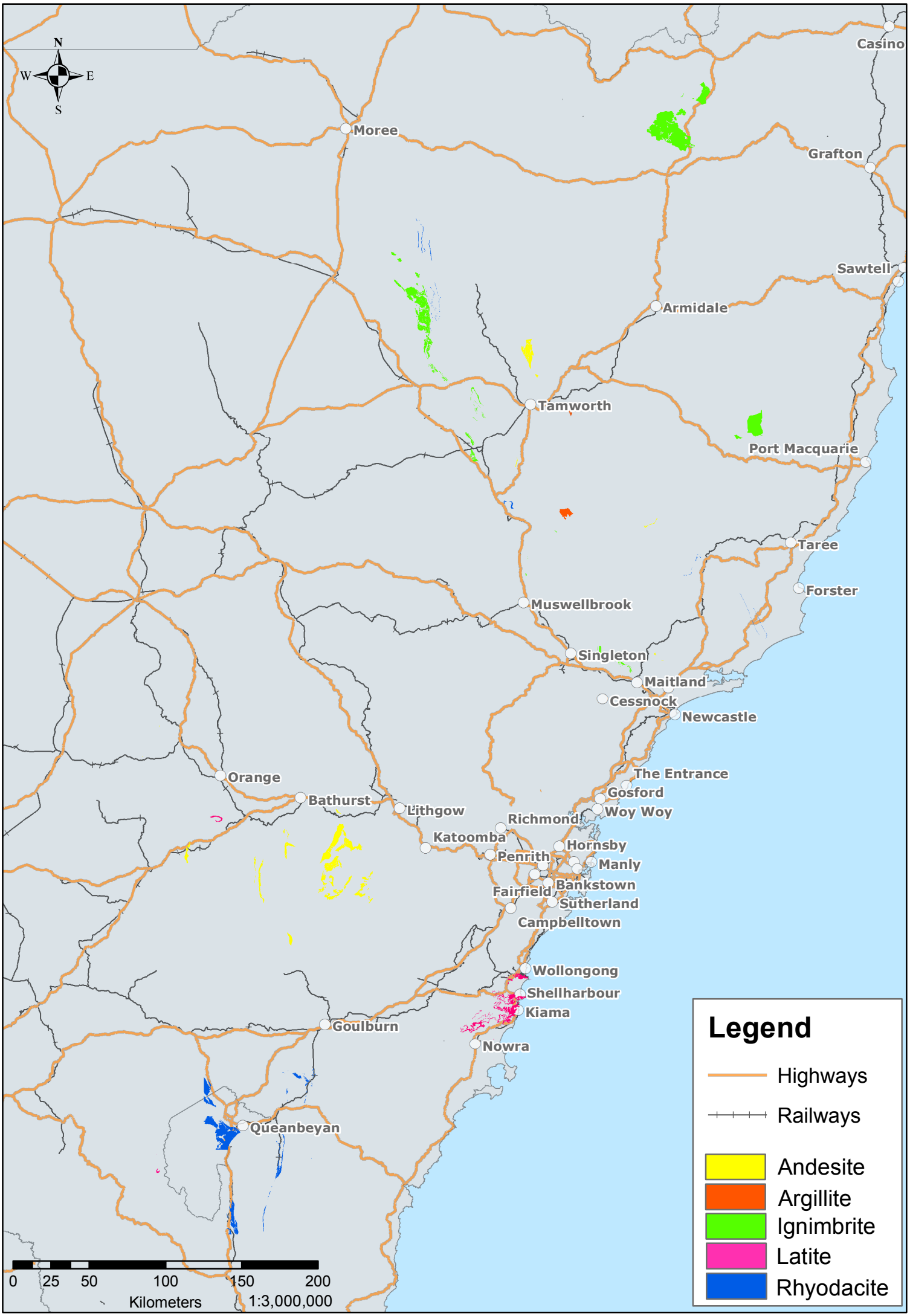
24/03/2015 - 30/10/2016 | All Days | 00:00 - 24:00 | All Vehicles | Westbound | Res

Yearly Views | Monthly Views | Weekly Table | Raw Data Table

				)0	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00
2016	October	Westbound	All Vehicles		62	222	643	608	576	581	557	544	564	554	550	577	623
2016	October	Westbound	Heavy Vehicles		24	46	87	105	93	87	80	80	77	73	70	65	64

Appendix 3 Hunter Region Quarried Material Supply Capacity




N
W
E
S
Casino
Moree
Grafton
Sawtell
Armidale
Tamworth
Port Macquarie
Taree
Forster
Muswellbrook
Singleton
Maitland
Cessnock
Newcastle
The Entrance
Gosford
Woy Woy
Orange
Bathurst
Lithgow
Richmond
Katoomba
Hornsby
Penrith
Manly
Bankstown
Fairfield
Sutherland
Campbelltown
Wollongong
Shellharbour
Kiama
Goulburn
Nowra
Queanbeyan
0 25 50 100 150 200
Kilometers
1:3,000,000
Legend
Highways
Railways
Andesite
Argillite
Ignimbrite
Latite
Rhyodacite

Appendix 4 Public Records of Complaints

Incident Date/Time	Notification No.	Call Taken	Call Type	GIPA677 Buttai Gravel Pty Ltd Sept 2012-Feb2016	Incident Location	Caller Name	Involved Party	Suburb	LGA
11/11/2015 02:10:00 PM	I15045-2015	11/11/2015 02:23:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY	Fairly big blast from BUTTAI GRAVEL PTY LTD EPL#1378 MARTINS CREEK QUARRY, STATION STREET that shook the windows and items on shelves. Caller stated much bigger compared to the last couple of blasts that went off last week	BUTTAI GRAVEL PTY LTD EPL#1378 MARTINS CREEK QUARRY STATION STREET		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
11/11/2015 01:55:00 PM	I15046-2015	11/11/2015 01:58:00 PM	300 NOISE/VIBRATION - 301 MINE - Particulates/dust	Powerful blast & huge dense cloud of dust caused by Martins Creek Quarry, Station St, Martins Creek. The blast happened today 11/11/15 at say 13:55, caller said it went all up for 10-15 seconds. It started with a excessive rumble and vibration from the ground up and went up their S. 74 house with car ports underneath, went VOOM and then a powerful and loud explosion blast, the whole house shudders, pictures and lights moved. Caller was in the kitchen and her husband was in the lounge room, caller said this blast is the worst one and said the recent blasts are getting progressively worst and moving closer and are getting bigger and bigger and more powerful, S. 74 Caller said there was a huge dense light brown clay colour cloud of dust at the site resulting from the blast-caller said you could not see the walls of the quarry through the trees around the site, there are some strong winds which would have dispersed the dust as caller could see the walls of the quarry through the trees. Caller said even their kitty cat would respond to the blasts and be startled.	Powerful blast & huge dense cloud of dust caused by Martins Creek Quarry, Station St, Martins Creek.	Section 74	BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
06/11/2015 02:15:00 PM	I14880-2015	06/11/2015 02:29:00 PM	300 NOISE/VIBRATION - 301 MINE	Huge blast occurred from MARTINS CREEK QUARRY Station Street Martins Creek. Caller said the whole house shook violently. Caller is very distressed.	MARTINS CREEK QUARRY Station Street Martins Creek		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
14/10/2015 12:30:00 PM	I13878-2015	14/10/2015 12:51:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY - Noise/vibration	The caller, S. 74 was affected by noise/vibration from a blast at the quarry today at about 12:30, which caused the house to shake. The caller notes that there are cracks in the home believed to be due to blasting.	Buttai Gravel MARTINS CREEK QUARRY, noise impact to resident of Vacy		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
14/10/2015 12:33:00 PM	I13873-2015	14/10/2015 12:37:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY - Noise/vibration	The caller was affected by significant v bration associated with a blast at the quarry today. The caller indicates that the blast itself was relatively mild, but the after effects - the falling rock, caused the house to shake.	Buttai Gravel MARTINS CREEK QUARRY, noise impact to local resident		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
17/09/2015 12:30:00 PM	I12717-2015	17/09/2015 12:42:00 PM	300 NOISE/VIBRATION - 301 MINE - Noise/vibration	Noise from blast at Buttai Gravel (Martins Creek Quarry) EPL 1378, Station Street Martins Creek. The noise was much louder than blasts have been recently, and a very long noise. The caller didn't feel any vibration.	Buttai Gravel EPL 1378, Station Street Martins Creek.	Section 74	BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG

17/09/2015 12:29:00 PM	I12718-2015	17/09/2015 12:41:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY	Caller affected by noise and vibration from a blast at the quarry today. Caller received notification of blast late yesterday afternoon. The caller indicated that the noise and vibration seemed to be greater than normal compared to other blasts. The home shook, windows rattled and the vibration was clearly discernible to the people within the home. Weather is overcast t present.	Buttai Gravel MARTINS CREEK QUARRY		BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
	I11340-2015	18/08/2015 06:09:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY	Report emailed to info@environment on 18/8/15 at 6:09pm: Complainant has lived in Martins Creek for the past . S. 74 Complainant I believes that blasting regularly carried out by the operators of the quarry (Daracon) is causing damage to their house. Cracks in walls and damage to window fittings are the main cause of concern. S. 74 S. 74 S. 74 S. 74 S. 74 S. 74 Complainant would appreciate advice as to what we can do. Is compensation available so I can repair the damage? Can the blasting be reduced? Can you send someone to monitor the blasting and its effects? (email attached)	MARTINS CREEK QUARRY, STATION STREET, MARTINS CREEK		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
26/06/2015 12:00:00 AM	I08909-2015	01/07/2015 11:08:00 AM	300 NOISE/VIBRATION - 305 WASTE FACILITY - N/A	Buttai Gravel Pty Ltd (Daracon), Station Street, Martins Creek. Caller is reporting of extremely loud blast from the mine last Friday (26/06/15) afternoon and that the noise was progressive. Caller said company did send the flyer regarding the blast, but this noise was louder than previously experienced. Caller wants EPA to investigate this noise incident and whether the company met its licence condition.	Buttai Gravel Pty Ltd (Daracon), Station Street, Martins Creek 2420	Section 74	BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
29/06/2015 01:10:00 PM	I08812-2015	29/06/2015 04:59:00 PM	300 NOISE/VIBRATION - 301 MINE - Noise/vibration	Windows rattled today; like a quarry blast. Very slight noise aud ble in the background; but caller was not advised of any blast. If this was due to a blast they should have been notified. It was unusual, and may have been caused by something else. Can EPA advise, please.	Vibration in caller's house: from an unannounced blast. Martins Creek Quarry (but not sure).			VACY	DUNGOG
26/06/2015 01:40:00 AM	I08687-2015	26/06/2015 02:07:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY - N/A	Martins Creek Quarry, Station Street, Martins Creek. EPL: 1378. Caller is reporting of a large explosion at the mine at around 1.40 pm this afternoon which shook caller's house. S. 74 S. 74	Martins Creek Quarry, Station Street, Martins Creek 2420. EPL: 1378		BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
26/06/2015 01:40:00 PM	I08684-2015	26/06/2015 01:51:00 PM	300 NOISE/VIBRATION - 301 MINE	Huge loud blast caused by Martins Creek Quarry, Station Street, Martins Creek. There was a very loud blast from the quarry that shook the whole house, windows, shed, the animals went berserk and callers wife ran out of the house thinking it was the Newcastle earthquake. Caller said they have not experienced a huge blast like it for a very long time that it felt like the side of the mountain was falling down. Caller said the blast happened approximately 13:40 today 26/6/15. Please contact caller.	Huge loud blast caused by Martins Creek Quarry, Station Street, Martins Creek.		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG

	I05289-2015	15/04/2015 02:31:00 PM	100 AIR PARTICULATES - 102 WASTE FACILITY - N/A	Martins Creek Quarry, Station Street, Martins Creek. EPL: 1378. Caller is reporting of dusts being emitted from trucks leaving the quarry from 6 am till 6 pm, Monday to Friday and sometimes on Saturdays. Caller said nothing has been done to control the dust.	Martins Creek Quarry, Station Street, Martins Creek 2420. EPL: 1378		BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
05/03/2015 05:45:00 AM	I03146-2015	05/03/2015 11:41:00 AM	300 NOISE/VIBRATION - 305 WASTE FACILITY - Noise/vibration	Caller referred to EPA by Council. The caller raises a concern that the Martins Creek quarry is sometimes commencing operation prior to 6am. The caller has noticed it on a number of days in recent weeks but didn't note exactly which days. It was audible this morning before 6am. The noise that is audible to the caller is described as truck movements and the sound of gravel loading (like a "shooosh"). The caller also mentions that their house shakes when the quarry undertakes blasting.	Martins Creek Quarry, noise impact to nearby resident		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
03/02/2015 02:10:00 PM	I01460-2015	03/02/2015 02:31:00 PM	300 NOISE/VIBRATION - 301 MINE - Noise/vibration	Overpressure from blast at 2.10pm from Martins Creek Quarry; volume 'same as usual' but the shaking of windows in the caller's home after the blast seemed to last significantly longer than usual. Only seconds, but still noticeably longer than usual.	Martins Creek Quarry; Station St - EPL 1378, VACY. Overpressure affected caller's home at Wakaya Cl, Vacy.		BUTTAI GRAVEL PTY LTD	VACY	DUNGOG
31/10/2014 01:37:00 PM	I15909-2014	31/10/2014 01:57:00 PM	300 NOISE/VIBRATION - 301 MINE - Noise/vibration	Loud blast from: Martins Creek Quarry, Station Street, Martins Creek. Blast happened today 31/10/14 at 13:37, caller was inside the house, he said the house & shelves vibrated.	Loud blast from: Martins Creek Quarry, Station Street, Martins Creek, NSW 2420.	Section 74	BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
31/10/2014 01:45:00 PM	I15908-2014	31/10/2014 01:54:00 PM	300 NOISE/VIBRATION - 301 MINE - Noise/vibration	Loud blasting from Martins Creek Quarry. S. 74 it shook the house badly.	and Martins Creek Quarry. Martins Creek.		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
07/10/2014 06:30:00 AM	I14699-2014	09/10/2014 10:25:00 AM	300 NOISE/VIBRATION - 303 INDUSTRIAL - N/A	Report received by email to info@environment on 7/10/14 at 07:20. Complainant wishes to lodge a complaint about noise from large machinery working at Martins Creek Quarry. The noise woke the complainant at 06:30 on 7/10/14. S. 74 S. 74 and the sound of the heavy machinery is audible if the complainant's windows are open. During the warmer months the complainant prefer to sleep with windows and doors open. Complainant is aware of many issues relating to this Quarry, but was under the impression that they were operating under certain guidelines that restricted the times within which they could operate their machinery. Complainant thinks that 06:30 is not a reasonable time to commence operations given the number of residents that live within hearing range of the Quarry. This is a semi-rural / residential / bush land area and the noise is offensive and intrusive at the best of times, whereas being woken by it at 06:30 is unacceptable. Email is attached in this report.	Martins Creek Quarry (Buttai Gravel), Station St, Martins Creek		BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
08/10/2014 01:50:00 PM	I14662-2014	08/10/2014 02:16:00 PM	300 NOISE/VIBRATION - 303 INDUSTRIAL	Loud blast caused by: Martins Creek Quarry, Station St, Martins Creek. Caller said the blast happened today 8/10/14 approximately 13:50, and said it was very loud, he was running a generator near the garage and heard the loud blast over the top of the generator noise, caller had to stop and step out and look at the direction of the quarry to see what's happened. Caller said the blast is the loudest he has ever heard from the quarry, it seems l ke it was a surface blast for it to be that loud, not underground.	Loud blast caused by: Martins Creek Quarry, Station St, Martins Creek, NSW 2420.		BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG

08/10/2014 01:45:00 PM	I14657-2014	08/10/2014 01:51:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY	The caller was affected by a blast today at the quarry, at approximately 13:45. The blast was loud and shook the caller's house. The sound and v bration continued for a little longer than they usually do.	Martins Creek Quarry, noise and vibration impac to resident of Vacy		BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
05/09/2014 01:20:00 PM	I13143-2014	05/09/2014 02:40:00 PM	300 NOISE/VIBRATION - 301 MINE - Noise/vibration	Noise and some vibration from a blast at the quarry which went off around1:20pm today. The noise was louder and lasted longer than usual. There was some vibration as well.	Martins Creek Quarry EP 1378, Station Street Martins Creek		BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
05/09/2014 01:23:00 PM	I13139-2014	05/09/2014 01:48:00 PM	300 NOISE/VIBRATION - 301 MINE - Noise/vibration	Noise and vibration from Martins Creek Quarry. Caller notes that a blast was let off today at 1:23pm. The vibration shook her house and opened up a crack wider in an internal wall. Glasses in the cupboard shook and pictures moved on the wall.	Martins Creek Quarry EP 1378, Station Street Martins Creek	Section 74	BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
05/09/2014 01:22:00 PM	I13135-2014	05/09/2014 01:37:00 PM	300 NOISE/VIBRATION - 301 MINE	Loud blast at: Martins Creek Quarry, Station St, Martins Creek. Caller said the quarry called them and said the blast will happen at 1.30pm today, however it happened earlier and it was a loud blast at 1.22pm today. Caller said it was a fairly substantial bigger blast and lasted for a few seconds more longer, the blast shook the house windows. Caller said its raining and damp outside.	Loud blast at: Martins Creek Quarry, Station St, Martins Creek, NSW 2420		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
05/09/2014 01:25:00 AM	I13132-2014	05/09/2014 01:35:00 PM	300 NOISE/VIBRATION - 301 MINE - N/A	Buttai Gravel , Martins Creek NSW. EPL- 1378. Caller is reporting of noise and vibration from extremely large blast from the mine at 1.25 pm today. It shook caller's entire house. Caller said there are cracks on the ceiling.	Buttai Gravel , Martins Creek NSW 2420. EPL-1378		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG

I11986-2014	12/08/2014 06:13:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY	Report emailed to Daracon and copied to info@environment on 12/8/13 at 6:13pm: Complainants are experiencing excessive blasting from the Martins Creek Quarry S. 74 S. 74 S. 74 and have never had problems with the quarry until the last 12-18 months. In that time their house is showing signs of damage from explosions that shake their house, with vibrations coming up through the floor and rattling windows. Consequently, they now have significant cracks throughout their house in the gyprock, cornices, pavers around the edge of their S. 74 and cracking of mortar in outer brickwork to the extent that some of the mortar has even fallen out. They are also dealing with an increase in noise pollution and dust, especially with a southerly wind blowing. S. 74 S. 74 S. 74 This is going to have a huge impact on the value of their homes and quality of life. They are also very concerned regarding the wildlife in this area and don't believe they are being taken into account. In the 17 years thye have been here, they have seen quite a few echidnas, possums, kangaroos, wedge-tail eagles and many other native birds and reptiles. Most worrying is that there are koalas in this area. They had a young koala access their property as recent as late last year. They have legitimate concerns for their future here given Daracons' intentions to expand threefold and operate 24/7. They would like to know what measures will be taken to ensure that their house is not going to be damaged further and that they can continue to enjoy living here in what had always been a peaceful environment.(email attached)	Daracon (Martins Creek Quarry), Station St, Martins Creek	Daracon	MARTINS CREEK	DUNGOG	Section 74
I11915-2014	07/08/2014 09:22:00 AM	300 NOISE/VIBRATION - 305 WASTE FACILITY	Report emailed to info@environment on 7/8/14 at 9:22am: Complainant emailed concerns to Daracon and copied info@environment on 7/8/14 at 9:22am: Complainant advising they have several cracks in their plaster, only appearing in the last 18 months. S. 74 S. 74 Daracon stated at the public meeting that they had received very few complaints so here is another. When complainant first moved to Vacy they could not hear or see the quarry from where they live but now with extra blasts they have noticed cracks in ther plaster which are becoming more prominent. When a blast happens they can feel the vibration through their body, china rattles and the house vibrates which no doubt will cause the cracks as a result. Filling cracks and repainting will only be a temporary solution until the next blast and the cracks will open up again. Increased noise from crushing, blasting and loading along with dust has become so uncomfortable that they need to keep their windows and doors closed but can only muffle out to a certain degree. This was never the case before. Complainant asks for the name, type, specifications, age and location of Daracon's dust, noise and blasting monitors. Also asks for notification on when Daracon will be blasting and readouts from their monitors to demonstrate that Daracon is meeting regulatory conditions. (email attached)	Daracon- Martins Creek Quarry- Station St, Martin Creek	Daracon	MARTINS CREEK	DUNGOG	

06/08/2014 01:49:00 AM	I11687-2014	06/08/2014 02:01:00 PM	300 NOISE/VIBRATION - 301 MINE - N/A	BUTTAI GRAVEL PTY LTD, Martins Creek NSW 2040. EPL # 1378. Caller is reporting of noise and vibration from the blast at the quarry. Caller was outside near clothes line and could feel the vibration through her body. The blast happened at approximately 1.49 pm today. Caller said the blast is happening almost every week. Caller can see cracks inside the house.	BUTTAI GRAVEL PTY LTD, Martins Creek NSW 2040. EPL # 1378		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
06/08/2014 12:00:00 AM	I11681-2014	06/08/2014 01:59:00 PM	300 NOISE/VIBRATION - 301 MINE - Noise/vibration	Large blast at 1.45pm today; significantly louder than usual. Caused animals distress on caller's property.	Martins Creek Quarry: EPL 1378		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
25/07/2014 12:29:00 PM	I11113-2014	25/07/2014 12:52:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY - Noise/vibration	The caller was affected by a blast at the quarry at about 12:29, it caused the caller's house to shake. Windows rattled and vibrations were felt through the caller's body, the blast was also audible. S. 74 S. 74 S. 74	Martins Creek Quarry, vibration impact to resident in Vacy		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
	I09041-2014	02/06/2014 07:59:00 PM	100 AIR PARTICULATES - 102 WASTE FACILITY - Noise/vibration	Report emailed to info@environment on 2/6/14 at 19:59pm: Complainant lives near Martins Creek quarry, and is concerned about the dust and noise they are making. They say the dust is being monitored. But complainants gutter is always full of dirt these days as they clean them often; Complainant uses tank water for the house. Complainant asks if EPA monitor the dust and noise from the quarry. They don't like to think that they are breathing in that dust all day, and some days it's so noisy you can't go outside. Complainant would like to know how they can get a report on dust and noise from the quarry and asks if the quarry is doing anything about it. (email attached)	BUTTAI GRAVEL PTY LTD, MARTINS CREEK QUARRY, Station St , MARTINS CREEK- EPL 1378	Section 74	BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
02/06/2014 01:40:00 PM	I08810-2014	02/06/2014 02:43:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY - N/A	Excessive vibrations from a blast at BUTTAI GRAVEL PTY LTD EPL#1378 MARTINS CREEK QUARRY STATION STREET MARTINS CREEK causing glasswear in cupboards to rattle and clash together. Caller very concerned about the possibility of more cracks in the family home as caller already has one crack.	BUTTAI GRAVEL PTY LTD EPL#1378 MARTINS CREEK QUARRY STATION STREET MARTINS CREEK		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
02/06/2014 01:41:00 PM	I08809-2014	02/06/2014 02:36:00 PM	300 NOISE/VIBRATION - 303 INDUSTRIAL	Very Loud blast from the quarry. Caller was inside their house when the blast happened, said the blast/noise vibrated through their body and caller could hear the noise through the window. S. 74 S. 74 S. 74	7 Wakaya Close, VACY, NSW, 2421		BUTTAI GRAVEL PTY LTD	VACY	DUNGOG
02/06/2014 01:40:00 PM	I08806-2014	02/06/2014 02:27:00 PM	300 NOISE/VIBRATION - 305 WASTE FACILITY - N/A	Excessive vibrations due to a blast at BUTTAI GRAVEL PTY LTD MARTINS CREEK QUARRY Station St Martins Creek - EPL 1378	BUTTAI GRAVEL PTY LTD MARTINS CREEK QUARRY Station St Martins Creek - EPL 1378		BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG

02/06/2014 02:00:00 PM	I08804-2014	02/06/2014 02:23:00 PM	300 NOISE/VIBRATION - 301 MINE	Excessive blast from MARTINS CREEK QUARRY Station St Martins Creek. The blast caused massive vibration which shook the whole house and all china dishes rattled in the cupboard. Aall neighbours came out to see what the noise was. Caller says the blasting was like an earthquake.	MARTINS CREEK QUARRY Station St Martins Creek	BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
29/04/2014 06:00:00 PM	I08555-2014	28/05/2014 04:35:00 PM	300 NOISE/VIBRATION - 303 INDUSTRIAL - Particulates/dust	Report received by email to info@environment on 26/5/14. In summary the complainant attached a 'drop box' link of video footage of the Buttai Gravel/Martins Creek Quarry operator breaching licence conditions across multiple dates. Item 1 - IMG0421.MOV - filmed 29th April 2014 shot at 18:00 onwards showing crusher and conveyors continuing to run after 18:00 and loader movements onsite outside the approved hours of operations per L6.2. Item 2 - IMG0433.MOV - filmed 30th April 2014 shot at 18:00 showing crushers continuing to operate after 18:00 and vehicle and loader movements on site outside approved hours. Item 3 - IMG0450.MOV - filmed 14th May 2014 shot at 18:00 onwards showing crusher continuing to operate and vehicle movement onsite after hours. Item 4 - IMG0466.JPEG - Photo shot on 17th May 2014 showing significant dust plumes coming from crushing operations on the western lots of the quarry (lot 5 & 6). Item 5 - IMG0471.MOV - filmed 21st May 2014 shot at 19:08 onwards, records from 03:12mins onwards maintenance occurring on the crushers with audible rattle guns. The repeated audible cracking sound throughout the video is some type of pressure relief valve occurring from the cement hoppers. From the footage it appears for items 1,2,3 & 5 they are breaching condition L6.2 of their licence (at least definitely where the crusher is still running and where they are using rattle guns for maintenance). From the photo in item 4 the operator appears to be in breach of condition O3.1 - there doesn't appear to be any dust suppression systems on their conveyor, crushers or stock piles. Complainant thinks air pollution limits are monitored via the high volume air sampler recording averages. Is this correct or does EPA have ability to query / enforce O3.1 also? Complainant has footage on a USB stick if required but requests that this footage is not divulged to any third parties. Original email with drop box link is attached in this report.	BUTTAI GRAVEL (Martin Creek Quarry), STATION STREET, MARTINS CREEK - EPL 1378	BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
	I08492-2014	28/05/2014 08:55:00 AM	400 WATER - 407 MINE	Caller believes Martins Creek Quarry has previously blocked off local creek as the creek was very dry last year (caller cannot remember exact date or month). The creek always has water in it. The creek now has water but the caller's animals are sick with cancer and caller suggests the creek water is contaminated from the mine.	MARTINS CREEK QUARRY Station St Martins Creek	BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
28/04/2014 06:00:00 AM	I06886-2014	28/04/2014 04:14:00 PM	300 NOISE/VIBRATION - 301 MINE	Loud machinery noise coming from Martins Creek Quarry Station St Martins Creek. Caller says the noise started at 06:00 and has progressing loudly as the afternoon approached where caller says the noise is unbearable now.	Martins Creek Quarry Station St Martins Creek	BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG

	I05252-2014	26/03/2014 01:49:00 PM	1300 OTHER - 1301 EPA LICENSED - N/A	Report emailed to info@environment on 26/3/14 at 13:49: In summary complainant has a number of grave concerns that relate to the quarry operations and associated transport activities of the extraction and cumulative environmental impact of these works. A number of these concerns complainant states are outright breaches of the licensees operating conditions. In the second instance a number of these concerns are subjective cumulative impacts not adequately addressed or controlled within the licences current conditions. (see email attached)	Buttai Gravel Pty Ltd (MARTINS CREEK QUARRY), Station St, Martins Creek: EPL 1378		BUTTAI GRAVEL PTY LTD EPL#1378	MARTINS CREEK	DUNGOG
26/02/2014 12:00:00 AM	I03033-2014	26/02/2014 10:07:00 AM	300 NOISE/VIBRATION - 305 WASTE FACILITY - Particulates/dust Noise/vibration	Caller affected by early morning noise from the quarry, trucks are parked in the yard overnight, caller hears them start driving out of the yard to be loaded from about 5:30-5:40am, the trucks can then leave the quarry loaded at about six, sometimes a little before 6am. Licence conditions suggest that noise should not be affecting resident prior to 6am. Caller also affected by excessive dust from the road near the quarry, associated with trucks on the road. The premises have indicated that they can't water down the road because it makes it muddy, they also don't seem to water down the truck before they leave. The cloud of dust is visible from a long distance away, the dust generally seems worse recently.	Buttia gravel, Station Street Martins Creek		BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
19/12/2013 08:30:00 PM	I20402-2013	20/12/2013 08:33:00 AM	300 NOISE/VIBRATION - 301 MINE - Noise/vibration	Quarry has been working late virtually every night this week. Finishing time on the western side is 5pm and the eastern side is 6am-6pm. Caller can hear the crushers and the reversing alarms as late as 8.30pm or 8.45pm. Employees cars wake caller as they start arriving at 4.45am-5am and the trucks start up at 6am on site.	BUTTAI GRAVEL PTY LTD - ELR 1378 Martins Creek Quarry, Station Street, Martins Creek	Section 74	BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
09/11/2013 07:45:00 AM	I18534-2013	09/11/2013 08:02:00 AM	100 AIR PARTICULATES - 102 WASTE FACILITY - N/A	After hours call. Large amount of dust in air coming from the Daracon Quarry (Buttai Gravel), Station St and Grace Avenue, Martins Creek on 09/11/13 at 07:45. There is dust over the valley from their crusher. (A/hrs reference 31557)	Buttai Gravel (Daracon), Station St, Martins Creek EPL 1378		BUTTAI GRAVEL PTY LTD	MARTINS CREEK	DUNGOG
22/10/2013 07:00:00 PM	I17694-2013	23/10/2013 08:55:00 AM	300 NOISE/VIBRATION - 301 MINE	Noise from trucks driving up Station St to the Martins Creek quarry last night at 19:00. caller says the the truck are not suppose to drive up Station St after 17:00. Caller also said they started work at the quarry at 06:30	Martins Creek Quarry Station St		Daracon	MARTINS CREEK	DUNGOG
09/07/2013 04:00:00 PM	I11119-2013	09/07/2013 06:36:00 PM	300 NOISE/VIBRATION - 302 RAIL - Noise/vibration	AFTER HOURS. Caller advised there are trains idling past 19:00pm and goes on into the evening. The noise went from the afternoon until 2:00am. Ongoing issue . [A/HRS REF:# 24537]	Daracon, Martins Creek		Daracon	MARTINS CREEK	DUNGOG

eferencel	Type	CallDate allerNan	Suburb	Council	InciDate	nciTim	IncidentLocation	GIPA 677 Buttai Gravel Pty Ltd Sept 1996 - August 2012
21856	341	17/May/1999	MARTINS CREEK	DUNGOG	17/May/1999	10:05	RSA Quarry, Station St (owned by State Rail)	Noise from trucks driving to quarry, caller believes they are operating outside acceptable hours. Caller believes normal operating hours are 7am to 4pm, but trucks are arriving earlier, one at 2.30am recently, another this morning was at 3.50am, another one at 5am. Caller says "improvements" are being made at the quarry at the moment but he believes they are working outside limited hours. Caller wants to know what the official operating hours are. Could EPA inspector pls ring caller to discuss.
23589	300	12/Aug/1999	MARTINS CREEK	DUNGOG	11/Aug/1999	16:00	MARTINS CREEK QUARRY, TOCAL RD NEAR TARCOL SCHOOL	MARTINS CREEK QUARRY TRUCKS LEAVE QUARRY NOT USING TARPS TO COVER LOADS. DUST & ROCKS FLYING OFF TRUCKS - ONE CHIPPED WINDSCREEN. EPA SIGN SAYS COMPANY SHOULD BE USING TARPS.
41855	341	04/May/2001 S. 74	MARTINS CREEK	DUNGOG			State Rail Quarry	State Rail Quarry, Martins Creek has been blasting for ballast for railways. Caller says the blasting is causing cracks in house. Caller has been advised by a bricklayer recently that the cracks in the house is caused by the blasting. The bricklayer also brought a consultant along and the consultant verbally confirmed this. This problem has ongoing for last 2 years and the caller has to repeatedly having to keep repairing the cracks. The last blasting occurred 23/4/2001 and as a result there is extensive cracking inside and exterior of the house.
43405	300	26/Jun/2001	MARTINS CREEK	DUNGOG	26/Jun/2001	15:30	Metromix quarry - Station Street	Metromix quarry allow their transport trucks to operate with uncovered loads. As a result caller says the dust in the area is unbelievable. Some days there are sixty to seventy trucks driving past - all of them uncovered. The verandah is permanently covered with gravel dust. This problem has been going on for years but seems much worse lately. Also the trucks start work at 05.30 in the morning - this is a couple of hours earlier than allowed and they are very noisy.Caller has complained to the quarry managers but she believes that they don't care about the local residents opinions on this. They also seem to be excavating much closer to callers residence than caller was originally advised. Caller believes they are almost regulating themselves as there never seems to be any checks on the premises etc and feels that an EPA inspector needs to be made aware of the problem.

44498	300	07/Aug/2001	S. 74	PATERSON	DUNGOG	07/Aug/2001	10:00	Martin's Creek Quarry -	30 Truck movements a day past my caller's home which create untenable amounts of dust preventing caller from opening doors and windows. S. 74 S. 74 S. 74 Caller is requesting that the watering not only be on a regular basis but that it is extended because despite the short stretch of tar out the front of her home - the majority of truck drivers have no concern for the well being of the residents and mostly drive at top speeds (some hit 80km on the stretch). Also not all trucks have their loads covered and dust will migrate from the material as they fly past but her chief concern is the billows of dust from untarred road. Caller says that the quarry has been 'extracting a good living' for many years and although it is poss ble for the quarry to put another road into the site which doesn't affect the residents amenity - they haven't done so. Caller says that tarring the full stretch (which is mainly subject to heavy truck movements from the quarry) is another option which would at least address the dust from the road problem. Can EPA please investigate?
54879	300	15/Jul/2002		MARTINS CREEK	DUNGOG	12/Jul/2002	20:00	MARTINS CREEK QUARRY, STATION RD	TRUCKS FROM MARTINS CREEK QUARRY DRIVING PAST AT 8PM AT NIGHT CREATING A GREAT DEAL OF DUST AND NOISE. NOT TREATING THE ROAD TO PREVENT THIS DUST AND DRIVING VERY FAST.
67495	300	19/Sep/2003		MARTINS CREEK	DUNGOG	19/Sep/2003		Martins Creek Quarry (Licence 1378)	There is dust coming from the Martins Creek Quarry over the towns of Paterson and Martins creek. The dust is a large haze over the towns and has been present for the last few days. The dust is very bad. It is catching in callers throat and their eyes are puffy. Callers home is full of dust. Yesterday was particularly unbearable. Caller lives quite a distance from the quarry and caller is concerned for the S. 74 S. 74 .Caller has been putting up with this for years, but have never complained. Now they have had enough and want the EPA do do something about it. Caller was told there is no dust supression at the quarry at all. There was also a loud blast yesterday afternoon which rocked the callers home.

71789	341	23/Feb/2004		MARTINS CREEK	DUNGOG	22/Feb/2004	5:45	Martins Creek Quarry	Caller reports that the quarry was working on Sunday. Trucks arrived at .5.45am & began leaving at 6am. Caller feels they finished at about 13.45hrs. Caller is approx 1/2k from the site. Caller asks what are their approved work hours? Trucks arrive at midnight regularly & travelling at about 90kph in order to be the first truck out in the morning. Is this allowed?
71853	341	24/Feb/2004		MARTINS CREEK	DUNGOG	24/Feb/2004		RIC Quarry, Douglas St	Noise from the RIC quarry at Martins Creek.The quarry operates from 6am every morning and trucks from the quarry are there at 5am. 15 -20 trucks will line up, in an attempt to be the first into the quarry. Sometimes they park at the quarry in the middle of the night and drivers sleep in their trucks. Last Sunday they were working from 6am as usual. Two weeks ago they were working at 10pm on a Sunday. Could an EPA officer please phone caller back to explain their legal hours of operation.
71881	341	25/Feb/2004	S. 74	MARTINS CREEK	DUNGOG	25/Feb/2004		Martins Creek Quarry Licence # 1378	Caller reports that the quarry started operations at 5am on Sunday (22/02/04). Truck were passing at high speed to access the quarry. The noise was very instrusive.
75454	341	21/Jun/2004		MARTINS CREEK	DUNGOG	21/Jun/2004		Martins Creek Quarry (State Rail and Metromix)	Noise and dust from trucks arriving and leaving Martins Creek Quarry. This morning trucks arrived at 5:15am, they then sat at the gates with the engines running. Sunday morning a truck arrived at 6:15. This is an ongoing issue. Trucks have been leaving the site as late as 5:45pm. Caller would like to discuss this issue with an operations officer.
82765	341	17/Mar/2005		MARTINS CREEK	DUNGOG	17/Mar/2005	6:00	Martins Creek Quarry	Noise from trucks arriving early hours at Martins Creek Quarry. Caller says the licence allows the quarry to operate from 06:00-18:00. The trucks are arriving at 05:15. Caller had complained last year and the trucks stopped for awhile but now are starting early again. Caller is also querying why the mine is allowed to operate at 06:00 when other mines in the area start at 07:00.
84782	341	02/Jun/2005		MARTINS CREEK	DUNGOG	02/Jun/2005	5:10	Martin's Creek Quarry - enroute along Patterson Road	Noise of heavy B-double trucks passing caller's home from 5.10am onwards for a 6am start at the mine. There is money allocated to upgrade the road but it has been 8 months since caller was told it is seemingly underway, yet nothing has been done. Caller asks if it is poss ble to have a db reading done?

93540	341	20/Jun/2006		MARTINS CREEK	DUNGOG	20/Jun/2006	12:50	Railcorp/Martins creek quarry	Noise/vibrations from quarrying: Caller reports that two explosions from the quarry caused house to shake violently, a tile fell off the bathroom wall, windows rattling very hard also. Caller is not normally home during working hours but had noticed a similar event about a month ago. Referred to EPA by council. Caller would appreciate a telephone call to discuss the matter.
101058	390	24/Jul/2007		MARTINS CREEK	DUNGOG	24/Jul/2007	13:43	Martins Creek Quarry (owned by Daracon)	Water in Martins Creek, passing through S. 74 looks muddy. Caller is concerned about water quality, as S. 74 S. 74 . Caller believes mud is coming from mine. A neighbour has told her this, although she cannot see a point where the muddy water enters the creek.
102217	341	21/Sep/2007		MARTINS CREEK	DUNGOG	21/Sep/2007	13:52	Martins Creek Quarry lic 1378	2 very loud blasts occurred yesterday at Martins Creek. Caller would like feedback if there is any monitoring occurring on this quarry site as it is very close to the village area.
102923	300	29/Oct/2007	S. 74	MARTINS CREEK	DUNGOG	29/Oct/2007	11:30	Martins Creek Quarry	Railway ballast quarry is causing excessive amounts of dust when they fill up the pugmill.
104769	340	08/Feb/2008		PATERSON	DUNGOG	08/Feb/2008	13:31	Martins Creek Quarry	Caller advised there was a blast from Martins Creek Quarry that shook the house and rattled the windows.
104957	341	18/Feb/2008		MARTINS CREEK	DUNGOG	08/Feb/2008	13:30	Martins Creek Quarry (Railcorp operation), Douglas St	Explosion at Martins Creek Quarry (EPL 1378) operated by Railcorp on Friday February 8th at 13:30. House shook and callers know it has shaken when blasts have gone off previously when callers have been at home. Caller has contacted the Quarry previously and was told that if their house shakes or shows cracking it is not built to an appropriate Australian Standard - generally Quarry staff treat local complainants with contempt. Caller is located approx S. 74 rom the quarry. Closer neighbours get dust as well as shaken houses.
106141	341	17/Apr/2008		MARTINS CREEK	DUNGOG	17/Apr/2008	14:04	Martins Creek Quarry	Blast from Martins Creek Quarry, vibration felt while caller was out in paddock.

109440	341	10/Oct/2008		MARTINS CREEK	DUNGOG	02/Oct/2008	14:15	Martins Creek Quarry (Railcorp)	Caller reports that this afternoon (10/10/08) there was a large blast at the Martins Creek (Railcorp owned) Quarry which was very loud, however last Thursday, 2/10/08 at 14:15 a much stronger blast shook the caller's house and sent a strong unpleasant vibration right through her body. The caller is concerned that there may be more of these very strong blasts when no one is at home to record them and what damage this may be causing to her house. Can the presumed onsite monitoring undertaken at the Quarry show what size blasts are occurring and when? Secondly the caller is concerned about recent extensive land clearing on the quarry site and at a meeting with Railcorp, Council and DECC on 16/8/08 there was a comment that a full environmental impact statement had not been completed. Has the EIS been completed and is it comprehensive? The caller is seeig a lot of wildlife moving into the general area recently and assumes that the Quarry land clearing is destroying habitat. Thirdly at that meeting feedback was promised to residents however none has been forthcoming.
114627	341	01/Jul/2009	S. 74	MARTINS CREEK	DUNGOG	01/Jul/2009	12:50	Martins Creek Quarry,	Caller reporting blast in the quarry. Windows in the house rattled and caller felt it through her body. This was a much louder/more intense blast than usual.
121910	341	22/Jun/2010		MARTINS CREEK	DUNGOG	22/Jun/2010	12:55	Martins Creek Quarry- Lic 1378	Caller advised there was a loud blast today from Martins Creek Quarry @12:55pm that shook the windows and could hear them rattle, Complainant felt the v brations through their body and is on a concrete slab.
121912	341	22/Jun/2010		MARTINS CREEK	DUNGOG	22/Jun/2010	13:00	Martins Creek Quarry	Very loud blast coming from Martins Creek Quarry which caused house to shake. They have been blasting every week. Caller would like feedback if they can blast and caller is worried about the magnitude of the blasts.
123886	341	28/Sep/2010		MARTINS CREEK	DUNGOG	28/Sep/2010	15:12	Martins Creek Quarry	Excessive vibrations from a blast at Martins Creek Quarry at Martins Creek. Caller said there was also noise associated with the blast but v brations are the main issue.

126395	321	01/Feb/2011		MARTINS CREEK	DUNGOG	01/Feb/2011		RailCorp owned rock quarry next to Martins Creek Village	Potential breach of Native Vegetation Act: clearing of about 5 hectares of vegetation at a rock quarry at Martins Creek, possibly owned by RailCorp. Clearing has been ongoing and needs to be urgently looked at by EPRG as there is no way to know how much more clearing will be carried out. This is visable right across the valley and caller has observed the clearing from S. 74 away.
127171	341	07/Mar/2011	S. 74	MARTINS CREEK	DUNGOG	07/Mar/2011	12:40	Martins Creek Quarry	Blast about 15 minutes ago: so loud it drowned out caller's radio and she felt the vibration through her whole body. Much louder than usual.
127173	341	07/Mar/2011		MARTINS CREEK	DUNGOG	07/Mar/2011	12:40	Martins Creek Quarry	Blast coming from Martins Creek Quarry which caused the house to shake.

MCQ CCC Meeting November 2014

- There were 8 complaints received in total in October. 7 related to blasting, 4 direct to the quarry and 3 via EPA. All results were within limits for these blasts
- 1 complaint was for noise at 6.30am. Investigation showed nothing out of the ordinary happened during this time period.

MCQ CCC Meeting December 2014

- 3 complaints re trucking – debris on road in Port Stephens Council area, truck complaints Bolwarra and Dungog Road

MCQ CCC Meeting February 2015

- 1 reported incident – Daracon trucks regarding speed limit in Station Street exceeding 20km per hour
- Truck running out of fuel in Paterson The driver made an effort to roll the truck off the road to the safety of the road shoulder. However, during this the motor shut down resulting in the truck becoming immobile and blocking both lanes for a short time. Daracon immediately notified relevant authorities and attended the scene and in conjunction with the authorities to put in place temporary traffic management. To alleviate congestion at this time, Daracon ordered a halt to truck movements to and from the quarry. Daracon has written to all sub-contractors to remind them of their obligations and to try to avoid a similar situation in the future.

MCQ CCC Meeting April 2015

- Blasting – complaint 3/2/15 via EPA – monitor results within consent limits
- Blasting – complaint 13/2 – excessive noise & vibration - monitor results within consent limits
- Trucking – 5/2 – Grace Ave – 1 piece of ballast rock on driveway, cleaned
- Trucking – 14/2 – (see attachment 4) J McNally forwarded enquiry; Daracon response;
- Trucking – 2/3 – 2 complaints rocks on road, contacted Council, sweeper deployed; tailgate faulty – driver no longer employed
- Trucking – 5/3 – Faulty grain chute, picked material Station St, cleaned up – no further action
- Trucking – 11/3 – Oil sump – 500m small oil line, absorbent placed – no further action
- Trucking – 26/3 – Ex bin truck popped tail gate while driving; reported to council, Daracon cleaned up initial material, and driver returned to clean up remainder
- Hanson – met with Hanson and agreed to share traffic data for cumulative assessment

MCQ CCC Meeting May 2015 (outside hours emergency flood operations)

- Summary of complaints during emergency works
  - 9 related to trucking (out of normal hours, truck speed)
  - 1 related to quarry operation
  - 1 related to any additional water use

MCQ CCC Meeting July 2015

6/7 - Complaint re trucks exceeding voluntary speed restrictions - Bolwarra Heights – Daracon provided response noting both were ex-bin trucks

MCQ CCC Meeting September 2015

Reports received of trucks travelling in excess of 20km in Station Street

Action – Drivers spoken to regarding the 20km voluntary speed limit in place in Station Street.

20th August

Compliant received of truck driver driving aggressively – no certain details provided, unable to identify truck

24th August

Complaint from truck driver regarding driving behaviour of truck driver – Daracon investigated with driver no longer welcome at quarry

24th August

Complaint received truck in Station Street not having cover over trailer. Driver indicated that his cover was on. Daracon followed up and the company owner provided toolbox and written advice to drivers.

26th August

EPA indicated there was a complaint with regards to blasting impacts on house in Merchants Road. Unable to follow up as no details provided as per EPA procedure. All results were well within the limit.

MCQ CCC Meeting October 2015

September – one complaint – truck ashing out a window, with no further details.

MCQ CCC Meeting June 2016

18th January – truck speed in Station St

20th January – truck speed in Station Street

29th January – not receiving notification of blast

4th Feb – truck speed in Station St

23rd February – stone flicked up off road and caused damage to windscreen

17th Feb – truck speed in Station St

3rd March - truck Speed in Station St

8th April – truck too close to car at Bolwarra road works

17th June – blasting compliant

Appendix 5 Dust Impact

Dust emissions from Lot 1 processing equipment

Dust emissions from Lot 5/6 mobile crushing equipment, dust plumes moving South East over Martins Creek Village

Dust emissions from Lot 5/6 mobile crushing equipment

Dust emissions from MCQ facility drifting from Lot 5/6 South East across Martins Creek Village and surrounding residences

Appendix 6 Silica Content Test

Bureau Veritas Minerals Pty Ltd

ABN 30 008 127 802

Phone: +61 (0) 8 8440 7100

Unit 2, 35 Cormack Road
WINGFIELD SA 5013
AUSTRALIA

Fax: +61 (0) 8 8440 7199

QUANTITATIVE X-RAY DIFFRACTION ANALYSIS OF ONE SAMPLE

REPORT NO: N6673XD15

Date: 1 July 2015

Client Details

Company	BVM Cardiff
Contact	Phil Everson

Job Details

Sample Description	L113371
Quantity	1
Sample ID	1 – Grey Rock

Project Manager	Rebecca Pohrib

Laboratory Contact
Rebecca Pohrib
Mineralogist

Rebecca.pohrib@au.bureauveritas.com
Phone: +61 (0) 8 8440 7191

Sales Contact
Tony Fuda
Business Development Manager

tony.fuda@au.bureauveritas.com
Phone: +61 (0) 418 577 948

1. INTRODUCTION

On the 18th of June 2015, BVM Cardiff commissioned **Bureau Veritas Minerals Pty Ltd** Laboratories to conduct quantitative XRD on one sample to determine the overall free silica.

2. PROCEDURE

To calculate the amorphous content in the sample, a known quantity of a zinc oxide internal standard was added to the "as received" sample. The sample was micro milled for 10 minutes, with ethanol as the grinding liquid. The resultant sample was lightly pressed into a back-packed sample holder. The XRD trace was collected under the following instrument conditions.

XRD generator	PANalytical X'Pert Pro PW3040 diffractometer, 40 kW, 40 mA
Filter	Iron
Radiation	CoKα (λ = 1.789Å)
Angular range	5° to 80° 2θ
Angular speed	0.04426° 2θ/second
Step size	0.0167°
Divergence Slit	¼°
Anti-scatter Slit	½°
Spinning	4 seconds per revolution

Mineral identification was undertaken using the X'Pert HighScore Plus search/match software. Rietveld quantitative analysis was performed on the XRD data using the commercial package, SIROQUANT™ V3 from Sietronics Pty Ltd.

3. RESULTS

The results of quantitative XRD analysis (including Amorphous) are shown in Table 1 and Figure 1 and the XRD trace was shown in Figure 2. The level of accuracy normally achievable by SIROQUANT and other Rietveld-type quantitative analysis programmes is generally around ± 3 wt% (absolute) at the 95% confidence level. The Rietveld process simulates the XRD pattern from the known crystal structures of the minerals and varies parameters such as mineral abundance and 'crystal properties', so that the simulated pattern 'fits' the observed XRD pattern. A high degree of uncertainty exists when determining trace minerals (<5 wt%) by XRD. This is due to the relatively high background noise which tends to obscure minor peaks, which are required for a positive identification of a particular mineral. Crystalline analysis only quantifies the identified crystalline minerals and not amorphous material, unknown minerals or known minerals for which there is not a suitable crystal structure in the SIROQUANT database. Please note the values in Table 1 are rounded off due to the level of accuracy.

There are a number of factors that can affect the quality of the XRD analyses. These include: (i) sample preparation (ii) the presence of poorly crystalline phases, (iii) the presence of minerals for which there is no crystal structure in the Rietveld database and (iv) the use of inappropriate crystal structures for a given mineral. Bureau Veritas use the standard SIROQUANT database of crystal structures to estimate mineral abundances. XRD analyses may also be less accurate if there are a significant number of overlapping peaks from various phases.

The amorphous content could include random scattering from any non-crystalline material. Amorphous material has no defined peak that can be identified, and can only be measured once all other crystalline material has first been identified. The amorphous content may also include the difference between the experimental and calculated data (ie the unfitted phase/s caused by solid solution series/ or poor crystallinity). Amorphous material was quantified by adding a known amount of ZnO, i.e. 5 wt% to the sample. Please note the values in Table 1 and 2 are rounded off due to the level of accuracy.

Table 1 – Quantitative XRD results (with Amorphous phase)

	Formula	Grey Rock
Amorphous[1]	Undefined	24
Quartz	SiO_2	14
Plagioclase[2]	$NaAlSi_3O_8$ – $CaAl_2Si_2O_8$	35
Chlorite	$[(Mg,Fe,Ni,Mn)_5Al](AlSi_3)O_{10}(OH)_8$	2
K-Feldspar[3]	$KAlSi_3O_8$	20
Mica[4]	$X_2Y_{4-6}Z_8O_{20}(OH,F)_4$	1
Amphibole[5]	$XY_2Z_5(Si,Al,Ti)_8O_{22}(OH,F)_2$	4
TOTAL		100

1. The results in the Table 1 suggested that the sample contained moderate amorphous non-crystalline material phases.
2. Albite was used in the SIROQUANT Rietveld refinement, as it gave the best agreement between the calculated and observed patterns.
3. Orthoclase was used in the SIROQUANT Rietveld refinement
4. Mica group in which X is K, Na, Ca or less commonly Ba, Rb, or Cs; Y is Al, Mg, Fe or less commonly Mn, Cr, Ti, Li, etc.; Z is chiefly Si or Al but also may include Fe3+ or Ti. Phlogopite was used in the SIROQUANT Rietveld refinement, as it gave the best agreement between the calculated and observed patterns. Further investigation would be required for more accurate classification of the mica mineral.
5. Amphibole where X = Na, K, vacant; Y = Na, Ca, Fe2+, Li, Mn2+, 3+,Al, Mg; Z = Fe3+, Mn3+, Al, Ti+4, Fe2+,Li. Hornblende was used in the SIROQUANT Rietveld refinement. Hornblende may under/over-estimated further investigation would be required for more accurate classification.

Table 2 – Free silica results

	Grey Rock
Free Silica (quartz)	14

Figure 1 – Quantitative XRD results (with Amorphous phase)

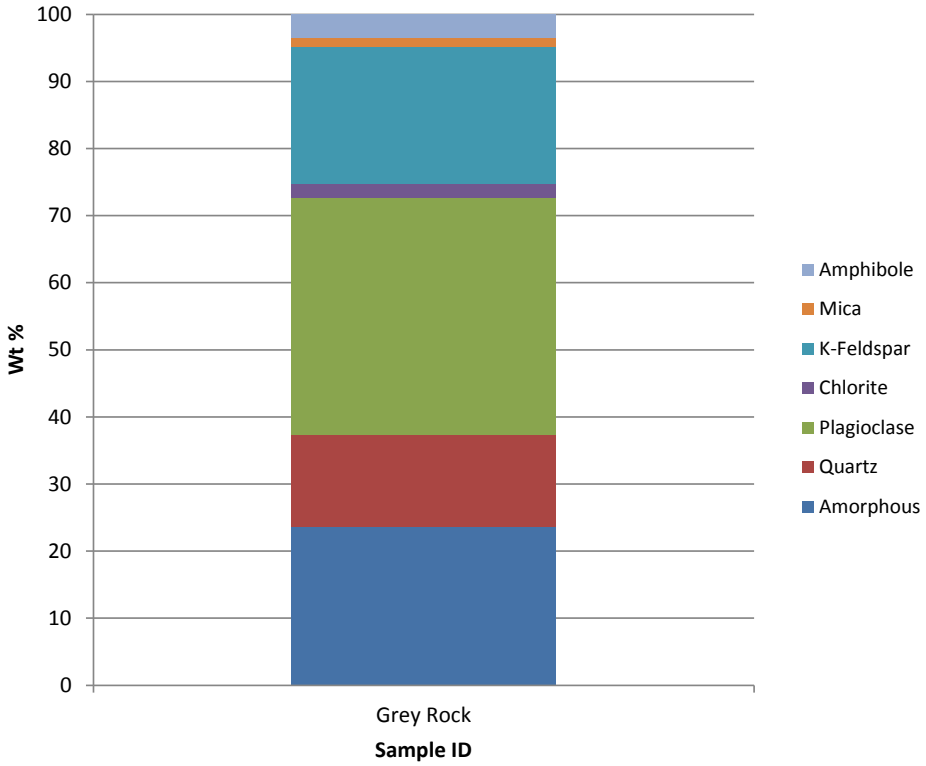
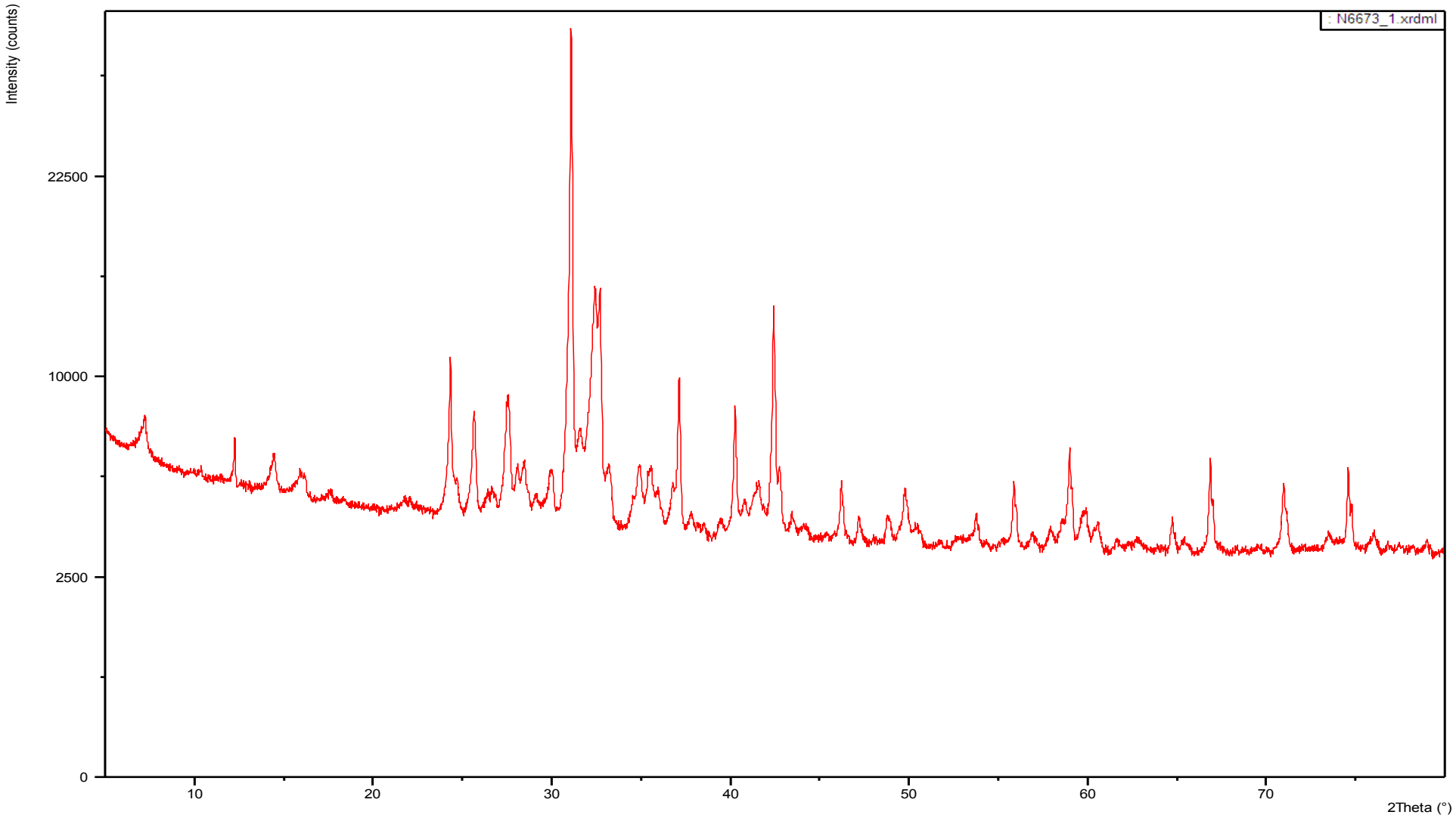


Figure 2 – XRD Traces of the samples (Note the y axis uses a square-root scale, traces include the ZnO internal standard)



Appendix 7 Road Condition & TIA Photos

Photo 1 – Proposed new entrance location to MCQ

Photo 2 – Goswyck one way Bridge (heritage listed)

Photo 3 – Church Street & King Street intersection, Paterson Village

Photo 4 – Paterson Village, activity centre

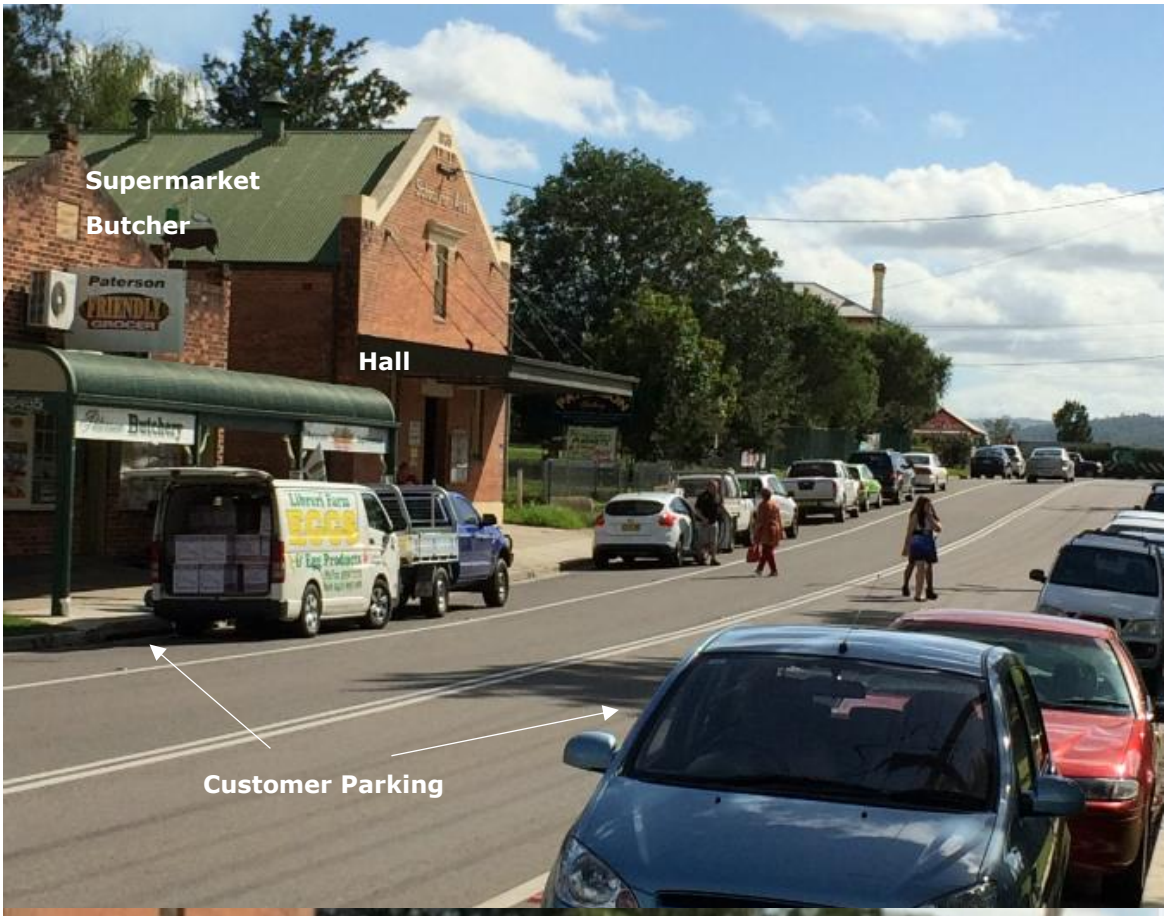


Photo 4 continued – Paterson Village, activity centre

Photo 5 – Tocal homestead, wedding venue and tourist attraction

Photo 6 –Mindaribba House wedding venue

Photo 7 – Tocal Road and Lang Drive intersection (no sheltered turning lanes)

Photo 8– Tocal Road and Maitland Vale Road intersection (no sheltered turning lane)

Photo 9– Tocal Road and Moore Road intersection (no sheltered turning lane)

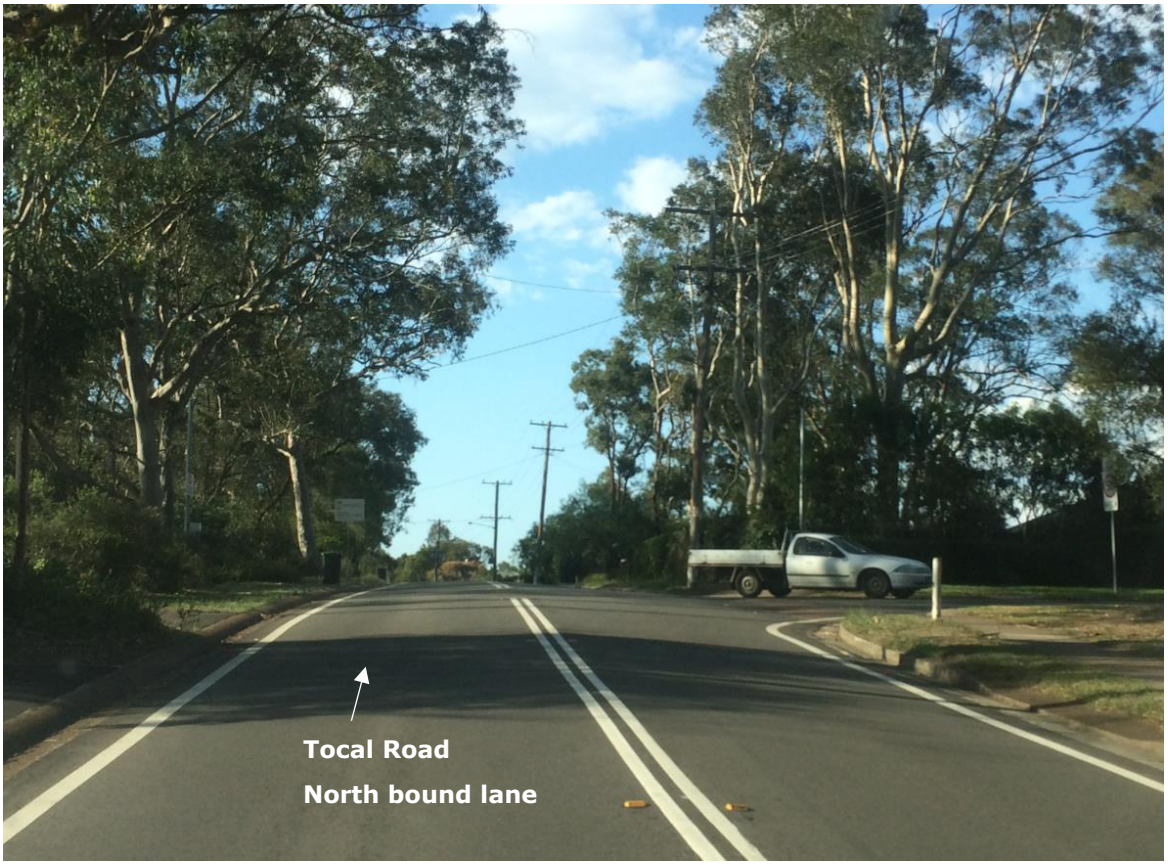


Photo 10– Tocal Road and Wesley Street intersection (no sheltered turning lane)

Photo 11– Tocal Road and Paterson Road intersection (deficient sheltered turning lanes)

Photo 12–Paterson Road and Bolwarra intersection (no sheltered turning lanes)

Photo 13– childcare centre (no sheltered turning lanes)

Photo 14– Dunmore Bridge, Paterson Road (single lane width)

Photo 15–Paterson Road pavement and shoulder widths not to Austroad Guidelines

Photo 17–Dunns Creek, Butterwick Road and Paterson Road intersection widths and lanes not to Austroad Guidelines

Photo 18– Butterwick Road land widths and shoulders not to Austroad Guidelines

Photo 19– Pavement structural capacity inadequate Tocal Road Mindaribba

Photo 20– Pavement structural capacity inadequate – Tocal/Maitland Road Paterson

Photo 21– Pavement structural capacity inadequate Tocal/Maitland Road Paterson

Appendix 8 Noise Impact Assessment – Peer Review

BRIDGES ACOUSTICS

ABN: 73 254 053 305

78 Woodglen Close
P.O. Box 61
PATERSON NSW 2421

Phone: 02 4938 5866
Mobile: 0407 38 5866
E-mail: bridgesacoustics@bigpond.com

24 November 2016
Ref: J0232-01-R1

Martins Creek Quarry Action Group
P.O. Box 500
PATERSON NSW 2421

Attn: Mr James Ashton

Dear James,

RE: ACOUSTIC REVIEW OF THE ENVIRONMENTAL IMPACT STATEMENT, MARTINS CREEK QUARRY

1. INTRODUCTION

The Environmental Impact Statement (EIS) for Martins Creek Quarry, prepared by Monteith & Powys Pty Ltd and various sub-consultants in September 2016, was placed on public exhibition by the Department of Planning & Environment (DP&E) for the period 13 October to 24 November 2016. This report describes results and conclusions arising from a review of the noise and blasting sections of the EIS, with the principal objective of the review to determine if the EIS contains a comprehensive and accurate assessment of noise and blasting impacts and to highlight any errors or deficiencies.

The review was commissioned by the Martins Creek Quarry Action Group (MCQAG) which is generally against the project. However, this report presents results from an unbiased review of the EIS as the author is not personally impacted by the existing quarry, does not anticipate being impacted by the project and does not have any relatives or close friends that are likely to be impacted by the project.

This review report is incomplete, particularly in relation to environmental noise levels from the quarry itself, due to a request to the EIS and Noise Impact Assessment (NIA) authors for additional information not being responded to in a timely manner. Further discussion of this issue is included in the 'operational noise levels' section. An addendum to this report will be prepared when a review of the noise model is completed.

2. NOISE

The EIS includes a Noise Impact Assessment (NIA) report in Appendix I, prepared by RCA Acoustics. This section presents comments and recommendations arising from a review of that report.

2.1 Existing Noise Environment

2.1.1 Measured Background Noise Levels

The NIA describes results from a survey to determine background noise levels at three locations:

Logger A – 94 Cory Street Martins Creek, opposite Cook Street approximately 1200 m south of the existing quarry's gravel processing and loading area; and

Logger D – Dungog Road, less than 100 m west of the quarry's extraction area.

Logger A returned background noise levels less than 30 LA90,15min, resulting in the minimum Project Specific Noise Level (PSNL) of 30 LAeq,15min. However, the measured background noise level of 33 LA90,15min returned by Logger D during the day period is likely to have been influenced by noise from the existing quarry, which is not appropriate according to the NSW Industrial Noise Policy (INP). The NIA is silent on the question of existing quarry noise levels at Logger D during the noise survey, indicating a failure to recognise this issue as an important element in any assessment to the INP.

RECOMMENDATION: Either the background noise survey needs to be repeated for Noise Assessment Group (NAG) 3 at a location that is not affected by existing quarry noise, or a conservative minimum PSNL of 35 LAeq,15min must be adopted for this area.

2.1.2 Measured Traffic Noise Levels

The NIA reports results from a survey of existing traffic noise levels at five locations:

- In front of 281 Dungog Road Vacy, although the NIA indicates the noise monitor was placed approximately 40 m from the road rather than adjacent to the residential façade approximately 100 m from the road as required by the NSW Road Noise Policy. The NIA is also silent on whether a suitable façade reflection correction was added to the free-field noise measurements;
- Within or adjacent to 21 King Street Paterson, although the map showing this location is unclear. The noise monitor was installed either on the footpath significantly closer to the road than any residential buildings, or within the property behind a significant steel fence which would act as a noise barrier. Either way, these results cannot be used without significant corrections to the measured levels to account for distance and shielding;
- In the front yard of 13 Duke Street Paterson. The NIA is silent on the exact location of the noise logger, however a discussion with the owner of this property indicated the microphone was placed approximately 0.5 m from the residential façade, at least partly behind a timber slat fence;
- On either Gresford Road or Tocal Road in the vicinity of William Street Paterson, although the exact location cannot be determined from the NIA therefore the noise measurement results at this location are of limited value; and
- At the rear of either 30 or 32 Hilldale Drive Bolwarra Heights, an unspecified distance from Tocal Road which limits the value of noise measurement results at this location.

Measured traffic noise levels at the last four locations were affected by an unspecified number of quarry trucks passing each logger, although the NIA reported an attempt to identify the number of quarry trucks by assuming all Class 9 vehicles were quarry trucks and all other vehicles were not. While it is true that a significant number of trucks visiting the quarry are Class 9 vehicles, a significant number of other trucks also visit the quarry on a daily basis. Equally, other Class 9 vehicles that are obviously not visiting the quarry can occasionally be observed passing through Paterson. The NIA does not report the number of trucks visiting the quarry, as indicated by weighbridge records, compared to the number of Class 9 and other heavy vehicles indicated by the traffic counters, during the noise surveys.

The NIA also considers existing quarry trucks to be a part of 'background traffic', to the extent of repeating the noise survey in November 2014 when it was discovered the first noise survey in August and September 2014 occurred during a time of relatively low truck numbers. It is not appropriate to justify proposed traffic noise levels compared to an elevated baseline, not only due to current court action questioning the legality of the existing truck numbers under the quarry's existing consent.

RECOMMENDATION: The NIA should specify exactly where each traffic noise monitor was located and whether distance and façade corrections are required and have been applied to measured data.

The NIA should report the number of quarry trucks and measured noise levels in each of the two noise survey periods, allowing an estimate of the effect of quarry trucks on measured noise levels.

The measured traffic noise levels must exclude existing quarry truck noise to present a correct baseline, either by identifying and removing noise from each quarry truck passby event or by other appropriate means such as careful correlation with weighbridge records.

2.2 Noise Criteria

2.2.1 Operating Noise Criteria

The NIA developed operating noise criteria according to the INP, although with incorrect background noise levels for NAG 3 as discussed above.

Table 8 in the NIA reports an existing ambient industrial noise level of 'n/a' at all receptors, despite Table 3 indicating an existing measured quarry noise level of nearly 55 LAeq,15min at 23 Station Street. The NIA reasonably states the quarry is the only significant source of industrial noise in the area, therefore the amenity criteria equal the acceptable noise levels in Table 8. It appears the NIA has reached the correct amenity criteria despite flawed logic.

Table 11 proposes alternative criteria, supposedly due to unspecified 'analysis' which shows the PSNL cannot be met after application of all reasonable and feasible mitigation measures. Section 7.1 of the NIA proposes a number of mitigation measures such as walls, earth barriers, enclosures and relocation of processing plant. There is no analysis of alternative mitigation measures including higher barriers, alternative operating strategies or machines or other potential mitigation measures. There is no mention of adjustment to operating hours to avoid noise impacts in the most sensitive hours. In the absence of proper analysis demonstrating there are no other reasonable and feasible options, alternative noise criteria cannot be accepted.

RECOMMENDATION: The PSNL at NAG3 should be recalculated based on the correct background noise levels determined in the absence of existing quarry noise.

The NIA should correct the flawed logic related to the effect of existing quarry noise levels on the amenity criteria derived in Table 8.

The alternative noise criteria listed in Section 5.7.2 and Table 11 of the NIA must be either deleted or properly justified.

2.2.2 Sleep Disturbance Criteria

The NIA correctly recognises that sleep disturbance criteria are currently uncertain, in the absence of clear research results correlating sleep disturbance with noise levels and character inside a bedroom, and a number of alternative criteria exist. The NIA adopts different criteria for the Martins Creek NAG (NAG 1) than adopted for the other NAG which, according to the NIA, is due to occasional train loading noise at night.

It seems appropriate to adopt the lower and more conservative criterion of 15 dBA above background level (ie. 45 LAmax) for all receptors, including those in NAG 1 when a train is not being loaded. It is also considered reasonable to relax the sleep disturbance criterion to some extent to allow occasional train loading at night, although it remains to be seen whether the NIA's proposed external criterion of 65 LAmax during train loading will protect residents from significant sleep disturbance.

RECOMMENDATION: The NIA should clarify the sleep disturbance criteria in relation to NAG 1, including the higher proposed criterion only applying during train loading at night and the lower and more conservative criterion of 45 LAmax applying to all NAG 1 receptors at other times.

2.2.3 Low Frequency Noise Criteria

The NIA states no source sound power levels show a dBC – dBA difference of more than 15 dB, therefore a low frequency correction is not required. However, the NIA does not list the source sound power spectra, in octave bands or 1/3 octave bands, to support this assertion. In any case the dBC – dBA test applies at the receptor, not at the source, therefore the NIA comments on the low frequency issue are based on incorrect logic.

Simple dismissal of this issue without proper analysis is not acceptable.

RECOMMENDATION: The NIA should present the source sound power levels in octave bands and properly determine the need for a low frequency correction to the predicted received noise levels.

2.2.4 Traffic Noise Criteria

Section 5.3 of the NIA states Station Street is a principal haulage route and therefore attracts higher traffic noise criteria than it would as a local road. However, principal haulage routes must be declared by a regulatory authority such as Dungog Shire Council, after proper assessment of traffic noise and other impacts associated with such a declaration. There is no evidence that Dungog Shire Council has declared Station Street as a principal haulage route for Martins Creek Quarry and the narrow road pavement, which would have been widened to carry significant heavy vehicle traffic as part of a declaration, indicates no such declaration has ever been made. This conclusion is consistent with Council's understanding of the current consent conditions which require 70% of quarry product to be transported by rail, limiting the truck traffic on Station Street. Station Street is therefore a local road and should be assigned the correct noise criteria.

Section 5.7.6 and Table 12 present traffic noise criteria based in part on existing measured traffic noise levels, however as discussed previously the existing traffic noise levels were not correctly measured and reported. For example, while Figure 6 in the NIA is unclear, it appears traffic noise measurements were taken within 20 m from the Tocal Road pavement in Bolwarra Heights despite closest residences in this area being located further from the road. This, combined with the inclusion of existing quarry truck traffic noise in the measurements, presents a significantly elevated baseline. The traffic noise criterion for Tocal Road Bolwarra in Table 12, set 2 dBA above this elevated baseline, is therefore incorrect. Similar comments can be made for the other assessed residential areas along the existing and proposed haul route.

The NIA mentions a morning shoulder period, however the project proposes truck loading from 5:30 am which would result in trucks travelling north through Bolwarra before 5 am and through Paterson well before 5:30 am. Significant truck traffic is therefore proposed during the night period before 7 am, which cannot simply be dismissed as a shoulder period. The night traffic noise criteria, including sleep disturbance criteria, must be considered in the assessment for the period before 7 am.

RECOMMENDATION: Adjust traffic noise criteria based on correct baseline traffic noise levels.

Include night traffic noise criteria in Table 12 and assess noise from traffic before 7 am to the night criteria, rather than dismissing the period from before 5 am to 7 am as a shoulder period.

Add traffic related sleep disturbance criteria to the NIA.

2.2.5 Legacy Noise Issues

Section 5.8.4 discusses the potential difficulty in meeting INP noise criteria for a proposed expansion or other modification to an industrial development in cases where the existing development cannot meet relevant criteria. The NIA discussion would be correct if the existing development was meeting all relevant conditions of an existing consent, however that may not be the case given the current court case between Dungog Shire Council and Buttai Gravel Pty Ltd. It is not appropriate to use existing high noise levels to

justify future high noise levels, if the existing high noise levels are not permitted by the current consent either via production limits or noise criteria.

The community reports generally acceptable noise levels some years ago when production levels were significantly lower. The supposed 'legacy noise issues', if such issues are determined by DP&E to exist, have apparently only existed for a few years after many years free of such issues.

RECOMMENDATION: DP&E should consider whether legacy noise issues exist, and the extent of any issues, considering the currently unresolved question of existing quarry production levels compared to the current consent and the relatively recent nature of high operating and traffic noise levels. This question must be resolved in order to place predicted noise levels in their correct context.

2.3 Predicted Noise Levels

2.3.1 Operating Noise

Predicted noise levels from the quarrying, processing and loading activities on the site were calculated using noise model software based on the following input data:

Predicted terrain for various future stages – The NIA is silent on the ground surface types entered in the model, however it is reasonable to assume appropriate surface roughness parameters or types were adopted. The NIA comments on various noise barriers included in the model and presents a figure in Section 7.1 showing the approximate location of these barriers, however the figure is unclear, does not cover the entire site or extent of noise barriers and does not indicate the height or other design parameters of each barrier. The NIA comments on 8 m and 3 m barriers, however it is not clear where each barrier height applies and if there is physically sufficient space within the site for barriers up to 8 m high.

Earth barriers up to 8 m high will require significant construction effort and such barriers are generally located close to neighbouring residences. The construction fleet will operate, at least for a time, on the top of the barriers being constructed in full view of closest receptors, in contrast to operations which will occur behind the completed barriers. This contrasts with the NIA's claim in Section 1.2.3 that construction noise is similar to operating noise and does not require assessment.

RECOMMENDATION: The NIA should present clear figures showing the exact location, width and extent of proposed noise barriers and other data regarding height and/or RL for each barrier or section of barrier, for each assessed scenario or stage.

The NIA should properly assess construction noise levels as specifically required by the SEARs. As the NIA correctly states that the construction noise policy does not apply to extractive industries, construction noise levels require assessment to the INP noise criteria.

Predicted source locations – Table 14 in the NIA lists the noise sources included in each modelled scenario and the noise contour figures in Appendix B show some red cross symbols which presumably indicate source locations listed in Appendix D, however the NIA does not specify which source type is represented by each cross, the location of truck haul routes and area sources, and other parameters that are required to describe the noise model scenarios and reproduce the noise contours and noise level tables.

Section 5.7.2 states operational measures can be used to minimise noise from stripping operations, however no such operational measures are proposed.

RECOMMENDATION: The NIA should present clear figures and/or tables showing the exact location of modelled noise sources and haul routes, sound power levels for each source or route in octave bands and other data sufficient to reproduce the noise contours, for each assessed scenario or stage.

Details regarding all proposed operational noise control measures, perhaps in the form of a noise management plan and/or statement of commitments, is required to ensure the NIA reflects the proposed quarry management strategy and to demonstrate that practical management measures will achieve the stated noise levels and are technically and economically feasible.

Source sound power levels – Table 15 in the NIA lists the modelled sound power levels in dBA, however this is not sufficient to define the characteristics of each source. The source sound power spectra, in octave or 1/3 octave bands, is required to correctly calculate received noise levels as low and high frequency sounds behave quite differently over distance and barriers. In addition, not all of the listed source sound power levels are correct. For example, Table 15 lists a sound power level of 103 dBA for a Cat 988H, compared to manufacturer's data showing a sound power level of 114 dBA (or 111 dBA with an optional sound suppression kit). Similarly, a sound power level of 101 dBA is listed for a Cat 980H compared to manufacturer's data indicating a sound power level of 113 dBA. An extract from the manufacturer's specifications for each machine is attached to this report.

A large road truck is listed with a sound power level of 92 dBA, compared to a typical 108 dBA from this source which is 16 dBA higher. These errors have a corresponding effect on received noise levels, which means the NIA is underpredicting received noise levels by up to 16 dBA but more likely around 10 dBA.

There are a number of differences between the listed sound power levels in Table 15 and in the equivalent tables in Appendix D, for example for the Rotary crusher building west wall, the Jacques crusher building wall (south vs west) and the rail loader sound power level.

In Year 5, the primary crusher building is modelled with a sound power level of 76 dBA according to Appendix D, however Section 7.1 simply says "engineering noise control treatments" when referring to this building. No indication of exactly what engineering controls are proposed to achieve a reduction of approximately 45 dBA, from 121.5 dBA to 76 dBA, is included in the NIA.

RECOMMENDATION: The NIA should present octave or 1/3 octave sound power data for each modelled source and ensure all modelled sound power levels are realistic and achievable by actual plant and equipment operating or proposed to operate within the quarry. If the listed sound power levels result from on-site noise measurements as claimed in the NIA, then the on-site noise measurements should be repeated using the correct procedure with plant and equipment operating in a more representative manner.

The tables of sound power levels in the NIA and appendices should be corrected to be consistent with the actual operating sources and the noise model input files.

Detailed engineering drawings of proposed acoustic treatments are required to justify proposed noise reductions in the order of 45 dBA from some sources such as the primary crusher building, as such reductions are likely to be very difficult to achieve and can certainly not be achieved by installing steel cladding or other common industrial building materials. The drawings should include details regarding personnel and equipment access, acoustically controlled ventilation, vibration isolation and other aspects of the design required to achieve such significant noise reductions. The NIA should also describe management measures, such as keeping doors and any windows closed and maintenance of silencers and other important acoustic elements, to ensure the design noise reductions are achieved and maintained over the long term.

Modelled atmospheric conditions – Section 3.1 of the NIA states winds are not significant according to Bureau of Meteorology data, however no evidence is presented to support this claim. Sections 3.1 and 6.1.1 state the noise model considered the effect of noise enhancing winds from the south east, north east and west, however no justification for these wind directions is included and potentially affected receptors exist in other directions not covered by these wind directions. Section 3.1 states drainage flows are not a feature of the area, however no evidence is provided to justify this statement.

RECOMMENDATION: The NIA should present a proper assessment of weather conditions in the area according to the INP including winds in all time periods, temperature inversions and drainage flows.

The noise model results should be updated to reflect the revised weather conditions (and other important parameters such as source sound power levels discussed in this report).

Confirmation of the predicted noise levels – A request for electronic copies of noise model input files, or compatible equivalents, was made over 1 month before the end of the EIS exhibition period. The purpose of this request was to set up an equivalent noise model and confirm the calculated noise levels in the EIS, particularly due to the lack of relevant data in the EIS as described above. This request was made with the assistance of DP&E's Mr Thomas Watt. Noise model files were received on 21 November 2016, 3 days before the end of the exhibition period, and will require a supplementary submission after the exhibition period to report on any issues.

RECOMMENDATION: The NIA author(s) should be required to make all requested files available in a timely manner, although the time to do this has now passed. DP&E staff should consider commissioning an independent review and confirmation of the noise model inputs given the significant issues with various input data described above and the high residual noise impacts predicted in the NIA compared to INP criteria at some receptors.

Modifying factors – The NIA does not correctly assess, or at least does not demonstrate correct assessment, of modifying factors defined in the INP that have significant potential to apply to the development, including tonal and low frequency noise.

RECOMMENDATION: The NIA should ideally present 1/3 octave predicted noise levels to demonstrate quarry noise will not be tonal as defined in the INP. This should specifically include reverse alarms fitted to mobile machines which are not currently mentioned or assessed in the NIA.

The NIA must predict noise levels in octave bands or at least predict both dBC and dBA levels at all receptors to determine the need for the low frequency modifying factor required by the INP.

Noise contour figures – the noise levels represented by the contours are unclear, as the colour order shown in the contours does not seem to match the colour order indicated in the legends.

RECOMMENDATION: The NIS should show recalculated noise contours after correcting the sources etc as described above, then ensure the contour colours match the legend colours or label the contours with the dBA values to resolve ambiguous noise levels.

High predicted noise levels – In some cases, predicted noise levels are more than 5 dBA over relevant INP PSNLs with proposed barriers and other control measures in place, however no assessment of additional or alternative noise control measures is included in the NIA. The NIA therefore does not demonstrate that all feasible and reasonable mitigation measures have been implemented, therefore there is no justification for predicted noise levels over the PSNLs. This issue, combined with the calculated noise levels being significantly underpredicted as discussed above, is a strong indicator that the project represents a production intensity that is incompatible with the short buffer distances to closest residences.

Section 6.4.2 of the NIA includes significant discussion on the predicted noise levels, in general concluding compliance with relevant criteria will occur although with some predicted exceedances. However, when the noise model is updated with the correct sound power levels and received noise levels recalculated, this

section must be rewritten to acknowledge significant exceedances of the criteria at closest residences which will then trigger further investigation into additional noise mitigation measures as required by the INP.

It is likely that sufficient noise mitigation and management measures can be adopted to result in substantial compliance with the criteria however the EIS, *as it currently stands*, does not correctly demonstrate compliance or near-compliance can be achieved. The project, *as it is currently described*, does not appear to be approvable in its current form once noise levels are correctly recalculated.

2.3.2 Road Traffic Noise

The NIA reports a difference of less than 1 dBA between measured and calculated traffic noise levels, presumably at the noise logger locations, which indicates the CoRTN noise model has been correctly applied. However, the incorrect baseline traffic noise levels, incorrect traffic noise criteria adopted for the day period, lack of comparison between calculated noise levels and the night traffic noise criteria, no assessment of other haul routes such as Butterwick Road and Brandy Hill Drive, no assessment of cumulative traffic noise levels with traffic associated with the Brandy Hill Quarry project and lack of assessment of traffic related sleep disturbance are all issues that required significant revision of the NIA.

The revised NIA is expected to show significant exceedances of the traffic noise criteria, in particular the +2 dBA relative criteria, at a number of residences along the various haul routes and is therefore expected to include an assessment of feasible and reasonable mitigation measures. Mitigation measures applied to individual residences or road realignment works may not be reasonable or feasible, however other measures such as a later start time for truck loading to avoid traffic related sleep disturbance (perhaps combined with an off-site product stockpile adjacent to an arterial road that allows early morning truck transport away from residential areas) and a significant increase in product transport by rail are examples of mitigation measures that should be considered.

RECOMMENDATION: The NIS should be revised to show correct baseline traffic noise levels in the absence of existing quarry traffic.

The NIS should recalculate noise levels at receptors with and without proposed quarry traffic to indicate the correct increase in traffic noise levels due to the quarry, particularly for comparison with the 'relative increase' traffic noise criteria.

The NIS should assess traffic related sleep disturbance to various representative receptors along the haul routes.

The NIS should consider traffic noise levels from all proposed routes, not just through Paterson and Bolwarra, including cumulative traffic noise levels for routes common to Brandy Hill Quarry traffic.

The NIS should comprehensively consider mitigation measures including truck transport times, the proportion of product despatched by rail, any alternative transport routes and other measures to show all feasible and reasonable mitigation measures have been applied to the project.

2.3.3 Rail Traffic Noise

The circumstances associated with the proposed rail siding extension are unclear. Section 2 of the NIS states the extended rail siding will only be implemented if there is demonstrated additional demand for product transported by rail, however the same section also states the current short siding is inefficient and is likely to prevent a significant increase in rail transport volumes. These two statements indicate a Catch-22 situation which will result in rail volumes remaining low unless a concerted effort into seeking opportunities for rail transport is made. The project includes train loading 24 hours per day and acknowledges significant resulting noise impacts at Station Street residences, however there is no evidence to suggest that this will result in lower average daily truck volumes through local communities including Paterson and Bolwarra. This aspect of the project will therefore most likely result in greater noise impacts.

Apart from the rail loading issue, the NIA is correct that train movements to and from the quarry will result in only a minor increase in average daily rail noise levels at receptors along the route.

The NIA proposes a significant noise wall be constructed adjacent to the rail siding to reduce loading noise to nearest residences, however an assessment of construction noise associated with this wall is not included despite the wall being proposed close to residences.

RECOMMENDATION: The NIS should more clearly justify the proposed 24 hour rail loading and associated significant noise impacts to nearby residents in the more sensitive night period, ideally including guaranteed reductions in truck numbers on local and regional roads to reduce impacts on the community as a whole, or at least to avoid an increase in noise impacts as currently proposed.

The NIA should assess construction noise associated with the proposed rail siding noise wall, and associated with the proposed extension of the rail siding, to nearest residences as specifically required by the SEARs.

3. BLASTING

The EIS includes a blasting report in Appendix I, prepared by Peter Bellairs Consulting Pty Ltd. A review of the blasting report raises no significant comments or issues.

The Martins Creek and Vacy communities, particularly in the area of View Street and Wayaka Close generally north of the quarry, perceive blasting impacts as unacceptable despite the published blast monitoring data indicating compliance with relevant criteria. The significant difference between the community's perceptions, and what would conventionally be expected from the community given the acceptable blast monitoring results, raises the question of potential reasons for this difference. The following options seem possible although not necessarily likely:

Option 1 - The blast monitoring data at one or more locations may be incorrect and significantly understate vibration and/or overpressure levels. This option would require the monitoring instruments to be incorrectly calibrated, operated or installed, all of which appear unlikely assuming a competent blasting contractor.

It is noted that blast monitoring results at 338 Dungog Road, approximately 640 m from the centre of the extraction area, are usually only slightly higher than monitoring results at Wayaka Close approximately 1350 m from the extraction area. Based on the difference in scaled distance to the two monitoring locations, vibration levels at 338 Dungog Road are expected to be approximately 3.3 times greater and overpressure levels are expected to be approximately 10 dB higher. Monitoring data for 2016 indicates 338 Dungog Road vibration levels are 1.6 times higher on average, while overpressure levels are 13 dB higher on average. The overpressure differences are consistent with expectations, however the vibration levels are not. There may be significant differences in ground conditions (such as soil type and depth) between the two locations, therefore this unexpected result does not necessarily indicate errors in monitoring data.

Independent monitoring of a blast event on 17 November 2016 just after 2 pm was completed at 4 Wayaka Close in an attempt to resolve this option, using an Instantel Minimate Plus, serial number BE12695 hired from Global Acoustics, installed in the back yard at least 3 m from the southern façade of the residence. Following is a comparison of results reported by the proponent and independently obtained:

Parameter	Vibration mm/s PPV	Overpressure dBL pk
Proponent	1.88	99.2
Bridges Acoustics	1.71	100.0

These results are consistent, indicating the published blast monitoring results are reliable at least for this blast and presumably for all other blasts.

Option 2 - The community may be unusually sensitive to blasting impacts. This is possible given the community's opposition to the quarry, however the reported impacts such as items falling from shelves during a blast event and significant reactions from residents and visitors indicates real rather than just perceived impacts. This option is difficult to determine and resolve.

Option 3 - The residential buildings in this area may be unusually sensitive to vibration, due to construction materials and/or methods or issues with foundation design or construction, and may be unusually susceptible to cracking or other damage. This option is more likely to apply to a few individual residences rather than a large number of them, therefore appears unlikely at first glance. A full and independent geotechnical and structural investigation of multiple residences would most likely be required to resolve this option.

Appendix I of the EIS also includes a geology and blast vibration assessment prepared by VGT Pty Ltd which reports differences in surface or near-surface rock types at various locations within the quarry and the nearby residential area. The report concludes there is no direct geological linkage between the quarry and residents, which was meant to imply there was no particular or unusual reason for ground vibration to transmit from the blast sites to residences. However, it is relatively common to find different rock types at various locations around a quarry or other site and ground vibration can effectively transmit through rock type boundaries, particularly where the adjacent layers are formed from rock of a similar density and strength and there are no large faults or other discontinuities that can create subsurface voids or other features that affect vibration propagation. Data presented in the report therefore does not necessarily indicate an unusually strong or conversely an unusually weak geological connection between the quarry and residences.

The unexpected difference between measured ground vibration levels at Dungog Road and Wayaka Close described above, that is generally inconsistent with the differences in distance from the quarry to each monitoring location, indicates there is a stronger geological connection between the quarry and Wayaka Close than there is between the quarry and Dungog Road assuming the blast monitoring results are valid. Whether the Wayaka Close connection is stronger than normal, or whether the Dungog Road connection is weaker than normal, cannot readily be determined.

RECOMMENDATION: The proponent should be required to further investigate blasting issues to resolve the community's concerns, either by commissioning independent blast monitoring to confirm vibration and overpressure levels and/or by commissioning independent investigations into geotechnical and structural issues for a number of the apparently worst affected residences.

An inspection of two of the blast monitoring locations on 17 November 2016 indicates:

- The Dungog Road monitoring location is on the road reserve adjacent to the driveway of 338 Dungog Road, approximately 50 m further from the quarry than the residence, and on what appears to be soft deep soil at the base of a large tree. All of these factors have the potential to affect, and most likely reduce, measured vibration levels. Assuming residents allow access to their property for blast monitoring, a better location would be on or near the driveway closer to the residence, on harder ground away from large trees, to ensure representative monitoring results are obtained.
- The Wayaka Close monitoring location is on the footpath in front of 4 Wayaka Close near the intersection with View Street, according to adjacent residents. An inspection of this site, at the exact location residents advised the monitor was located an hour previously, indicated a lack of obvious ground disturbance. In particular, holes left by geophone ground spikes could not be found and no disturbance indicating the spike holes were filled in was noted. In contrast, the Dungog Road monitoring location showed obvious fresh ground spike holes and other minor ground disturbance after the blast on 17 November 2016. The lack of visible ground disturbance at Wayaka Close indicates the geophone was not correctly fixed to the ground which would significantly affect vibration monitoring

results at this location, however no definite conclusions can be drawn as the monitor was not directly observed.

RECOMMENDATION: The proponent should ensure existing blast monitoring procedures are appropriate and ensure adequate training of monitoring personnel to avoid potentially incorrect monitoring results.

3. VIBRATION

Vibration from blasting is discussed in the EIS and above, however vibration from quarry vehicles travelling on public roads has not been addressed in the EIS but has been mentioned as a significant issue by some residents of homes close to the road. There is no information in the EIS to determine whether road related vibration is an issue compared to relevant criteria and, if so, what mitigation measures would be appropriate.

RECOMMENDATION: The proponent should measure existing ground vibration levels produced by heavy vehicles travelling on public roads, particularly at the closest and worst affected residences, to determine compliance with criteria and likely future compliance. In the event of existing and/or predicted future non-compliance with criteria, the EIS should propose mitigation measures.

5. CONCLUSION

This brief summary of issues identified during an acoustic review of the Martins Creek Quarry EIS has indicated significant issues exist with a high potential to materially affect the results and conclusions of the EIS. A number of conclusions regarding no or minimal acoustic impact are based on erroneous data or assessment methods, where in fact there is a high chance of significant and unacceptable impacts at one or more receptor properties from the project as currently proposed.

It is clear that the project has the potential to provide environmental benefits to some residents, particularly those on Station Street Martins Creek who are currently exposed to noise from both the processing plant and truck movements. However the potential benefits for these residents would, at least in part, be offset by the proposal to load trains at any time of the day or night, with subsequent noise and potentially sleep disturbance impacts to these same residents.

Other residents such as those on Dungog Road north of Grace Avenue, who currently receive minimal traffic noise from quarry trucks, will receive a significant increase in both site and traffic noise levels due to the proposed access direct to Dungog Road.

Many residents should expect a progressive increase in noise and blasting impacts as production increases to the proposed level of 1.5 Mtpa, particularly those along the primary haul route through Paterson and Bolwarra who would also receive significant truck noise earlier in the morning than at present.

Please contact the undersigned for any further information or discussion.

Yours faithfully,

MARK BRIDGES BE (Mech) (Hons) MAAS
Principal Consultant

APPENDIX A - Extract from Caterpillar Wheel Loader Specifications

The following extracts from the Specifications for the Caterpillar 980H and 988H Wheel Loaders, including only the front page and the relevant page showing highlighted external noise levels from each document, have been included to support Section 2.3.1 of this review report.

The Caterpillar webpages describing each machine are available at:

Caterpillar 980H:

http://www.cat.com/en_AU/products/new/equipment/wheel-loaders/medium-wheel-loaders/16932909.html

Caterpillar 988H:

http://www.cat.com/en_AU/products/new/equipment/wheel-loaders/large-wheel-loaders/17770689.htm

The original Specification documents from which the attached extracts were obtained were downloaded from:

Caterpillar 980H:

http://s7d2.scene7.com/is/content/Caterpillar/C10132874

Caterpillar 988H:

http://s7d2.scene7.com/is/content/Caterpillar/C609127

For each machine the second link allows downloading of the Specification document, however the resulting file is missing an extension of .pdf due to apparent errors in Caterpillar's website. Manually adding this extension to each file after it is downloaded allows it to open in Adobe Reader or another pdf reading program.

980H
Wheel Loader

Engine Model	Cat® C15 ACERT™	
Maximum Net Power (1,800 rpm)		
ISO 9249/SAE J1349 (metric)	264 kW	359 hp
ISO 9249/SAE J1349 (imperial)	264 kW	354 hp
Bucket Capacities	4.31-8.20 m^3	5.64-10.73 yd^3

Operating Weight	29 945 kg	65,999 lb

• For 5.4 m^3 (7.0 yd^3) general purpose bucket with BOCE.

Sound

- The sound values indicated below are for specific operating conditions only. Machine and operator sound levels will vary at different engine and/or cooling fan speeds. The cab was properly installed and maintained. The tests were conducted with the cab doors and the cab windows closed. Hearing protection may be needed when the machine is operated with a cabin that is not properly maintained, or when the doors and/or windows are open for extended periods or in a noisy environment.
- The declared dynamic operator sound pressure level for a standard machine configuration, measured according to the procedure specified in "ISO 6396:2008" is 75 dB(A) with the cooling fan speed set at maximum value.
- The declared dynamic exterior sound power level for a standard machine configuration, measured according to the procedures specified in "ISO 6395:2008" is 113 dB(A) with the cooling fan speed set at maximum value.
- The declared average exterior sound pressure level for a standard machine configuration, measured according to the procedure specified in "SAE J88:2013 – Constant Speed Moving Test," is 77 dB(A). The measurement was conducted under the following conditions: distance of 15 m (49.2 ft), moving forward in second gear ratio with the cooling fan speed set at maximum value.

Sound Level Information for Machines in European Union Countries and in Countries that Adopt the "EU Directives"

- The declared dynamic operator sound pressure level for a standard machine configuration, measured according to the procedures specified in "ISO 6396:2008," is 72 dB(A) with a cooling fan speed set at 70 percent of the maximum value.
- The sound power level that is labeled on the machine is 109 Lwa. The measurement was made according to the test procedures and conditions that are specified in the European Union Directive "2000/14/EC" as amended by "2005/88/EC."

Service Refill Capacities

Fuel Tank – Standard	453 L	120 gal
Cooling System	83 L	22 gal
Crankcase	64 L	17 gal
Transmission	62 L	16 gal
Differentials and Final Drives – Front	87 L	23 gal
Differentials and Final Drives – Rear	87 L	23 gal
Hydraulic Tank	125 L	33 gal

988H
Wheel Loader

Engine		
Engine Model	Cat® C18 ACERT®	
Gross Power	414 kW	555 hp
Net Power – ISO 14396	397 kW	540 hp
Net Power – EEC 80/1269	373 kW	501 hp

Operating Specifications		
Rated Payload	11.4 tonnes	12.5 tons
Operating Weight	50 144 kg	110,549 lb
Buckets		
Bucket Capacities	6.4 m^3-7.7 m^3	8.3 yd^3-10 yd^3

Buckets

Bucket Capacities	6.4 m^3-7.7 m^3	8.3 yd^3-10 yd^3
Max. Bucket Capacity	7.7 m^3	10 yd^3

Axles

Maximum Single-Wheel Rise and Fall	568 mm	22.4 in
Front	Fixed	
Rear	Oscillating ±13°	

Brakes

Brakes	Meet SAE ISO 3450:1996

Cab

Cab – ROPS/FOPS	Meets SAE and ISO standards
Sound Performance	Meets ANSI, SAE and ISO standards

- Cat cab with integrated Rollover Protective Structure (ROPS) and Falling Object Protective Structure (FOPS) is standard.
- ROPS meets SAE J1040 APR99 and ISO 3471:1994 criteria.
- FOPS meets SAE J231 JAN81 and ISO 3449:1992 Level II criteria.
- The operator sound exposure Leq (equivalent sound pressure level) measured according to the work cycle procedures specified in ANSI/SAE J1166 OCT98 is 76 dB(A), for the cab offered by Caterpillar, when properly installed, maintained and tested with the doors and windows closed.
- Hearing protection may be needed when operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in noisy environment.
- The exterior sound pressure level for the standard machine measured at a distance of 15 m (49.2 ft) according to the test procedures specified in SAE J88 JUN86 mid-gear-moving operation is 81 dB(A).
- The machine sound power level is 114 dB(A) measured according to the test procedures and conditions specified in ISO 6395:2008 for standard machine configuration. The measurement was conducted at 70 percent of the maximum engine cooling fan speed.
- The machine sound power level is 111 dB(A), measured according to the test procedures and conditions specified in ISO 6395:2008 for a sound suppression machine configuration. The measurement was conducted at 70 percent of the maximum engine cooling fan speed.
- The operator sound pressure level is 72 dB(A), measured according to the test procedures and conditions specified in ISO 6306:2008 for a sound suppression machine configuration. The measure was conducted at 70 percent of the maximum engine cooling fan speed.

Steering

Steering	Meets SAE and ISO standards
Total Steering Angle	86 Degrees

- Full hydraulic, load-sensing steering system meets SAE J1511 FEB94 and ISO 5010:1992 specified standards.
- Center point frame articulation.
- Front and rear wheels track.

Loader Hydraulic System

Main Hydraulic System Output at 2,010 rpm and 6900 kPa (1,000 psi)	492 L/min	130 gal/min
Relief Valve Setting	35 000 kPa	5,075 psi
Cylinders, Double Acting: Lift, Bore and Stroke	220 × 911 mm	8.7 × 35.9 in
Cylinder, Double Acting: Tilt, Bore and Stroke	220 × 1770 mm	8.7 × 69.7 in
Pilot System, Gear-Type Pump Output at 2,010 rpm and 2500 kPa (363 psi)	76 L/min	20.1 gal/min
Relief Valve Setting (low idle)	2400 kPa	348.1 psi

- With SAE 10W oil at 66° C (150° F).

BRIDGES ACOUSTICS
ABN: 73 254 053 305

78 Woodglen Close
P.O. Box 61
PATERSON NSW 2421

Phone: 02 4938 5866
Mobile: 0407 38 5866
E-mail: bridgesacoustics@bigpond.com

5 December 2016
Ref: J0232-01-R2

Martins Creek Quarry Action Group
P.O. Box 500
PATERSON NSW 2421

Attn: Mr James Ashton

Dear James,

RE: ACOUSTIC REVIEW OF THE ENVIRONMENTAL IMPACT STATEMENT, MARTINS CREEK QUARRY – SUPPLEMENTARY REPORT

1. INTRODUCTION

The Environmental Impact Statement (EIS) for Martins Creek Quarry, prepared by Monteith & Powys Pty Ltd and various sub-consultants in September 2016, was placed on public exhibition by the Department of Planning & Environment (DP&E) for the period 13 October to 24 November 2016. A report describing a review of the EIS was prepared for the Martins Creek Quarry Action Group (MCQAG) on 24 November 2016, however at that time not all acoustic aspects of the EIS could be reviewed due to the proponent's delays in providing additional requested data related to the site noise model used to predict quarry operating noise levels to nearby receptors. This supplementary report describes additional comments and recommendations arising from a review of the noise model and should be read in conjunction with the previous review report.

2. NOISE

The EIS includes a Noise Impact Assessment (NIA) report in Appendix I, prepared by RCA Acoustics. This section presents comments and recommendations arising from a further review of that report.

The following section headings appear to be numbered incorrectly, however the sections have retained their earlier numbering from the 24 November 2016 review report to assist in reading the two reports together. The majority of sections in the previous report have been omitted from this supplementary report as no new information or recommendations have arisen since the previous report was prepared.

2.3 Predicted Noise Levels

2.3.1 Operating Noise

Predicted noise levels from the quarrying, processing and loading activities on the site were calculated using noise model software based on the following input data:

Source sound power levels – The previous review report noted not all of the listed source sound power levels in the NIA are correct and provided some examples. Spot checks of the noise model files provided by the proponent have indicated that the lower sound power levels have been used in the NIA, confirming the previous conclusion that the noise model under-predicts noise levels from the quarry.

An example to clearly illustrate this point relates to the proposed new access road direct to Dungog Road, particularly when comparing noise levels indicated by the contours to traffic noise levels reported in the NIA. The majority of noise contour figures in Appendix B of the NIA include noise from truck traffic on the access road from the quarry to Dungog Road, with the obvious exception of the 'existing operations' contours as that road does not currently exist. The best figures to determine predicted noise levels from the access road only are 'Year 5 morning despatch' and most figures for Years 10, 15 and 20 which include quarry plant operating in areas fairly remote from Dungog Road.

The Year 5 morning despatch figure, including a 3 m/s NW wind, indicates a noise level of less than 35 dBA at the nearest residence to the south of the access road, which is 256 Dungog Road and known as Receptor ID 40 according to Table 1 in Section 4.2.1 of the NIA. According to Table 17A, Receptor ID 40 is expected to receive 32 dBA for the Year 5 early morning product despatch scenario which is consistent with the contours. This receptor is approximately 230 m south of the access road, although this distance has been scaled from the contour figures so is subject to a tolerance of perhaps +/-30 m.

Section 6.5.2 of the NIA presents calculated traffic noise levels, from truck and other traffic on Dungog Road, to various receptors. As Dungog Road and the quarry access road carry exactly the same trucks, noise levels from the access road and from Dungog Road would be similar assuming vehicle speed and other relevant parameters are similar. However, Table 25 indicates proposed traffic noise levels from trucks alone, calculated from the difference between the existing and predicted traffic noise levels in the table after swapping the predicted results at 150 m and 300 m as highlighted in bold font below as they were obvious entered into NIA Table 25 in the wrong order, are:

- 256 Dungog Rd 30 m 59.5 – 53.0 = 58.4 LAeq
- 281 Dungog Rd 150 m **52.9** – 46.9 = 51.6 LAeq
- 279 Dungog Rd 300 m **50.0** – 43.9 = 48.8 LAeq

A receptor at approximately 230 m from Dungog Road would receive approximately 50 LAeq, from simple interpolation of the traffic noise levels above, which is 18 dBA higher than at Receptor ID 40 at 230 m from the access road indicated in the noise contour figures as described above. This is approximately equal to the 16 dBA under-prediction reported for road trucks in the previous review report, with a sound power level of 92 dBA adopted for road trucks in the NIA compared to a typical sound power level of 108 dBA for this source type.

While it is true that vehicle speeds and other relevant parameters may not be the same on the access road and on Dungog Road, an error of 18 dBA is far too large to be explained by any differences in input assumptions.

RECOMMENDATION: With such a large error demonstrated above as an example, and other example errors in model input data described in the previous review report, all noise model results in the NIA are demonstrated to be unreliable and should be discarded. The entire NIA should therefore be rejected.

3. CONCLUSION

The additional information presented above clearly demonstrates significant failure of the NIA to predict noise levels and noise impacts from the project to nearby sensitive receptors. A demonstrated difference of approximately 18 dBA in road truck noise levels reported in the NIA, due to the same trucks travelling on the proposed access road and on Dungog Road, cannot be explained by differences in reasonable assumptions such as vehicle speed, rounding errors or other factors. The difference is primarily related to errors in source sound power levels entered into the noise model and, with other sound power errors also identified and previous reported, it is clear that all noise model results are unreliable and generally under-predict noise levels from the project.

The NIA concludes noise levels from the project are generally acceptable at most receptors, however updated noise levels from a significantly revised NIA are likely to show unacceptable exceedances of relevant criteria at a number of residences near the quarry and along the road transport route through Paterson. Mitigation measures to minimise these criteria exceedances have the potential to completely change the quarry plan, for example by sterilising some currently proposed extraction areas close to receptors or requiring larger noise barriers in the form of earth mounds which consume additional ground area, which may have follow on effects on the economic, ecology, visual impact, air quality and other specialist studies and therefore require the entire EIS to be rejected.

Alternatively, in the absence of a significant change to the project to mitigate the noise impacts, a number of rural residential lots are likely to be drawn into a zone of affectation for the project and require application of the Voluntary Land Acquisition and Mitigation Policy. This outcome would at least affect the economic and social impact studies in the EIS and is also likely to result in the EIS being rejected.

Please contact the undersigned for any further information or discussion.

Yours faithfully,

MARK BRIDGES BE (Mech) (Hons) MAAS
Principal Consultant

Appendix 9 Geology & Resource Assessment – Peer Review

PROPOSED MARTINS CREEK QUARRY EXPANSION

REVIEW OF REPORTED GEOLOGY IN THE EIS

At the request of the MCQAG I have undertaken a review of the geology reporting in the Martins Creek quarry expansion EIS. Reading the geological documents two key issues are evident. These are discussed below.

1. **Geology and Blast Vibration Assessment**

This report has two conclusions. The first states:

> The geological assessment showed that there was no direct geological linkage between the quarry and residents, which may create a direct pathway for ground vibration.

The only way for there to be no direct geological linkage would be for the quarry to be suspended in space.

The type of rock does not matter. Blast vibrations travel through all rocks regardless of lithology. It is an unalterable fact that the closer and bigger the blast, the bigger the ground vibrations.

The second conclusion is that a shrink swell test indicates a moderate level of cracking during shrinkage. One the basis of one test this really is an inconclusive statement.

2. **Martins Creek Andesite Quarry Geology Assessment**

Having noted the conclusions of the Geology and Blast Vibration Assessment concern thus arose as to whether statements of the same genre might occur in the main geological assessment prepared for the proponent.

The key feature of the geological assessment is the determination of the reserves of Andesite remaining in the site.

The report states:

> The calculated volume of Latite is 14.1 million cubic metres or 38.07 million tonnes.

This has been checked using a manual method for the determination of the volume of an irregular body as set out in the Field Geologists' Manual published by the Australasian Institute of Mining and Metallurgy, Monograph 9, Edition 3.

The writer also used this method for the determination of the rock reserves for the Diamond Hill Inquiry conducted by the State Pollution Control Commission in 1979 when assisting that Inquiry as a Commission Scientific Officer.

That Inquiry found that the proponent had overstated the reserves, and further that there was insufficient material available to justify a quarry operation.

In determining the likely reserves at Martins Creek Quarry 6 parallel cross sections, spaced 200m apart, were prepared using the proponent's supplied data. Borehole data was checked, the extent of the Andesite (or Latite) body checked, and the base of the Latite body, as shown in Figure 5 checked against the borehole records.

The cross sections were oriented down dip of the dipping latite body, and prepared with vertical and horizontal scales equal. The volume of latite was then calculated for adjacent cross sections. A density factor of 2.61 was applied to determine the tonnage of rock. It is noted that the proponent supplied the figure of 2.7 for reporting of reserves.

The density range given in the field Geologists' Manual for Andesite is between 2.4 and 2.8 with an average of 2.61. It would be unusual for an entire rock mass to maintain a higher end value across a deposit so the average value of 2.61 was selected and used, rather than the higher 2.7 value used by the proponent. In any event the difference is 3.3%, hardly significant for reserves estimation.

The calculated areas for each cross section are shown in Table 1.

Cross Section Number	Area (m^2)
1	6280
2	8820
3	3875
4	8550
5	None
East Pit 4	1830
East Pit 5	4180
East Pit 6	7090

Table 1 : Areas of cross sections used to determine likely rock reserves

The calculated amount of Andesite (or Latite) rock was determined to be 14 million tonnes. The West Pit area contains 10.6 million tonnes of potentially quarryable rock, while the East Pit area contains 3.4 million tonnes. There is an area where the rock reserves in the two pits adjoin. This has been allowed for in area calculations.

The extreme Southwest corner of the West Pit was disregarded due to the close proximity of houses and the railway line. These are undoubtedly why the rock in this corner was left by previous operators.

It is also noted that the proposed Stage 7 area in Figure 5 of the EIS contains no Andesite. It is also noted that proposed Stage 3 in the West Pit has been largely quarried out.

There is a small area where the two pits adjoin, that according to drill logs contains a great thickness of Andesite than occurs in the rest of the deposit. It is shown in EIS Figure 5. In the experience of the writer working in other quarries in volcanic rocks, such thickened zones often contain inferior rock. In any event the area has been treated as containing sound rock.

Conclusions

Since the calculated tonnage of rock is significantly different from that provided in the EIS I would recommend that this be thoroughly reviewed by an independent expert in reserves assessment.

In the event that the above reserves determination is in the correct "ball park" there are insufficient reserves to justify a 25 year operation at 1.5 million tonnes per annum.

With regard to the blasting vibration assessment I recommend that this report be set aside.

Graham Holt B Sc (Hons), M Eng Sci. F AusIMM

22 November 2016

(The author is retired after 50 years experience in exploration geology, quarrying, environmental impact assessment, environmental reporting, marine geotechnical investigations, geotechnical engineering and geophysics in Australia, New Zealand, S W Pacific, South Africa and Thailand.)

Appendix 10 Community Survey

Martins Creek Quarry Action Group PO Box 500 Paterson NSW 2421 T: 02 4938 5873 www.mcqag.org

MCQAG
Martins Creek Quarry Action Group

Community Attitudes towards the Martins Creek Quarry Proposal

Report prepared by:

Martins Creek Quarry Action Group (MCQAG)

August, 2015

1.0 Introduction and Methodology

This report provides a summary of the key outcomes of an online survey undertaken by local residents in relation to the Martins Creek Quarry Project. The survey was developed to document community perceptions and attitudes towards the Project and Daracon (the company), with specific objectives further defined below:

- To determine how Daracon and the Martins Creek Quarry operation are currently perceived by the community;
- To identify key perceived issues and impacts associated with the proposed project;
- To identify the issues of most concern to the community, to assist Daracon (and their consultants) in prioritising and addressing these issues within the environmental assessment process;
- To gain a better understanding of the community's views on how Daracon could work more effectively with the community in relation to their operations and the proposal.

The online survey was administered using Survey Monkey as a platform and was posted across the months of April to August 2015. The survey consisted of 25 items across the following topic areas:

- Top of mind associations with the company (Daracon)
- Attitudes towards the company and its activities (social and environmental), including identification of strategies to improve company-community relationships;
- Knowledge of the Project
- Support for the proposed Project
- Perceived Community issues in relation to the Project
- Degree to which Daracon's activities affect the community
- Recall of local community contributions made by Daracon
- Focus areas for future community contribution by Daracon
- Further information requests

The survey was developed to ensure that the company and other key government agencies (local and state) are fully aware of the issues of relevance and importance to the community; and for inclusion and consideration of these issues in the planning and assessment process for the Project.

It is usually the case that a survey of this nature would be undertaken as part of the Social Impact Assessment for the Project, but in the absence of this being undertaken by Daracon and its consultants, the Martins Creek Quarry Action Group (MCQAG) have developed and implemented the survey themselves.

An online survey method has a number of advantages and disadvantages as summarised in Table 1.

Table 1. Advantages and disadvantages of an online survey method

Advantages	Disadvantages
Ease of data gathering	Absence of interviewer
Minimal costs	Inability to reach certain groups within the community e.g. those not familiar with use of the internet, the elderly, those who do not have good internet access
Automated data input and handling	
Convenience for respondents	
Flexibility of survey design	

The MCQAG have had to utilise this method, instead of other survey methods e.g. telephone survey, largely due to cost. The Group is a no-for-profit community interest group with limited funds.

A total of 82 respondents completed the survey. Survey respondents were drawn from around the Dungog, Maitland and Port Stephens Local Government Areas (LGAs). The following figure illustrates the percentage of response by area. Paterson, Martins Creek and Vacy were the towns most represented across the survey sample.

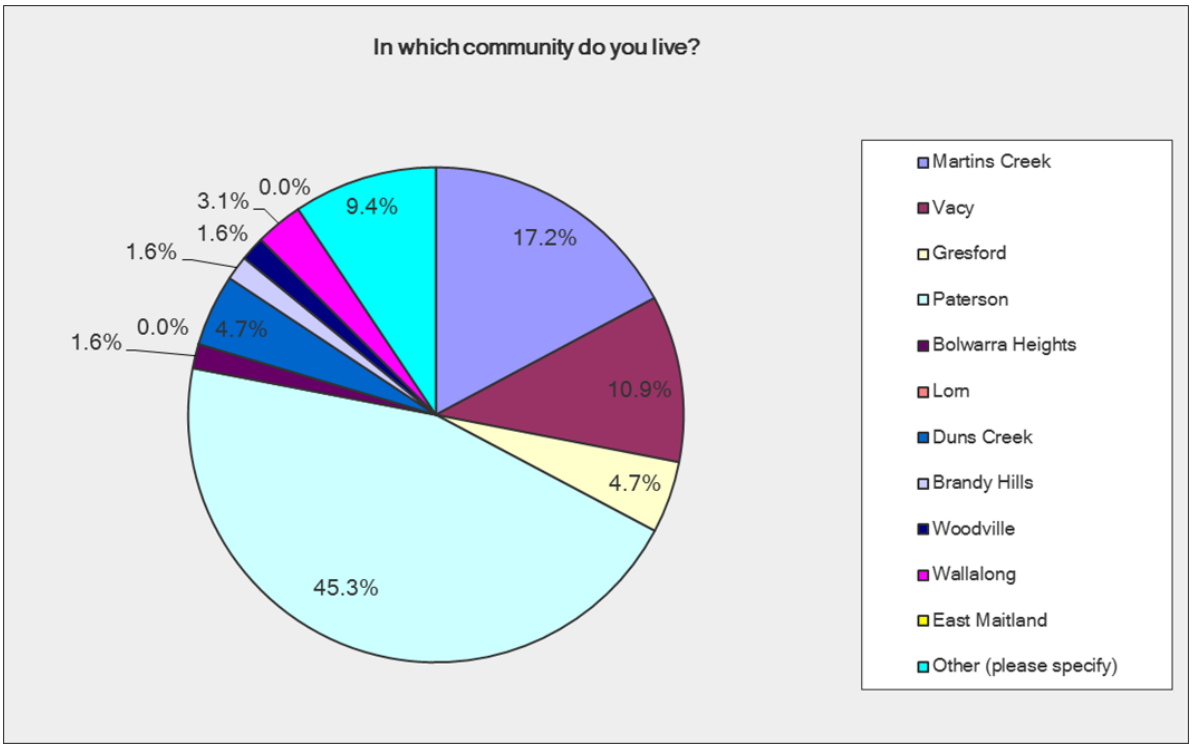


Figure 1. Town/Suburb location of survey respondents

Almost equivalent numbers of males (46.9%) and females (53.1%) participated in the survey. Survey respondents were in the 35-64 year age cohort (70.3%), with lower proportions of respondents from the 18-34 year age group (10.9%) and the 65 years plus age group (18.8%). The majority of survey respondents had not previously worked in the resource sector (76.6%), with the remainder currently working in the sector (9.4%) or having had previous engagement in the sector in

the past (14.1%). Only one participant that completed the survey worked for Daracon. Respondents had resided in their respective communities for 1 to 55 years with an average of 16 years residence, indicating strong attachment to the locality.

2.0 Survey Outcomes

This section summarises the outcomes of the survey across the key topic areas outlined in Section 1.0. Results of the survey have been analysed using descriptive analysis and qualitative analysis, as appropriate. Where relevant, quotes provided by survey particiapnts have been used to highlight issue themes and to facilitate issue interpretation. The results presented represent the collective perceptions of respondents who completed the survey.

2.1 Attitudes towards the Company

Given that the Martins Creek Quarry has been operating in the area for some time, it was considered useful to assess current community attitudes towards the Quarry operator – Daracon. The following sections outline community perceptions associated with the company.

2.1.1 Top of Mind Associations

Respondents were asked to indicate '*what words or things come to mind when people mention Daracon*'. The following word cloud summarises the types of words that respondents outlined. It should be noted, the larger the size of the word in the cloud, the greater the frequency of response.

As the word cloud illustrates, trucks and noisy truck were key terms mentioned by a large number of respondents. Other words related to the type and nature of Daracon's business, namely a civil engineering firm, road builders, professional business, quarrying; and the size of their business e.g. Big-Business, Money and Greed.

Figure 2. Top of Mind Associations Word Cloud

A number of words noted also summarised respondent's perceptions of the relationship between Daracon and the community e.g. arrogant, inconsiderate; as well as respondent's feelings towards the company e.g. anger/frustration.

Other words related to perceived impacts of the company's operation, such as blasting, dust, road safety, road conditions, economic contribution.

2.1.2 Feelings towards the Company

To assess respondents feelings towards the company, one survey item asked respondents to indicate how they would rate their current feelings towards Daracon on a ten point scale from 0 (extremely negative) through to 10 (extremely positive). An average rating of 3.27 was obtained, with almost half of the sample polarised on the ten point scale; 35.9% of respondents provided a rating of 0 (extremely negative) with a further 5.1% of respondents providing a rating of 10 (extremely positive).

Respondents were also asked whether, in the past 12 months, their feelings towards Daracon had become more positive, remained the same or become more negative. A total of 63.6% of the sample expressed that their feelings towards the company had become more negative, with 29.5% indicating that their feelings had stayed the same. A total of 7.7% of respondents' attitudes had become more positive.

The following quote highlights some of the sentiment expressed.

> *'The Daracon owner, at the first meeting, stood before the residents stating "he had worked hard all his life and he does not have to listen to this". I would like the owner to stand before the same meeting and admit that his increase volume of output was illegal and without approval'.*

2.1.3 Attitudes towards the company and its activities

Respondents' were also asked to indicate, using a five point likert scale (Strongly agree, agree, neither agree nor disagree, disagree and strongly disagree) their degree of agreement or disagreement with a number of items that related to Daracon's actions and activities in the area.

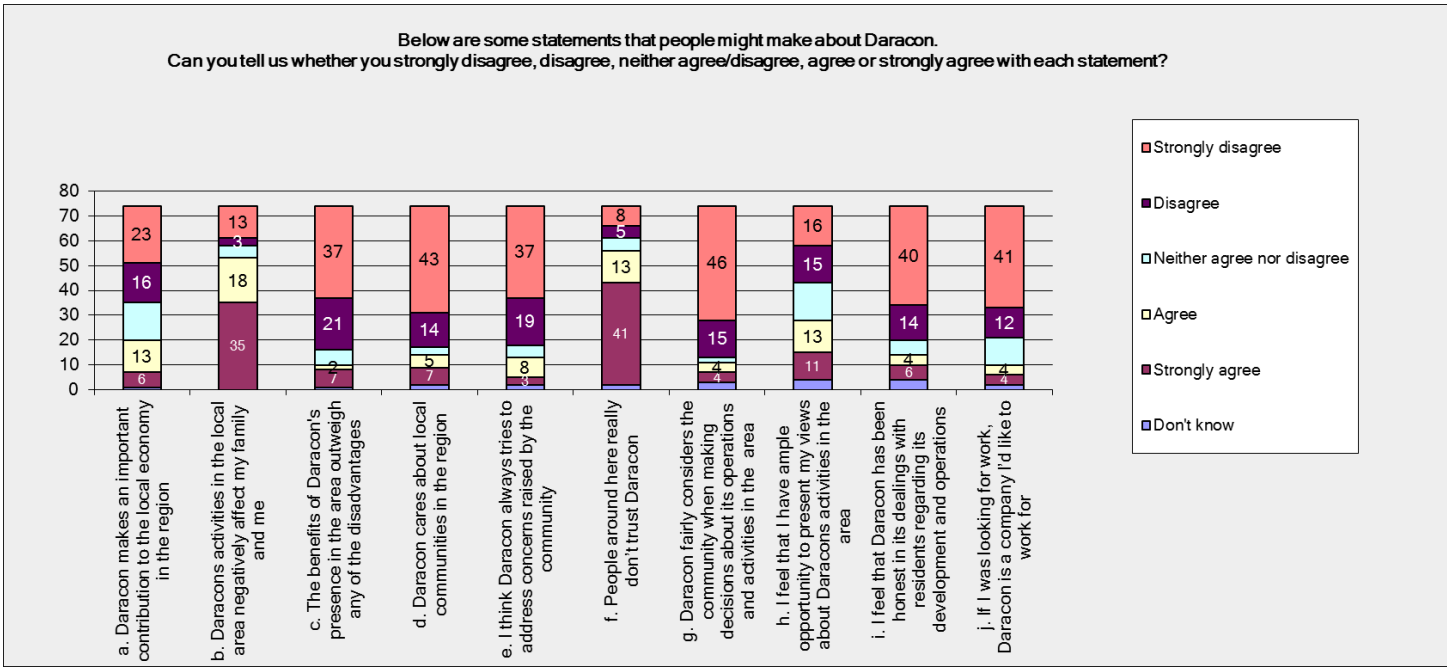


Figure 3. Attitudes towards Daracon and its activities in the area

The following dot points summarise the key outcomes of the attitude scale analysis.

- 52.7% of respondents don't think that Daracon *makes an important contribution to the local economy in the region*; with 26.3% agreeing that they do make an important contribution;
- 71.6% of respondents also don't believe that the benefits of Daracon's presence in the area outweigh any of the disadvantages;
- 72.2% of respondents think that *Daracon's activities in the local area negatively affect themselves and their family*;
- The majority of respondents (77.0%) don't agree that Daracon *cares about local communities in the region* or *addresses concerns raised by the community* (75.7%);
- 82.4% also don't think that Daracon *fairly considers the community when making decisions about their operations and activities in the area;*
- Trust in the company appears low, with 72.9 % of respondents agreeing with the statement that *people around here really don't trust Daracon*; only 17.6% of respondents disagreed with this statement;
- in relation to having *ample opportunity to present their views about Daracon's activities in the area,* 32.4% agree that they have opportunity to present their views, with 41.8% not in agreement with the statement;
- 72.9% of respondents don't believe that Daracon has been honest in its dealings with residents in relation to its operations; and
- 71.6% would not seek out the company for employment reasons.

In relation to the company's environmental practice, the majority of respondents (79.4%) were also not of the opinion that Daracon's environmental performance was an example of good practice; that the company is taking measures to address environmental issues (69.8%) or that the company's activities are environmentally sustainable (76.7%).

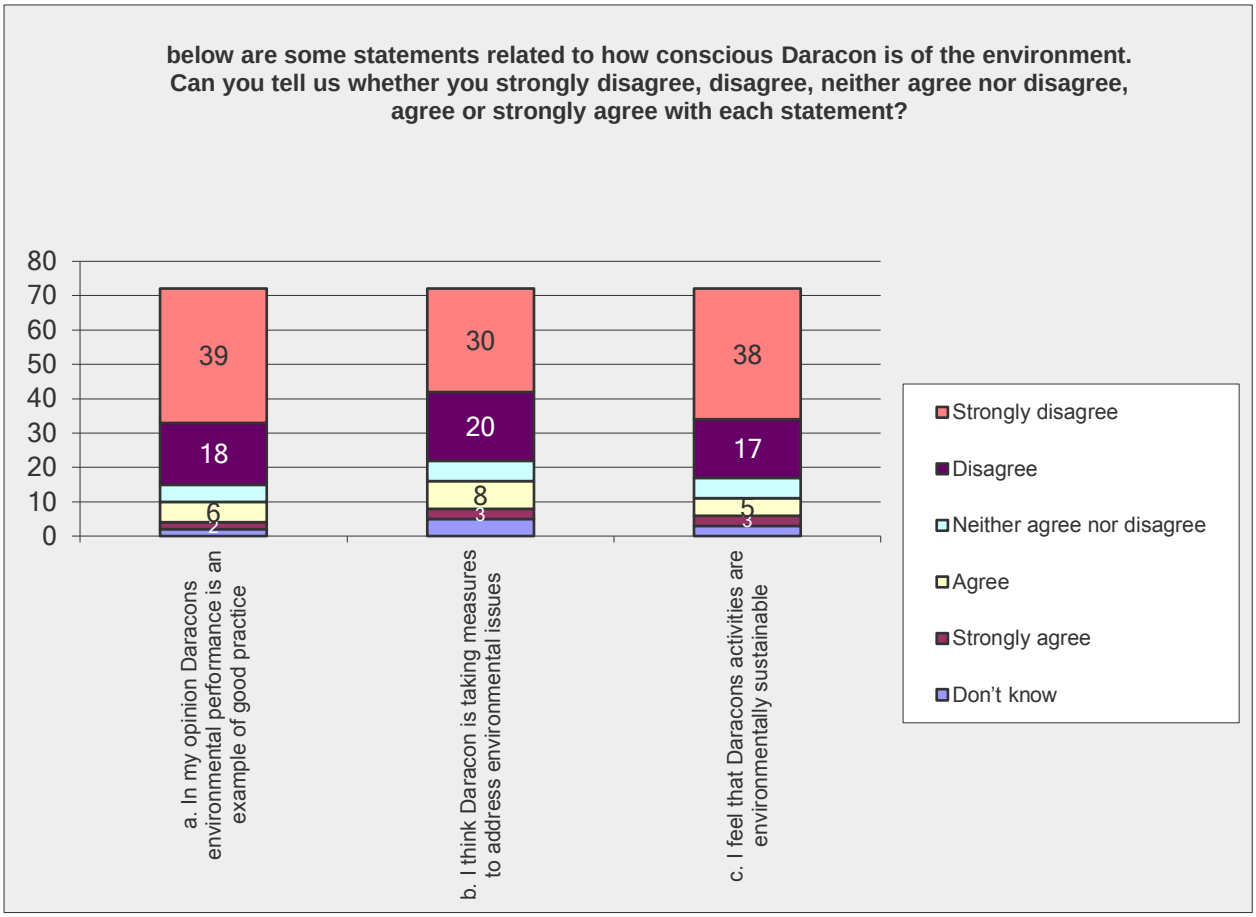


Figure 4. Attitudes towards Daracon's environmental practice

Respondents were also asked to indicate the degree to which their normal activities in the area have been affected, as a direct result of Daracon. Responses indicate that while 20.3% have *not been affected at all*; 40.6% believe they have been affected to *some extent*, with a further 37.5% affected *very much*. Types of affects experienced are highlighted in the following quotes from respondents and largely focus on noise (e.g. sleep disturbance on transport route), dust, road safety, road condition, vehicle damage (e.g. windscreens) and public amenity in the Paterson village:

> *'Greater caution on roads, road noise entering the house early in the morning'*
>
> *'I do not visit Paterson as much as I used to due to the unpleasantness of the truck movements'*
>
> *'Moving rooms in my home to get a better night's sleep due to truck movements past my home at 5.30am, not utilising my off street parking as it is too dangerous getting in and out of the drive onto main road re not enough safe breaks in the traffic'*
>
> *'Several broken windscreens from trucks, can no longer sit out in front of the local cafe as the noise from the trucks is deafening, the blasting is now well within hearing range as is the dust'*

'Roads are not as safe, I have had a rock thrown from a truck into my windscreen. Roads are less safe to bike or walk along'.

'Conducting business around town, dodging trucks as you cross the road with your shopping etc. Parking and exiting vehicle with trucks coming past. At my workplace, customers have commented on noise and dust pollution, poor roads. It turns tourists off our town.'

'Noise and traffic and air pollution ongoing every day'

'Won't let children, who are 13 and 12, walk to the shop or park without discussing road safety. Concerns for other kids who cannot play in yards'

'I grew up in the area & my family still live there. Visiting is now unpleasant sometimes due to the quarry & the trucks on the road are not only damaging the road surface but the drivers seem to care more about getting their load to where it is going than the safety of other road users.'

'I have nearly been wiped out by an empty truck driving around the bend on Gresford Rd near sextons buses, I have elderly parents who a very nervous on the roads because of the trucks'

'Riding and cycling along Brandy Hill drive and Seaham road has become very much more dangerous with excessive truck movements. Also find my love of gardening has diminished because I get upset by the constant truck movements past my house. The noise can be awful.'

'I have to exercise extreme care when using Paterson Bridge as it is not wide enough when a truck is turning onto it at the same time'

'Children's sleep disrupted by early morning trucks. Danger of cycling on local roads'.

2.1.4 Strategies to improve company-community relationship

When asked '*what do you think could be done by Daracon to improve your feelings towards the company'*, a number of suggestions were identified.

While some respondents felt the relationship had been badly affected given lack of engagement to date…

'It's too late; they have already displayed complete ignorance towards the community that have directed their concerns about the current expansion of the quarry and the negative impacts it is having'.

'It's there sense of entitlement, corporate goals over sustainable communities'

David Mingay demonstrates no ethical moral concerns re his company and its impact on the community. His response to concerns re all of the above was "if you don't like it then move."

…other respondents outlined a number of different strategies on how to improve company-community relations, as illustrated in the following quotes:

'Demonstrate some genuine empathy towards the community. Cap hourly truck movements through Paterson, defer opening till 7.00am and stop Saturday working. Fixing the road surface would help too.'

'Cease road transport through community villages and use alternative roads and daytime rail schedules'

'Operate the quarry in accordance with their current 1991 consent conditions and EA (i.e. 24 trucks per day 0.3MMtpa) and via the state significant development process gain approval to transport any additional material from the quarry via rail'.

'More consultation with locals, stop breaking the rules and realise the impact your company is going to have on hundreds of locals who moved out here for the peace and quiet, and donate some funds to the wildlife carers who are picking up the roadkill and caring for injured wildlife'

'Put some of their mega profits back into the community'

In summary, the strategies identified centred on relationship building, operating hours, greater compliance and improved management of product transport and other operational impacts. Some respondents wanted to see the expansion plans ceased completely.

- ✓ Relationship between company and community
  - Greater company consideration of community issues
  - Genuine engagement and collaborative approach
  - More responsible behaviour
  - Contribute to the community ($)
  - Discounted products available to local groups

- ✓ Operating hours
  - 7am start
  - No Saturdays

- ✓ Greater compliance
  - Improved management of impacts e.g. reduce noise and dust
  - More stringent controls

- ✓ Truck movements
  - Cap hourly truck movements
  - Limit hours of truck movements
  - Transport product by rail
  - No trucks through Paterson
  - Greater driver speed compliance
  - Fully cover loads
  - Fix/improve roads

- ✓ Cease expansion plans
  - Leave the area

2.2 Project Related Issues

Survey respondents were also asked a number of questions about the Martins Creek Quarry proposal specifically. Key findings are presented in the sections below.

2.2.1 Knowledge of the Project

Knowledge of the project was relatively high among respondents with an average knowledge rating of 7.12, with 81% of respondents rating their knowledge of the project as greater than 5 on the knowledge scale (0 - no knowledge through to 10 – a high level of knowledge).

2.2.2. Support for the Project

Support for the project was low as measured on a 10 point scale with 0 being not supportive at all and 10 being very supportive. A total of 51.9% of respondents provided a rating of 0 with only 6.33% indicating they were very supportive with a rating of 10. The average level of support was 3.03.

2.2.3 Project Issues

In relation to the Project, respondents were first asked to list their top three issues in relation to the project (unprompted) and were then provided with a list of potential impacts of the project to indicate their level of concern (low, medium or high).

When unprompted, the following figure illustrates the issues of most importance to survey respondents. As the chart shows, the volume/number of truck movements and road safety issues associated with truck movements were two of the top 3 issues identified, along with road and bridge conditions and subsequent damage to cars e.g. broken windscreens. Noise and vibration from truck movements and impacts on the amenity of rural life, sense of community and local businesses in the Paterson village were also frequently mentioned.

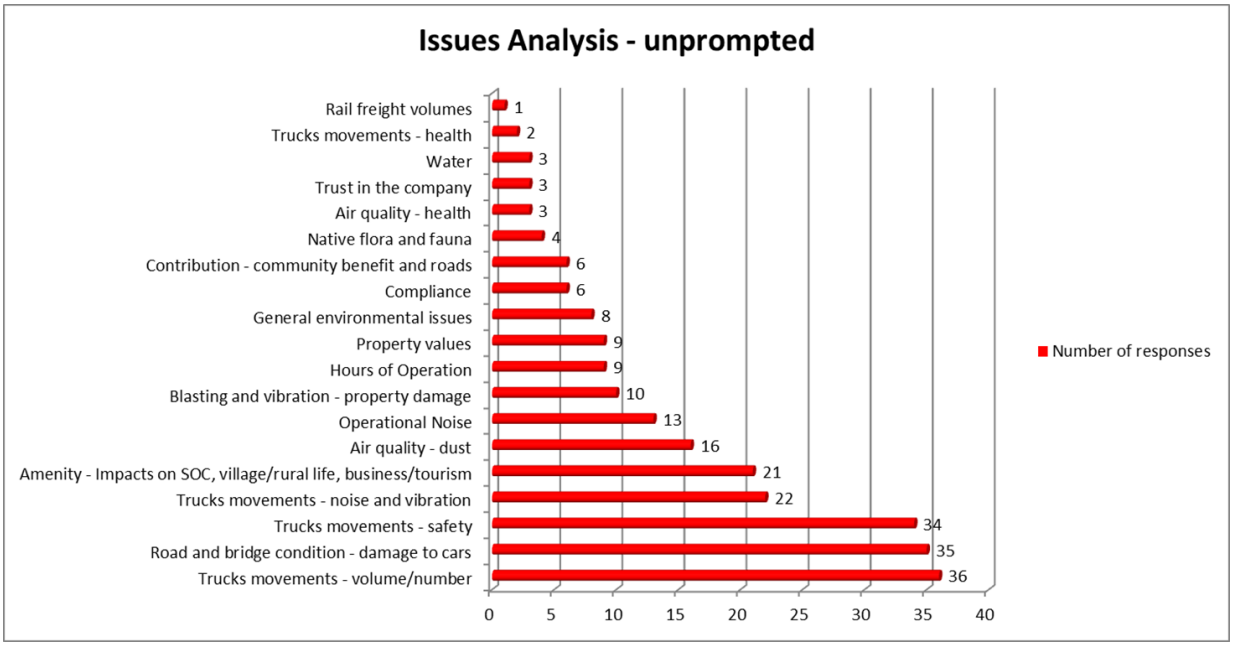


Figure 5. Perceived issues associated with the Project (unprompted)

When provided with a list of issues or potential impacts of the Project, the following levels of concern (low concern = 1; 2 = medium concern; 3 = high concern) were noted. As Figure 6 illustrates, issues of greater concern were the same as those that had been previously identified and included 1) road infrastructure; 2) road safety; and 3) truck movements. Operating hours also had a higher level of concern as well as community amenity and health and wellbeing. The following quotes highlight the perceived loss of village amenity experienced by many locals and perceived impacts on individual health and wellbeing:

> *'Loss to Property valuation and the value of community pride. Community peace and pride can still be achieved with business and economic development, with cooperation and involvement of community and other businesses, no matter how small they are. When people comment frequently "it was a great place Paterson, but too much traffic for a visit now"*

> *'When we first moved to the area, the quarry and the way it was operated had absolutely no impact on us. Since Daracon has taken over it has significantly changed our experience and pleasure living here.'*

> *'I have had to live through Daracon's haulage in some cases with 40 to 60 trucks per hour travelling just metres away from my house for 11 hours per day from 05:30am in the morning, it has caused dilapidation damage to my property due to vibration and resulted in emotional disturbance to my household and myself.'*

Overall, the majority of potential project issues received relatively high levels of respondent concern, with the exception of issues relating to train movements and train noise which received lower ratings.

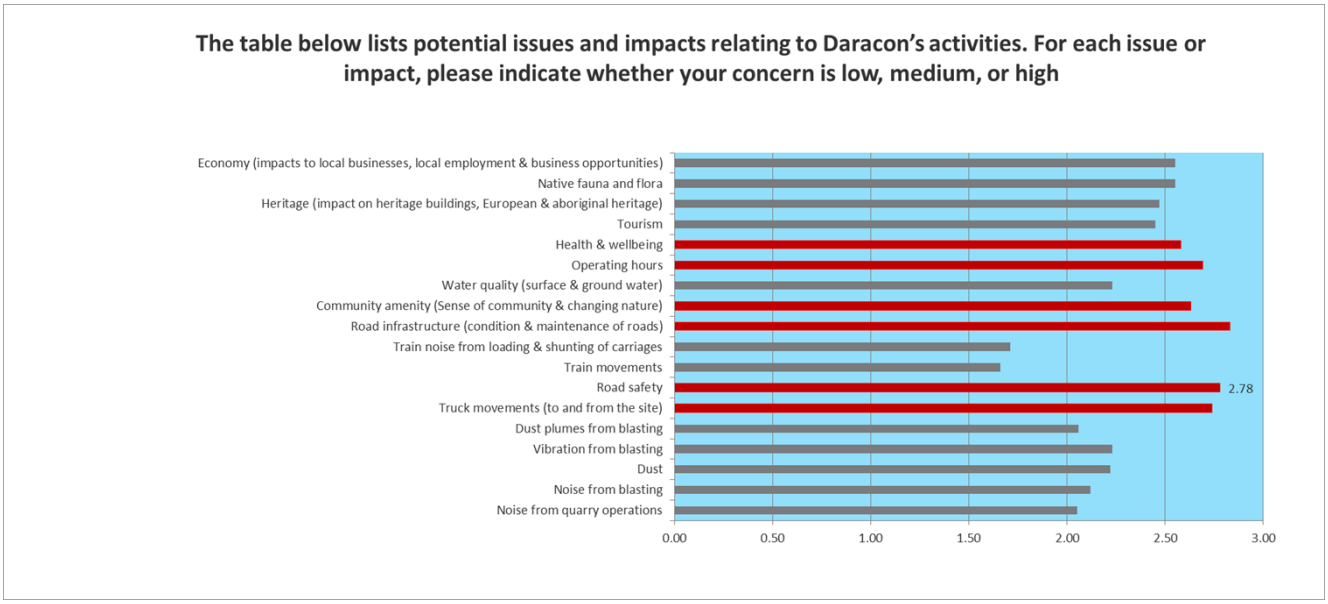


Figure 6. Level of issue concern (prompted issues)

The above analysis clearly indicates the issues of importance and relevance to community respondents and highlights the issues which the community will want to see considered and addressed in the Environmental Impact Statement for the Project.

2.3 Community Contributions

As part of the survey, respondents were asked to recall any local community contributions made by Daracon. A total of 75% of respondents could not recall any local community contributions made by Daracon, with 25% recalling contributions as outlined below:

- Flashing speed sign in Paterson
- Donations to the Paterson Preschool for equipment
- Pedestrian bridge adjacent to the school – Daracon provided the gravel and Rotary undertook the installation
- Provision of cheap gravel for repairs post the recent super storm event
- Dungog Shire Council borrowed the rock crusher at no cost
- Maitland Council Roadworks proposal at Tocal Road – 50% funded by Daracon
- Gresford-Vacy Soccer Club
- Dungog State Emergency Service (SES)
- Paterson River Rugby League Club
- Vacy Country Carnival
- Gravel donation for Rotary Walking Track

Respondents' were also asked to comment on what focus areas should the company consider for future community contributions. Such focus areas could be considered as part of the Voluntary Planning Agreement (VPA) negotiation between the Dungog Shire Council and the company.

A number of the suggestions related to the Project specifically and/or the management of impacts associated with the quarry operation, namely:

- Road safety programs
- Driver safety programs and driver monitoring program
- Permanent road infrastructure contribution (upgrade and maintenance)
- Development of the rail as alternate means of product transport
- Develop a bypass around Paterson
- New quarry entrance to bypass Martins Creek
- Repairing damaged bridges
- Independent traffic studies and traffic monitoring
- Repair and/or compensation for damage to homes/properties
- Double glazing for properties located close to transport route (within 100 metres) (Op)
- Public release of quarry monitoring data
- Effective rehabilitation of the site
- Noise reduction strategies

Other ideas focused more centrally on the community:

- Community development fund
- Annual community grant scheme
- Upgrade and maintenance of parks and public amenities e.g. parks, recreational grounds, pavements, safe bus shelters
- Youth schemes

- Support for local schools
- Support for local events e.g. Carols in the Park
- Provision of gravel for roads and driveways in the community.

Other suggested initiatives were more environmentally focused:

- Native animal care and rehoming
- Native animal trust
- Heritage conservation
- Environmental conservation
- Native bush regeneration
- Weed eradication programs
- Landcare.

In relation to contribution to date, the following quote highlights much of the community sentiment:

> *'Starting from a position of apparent complete apathy, Daracon has a long way to go to build any trust in the community. They might start by putting some serious money into road repair'.*

3.0 Conclusion

This report has provided a succinct summary of a sample of community respondents' views on the Martins Creek Quarry Project and Daracon, the quarry operator. As noted in Section 1 of the report, the survey has been undertaken by the MCQAG as a mechanism to better understand wider community issues on the quarry proposal, beyond the group's membership. The results indicate that community respondents have a number of key issues of concern and relevance; and the survey outcomes are provided to ensure that these issues are adequately noted and addressed in Daracon's environmental impact assessment for the project.

Appendix 11 Business Survey

MCQAG Business Survey Outcomes

Method

- Hard copy survey – drop and pickup – undertaken in November 2015
- Local businesses approached to participate
- 10 respondents in total

Business Characteristics

- All businesses based in Paterson
- Business sectors included hospitality, retail and sales, community and health services
- Businesses had on average 2 full-time employees and 3 part-time/casual employees
- Business owners and employees all resided locally: *Paterson, Vacy, Hilldale, Duns Creek, Brandy Hill, Maitland, Metford, Rutherford*

Economic Association with Martins Creek Quarry

- None of the businesses that participated were current suppliers of the MCQ
- When asked the extent to which their business currently benefits from the presence of the quarry using a scale of 1 (not at all) to 10 (to a great extent), a mean of 2.1 was obtained

Current impacts of MCQ operations

- All current impacts experienced by local business operators who completed the survey, related to trucks and truck movements and included:
  - Noise
  - Dust
  - Volume of trucks
  - Road condition
  - Resident/Pedestrian safety
  - Town Parking
  - Traffic congestion
  - Structural damage to property and heritage buildings (due to vibration)
- Impacts noted were perceived to be medium to high in magnitude

Potential MCQ Project Impacts

- There was also a view that such impacts would be exacerbated if the project was approved:
  - Increased noise
  - Increased dust
  - Increased frequency of truck movements
  - Reduced road safety
  - Increased parking problems
  - Increased traffic congestion in Paterson
  - Further damage to buildings (heritage and non-heritage)
  - Further road deterioration – wear and tear
  - Loss of business income due to decreased patronage of accommodation, traffic/parking issues etc.

In our words…

- “We have had customers leaving after staying one night and complaining about the noise early in the morning”
- “Give the town a break and reduce trucks through our town”
- “We have reduced customers due to their difficulty in getting in and out of the business due to the trucks”
- “I am constantly asked by guests, how do you put up with this? It really spoils the appeal of this historic little town – such a shame!”
- “What damage is being done to the heritage buildings?”

In our words…

- “It’s a danger to customers crossing the road”
- “We do not have a problem with speeding trucks in general, but it is just the volume of vehicles on this supposedly main road”
- “Customers unable to park safely in the area”
- “We benefit in small sales and local employment – all sales are important to a small business”
- “Customers do mention the danger felt with so many big trucks and trying to turn…”

Potential Benefits of the Project

- Some businesses, particularly retail businesses, saw some benefit in further local purchases by quarry truck contractors e.g. purchase of lunches, drinks etc

- Generally, business respondents did not believe that their business would be likely to benefit greatly if the MCQ project was approved

Potential Strategies to manage impacts

- Reduced / cap truck numbers through the town per day
- Nominated hours for truck movements e.g. start later in the day, curfews, no weekends
- Reduced speed limits and greater police presence
- Driver monitoring program to ensure road safety
- Monitoring of vibration impacts on key heritage buildings
- Fully cover loads
- Community contribution
- Prioritise local procurement e.g. sandwiches, fuel etc
- Road contribution
- Discounted product available to local community

Appendix 12 Tourism Profile

1.0 Tourism Profile

1.1 History of Paterson

In 1801 a party led by Lieutenant-Colonel William Paterson explored the lower Hunter Valley, with a permanent convict settlement established at Newcastle in 1804. It was as early as this time that convict gangs commenced cutting of timber on the Paterson River.

In early 1822 the first large-scale grants to settlers in the Paterson area were made to William Dun and James Webber. Dun and Webber were the first of a wave of immigrant settlers attracted to the fertile alluvial soils and prime river frontages of the Paterson area, with easy access to colonial markets via the nearby deep-water port of Morpeth from which vessels regularly voyaged to Sydney.

The trickle of settlers to the Paterson area in 1822 soon became a flood and within a few years most of the prime river frontages had been granted. With the influx of people to the district, the need for a township and public wharf became obvious. In 1833 the plan for the township of Paterson was approved and blocks of land were put up for sale.

Given this history, the Paterson village has a strong local heritage from colonial buildings to vintage trains and famous poetry. The village also has a number of old country pubs, cafes and a number of accommodation houses which line the main street through the small town. A market is held monthly located next to the gallery.

Local attractions include the Paterson Historical Court House Museum, which has a permanent exhibition on Australian poet Dorothy Mackellar, who as a teenager visited the family retreat at nearby Torryburn. A breaking drought in the area was said to have inspired the memorable lines in her famous poem *My Country*.

One of Australia's finest collections of colonial farm buildings dating back to 1822 is at Tocal Homestead, set among fig trees on a vast rural property overlooking the river. The homestead is open on weekends from March to November.

In relation to rail memorabilia, the Paterson Rail Motor Museum is open on the third Saturday of the month and for

the Rail Motor Society Open Day. The rail museum has many old steam and diesel trains.

1.2 Visitation and Visitor Economy

Paterson is located around 2 hours north of Sydney in the Dungog Shire. The following information is sourced directly from the Dungog Shire Visitor and Destination Strategy and Management Plan (2015-2018).

1.2.1 Visitation Statistics

Total visitation to Dungog Shire over the past decade has generally increased from around 160,000 visitors per annum in 2008/2009 to over 200,000 per annum in 2014; and is largely made up of around 65% day-trippers, 34% overnight visitors and 1% international visitors; and is fairly consistent within NSW as a whole.

The visitor economy for the Dungog Shire is worth approximately $47 million with overnight visitors spending approximately $33 million in the Dungog Shire annually. The average length of stay in the Shire is 14.8 nights compared with 24.2 nights for NSW. Expenditure per visitor totals around $1,144 per person (compared with $2,229 for NSW as a whole) with the expenditure per night totalling $67 (compared with $92 for NSW).

The majority of visitors to Dungog Shire come to the area for a holiday (73%), with a further 22% visiting the area to see friends and relatives. Visitors largely travel from regional NSW (58%), with a further 26% coming from Sydney. Dungog Visitor Centre data further documents that around 26% of visitors come from Newcastle, 29% from Sydney, 10% from the Central Coast, 8% from interstate and 5% from international destinations. Areas of interest to the VIC visitors include accommodation (3%), camping (15%), walks (11%) and events (8%).

1.2.2. Motivators for Visitation

A recent project survey undertaken as part of the tourism planning process (Dungog Visitor and Destination Strategy and Management Plan, 2015-2018), has also indicated primary and secondary motivators for visitation to the Shire.

General community residents outlined a number of motivators for visiting the Dungog Shire, as outlined in the following table.

Reason for visiting	Percentage of response (%)
State and National Parks	79
Art, Film, Good and Music Events	77
Horse and Cattle Events	61
Fitness, cycling, swimming and canoeing events	47
Sporting events	36
Mountain bike trails	49

Cycling trails	49
Historic Villages	52
Dungog Common	28

Secondary motivators identified by tourism businesses and the general community as key reasons to visit the Dungog Shire are further outlined in the following table.

Supporting Motivators	Tourism Businesses (% of response)	General Community (% of response)
Antiques and Bric-a-Brac	81	58
Cafes	78	57
Wineries	73	51
Galleries	70	54
Hotels/Pubs	69	64
Markets	68	52
Cultural Heritage	67	41
Restaurants	66	55
James Theatre	64	-
Art Trails	59	-
Historic Villages	57	34

The following dot points were also considered to have a positive impact on visitation to the Dungog Shire, namely:

Visitation	Percentage of Response
Natural Beauty and Fresh Air	100
Proximity to the Barringtons	97
Pristine Rivers	97
Accessibility to the Barringtons	92
Heritage of the countryside	79
Availability of activities for holiday makers	64
Railway links	61
Close proximity to main markets	60

In 2015, approximately 110 events were conducted in the Dungog LGA as defined below.

- 8 major events (2 local shows, 1 Billy Cart Derby, 2 Rodeos, 1 Festival, 1 Village Fair and 1 NYE celebration)
- 19 events with a horse and cattle theme
- Around 50 markets throughout the year
- 1 motor cycle event, 1 car show
- 3 bike riding events

- 20+ film events at the James theatre
- 7 arts and crafts events
- 4 Fairs
- 1 flower show
- 1 ball
- 1 Charity event
- 3 walking or running events
- 10 Music events
- 3 events with food and drink